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Factors Predicting High Risk Sex Practices and Incidence of STIs among Women Veterans in Florida

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FACTORS PREDICTING HIGH RISK SEX PRACTICES AND INCIDENCE OF STIs AMONG WOMEN VETERANS IN FLORIDA

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by

Beverly M. Fray

2020

To: Dean Ora Strickland
College of Nursing and Health Sciences

This dissertation, written by Beverly M. Fray, and entitled Factors Predicting High Risk Sex Practices and Incidence of STIs Among Women Veterans in Florida, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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Date of Defense: March 27, 2020

The dissertation of Beverly M. Fray is approved.

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and Dean of the University Graduate School

Florida International University, 2020

DEDICATION

I dedicate this dissertation to my daughter, Francesca Michelle-Ange Fray, and my grandson, Phoenix Ivory Nelson, who have been my mainstay throughout this seemingly interminable journey. Fran, I love you with all of me and know that my life would be meaningless without you, Phoenix, and Dean, your husband, the son I never had. Thanks for your understanding. I also dedicate this dissertation to a very special, patient and kind lady, Mona Alexandre, who walked into my life in 2012 and told me she would like to take care of my feeble and sick mother. And she has never left. As her name suggests, she is an angel who came in to my life when I needed someone most and I know that if it had not been for Mona's love, gentleness, trust, and unbridled doggedness in her love for my mother and I, I would not have completed this journey. She has stood by me, through thick and through thin, and so this is for her, too. Indeed, it is true that people come into one's life for a reason.

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ABSTRACT OF THE DISSERTATION

FACTORS PREDICTING HIGH RISK SEX PRACTICES AND INCIDENCE OF STIs AMONG WOMEN VETERANS IN FLORIDA

by

Beverly M. Fray

Florida International University, 2020

Miami, Florida

Professor Ora Lea Strickland, Major Professor

Background: High-risk sexual behaviors are more prevalent among women veterans, than among women in the general population. Studies have demonstrated that this risk is associated with young age at enlistment into the military, history of sexual abuse, illicit drug use, multiple sex partners and history of military sexual trauma (MST), inclusive of other forms of abuse. Sexually transmitted infections (STIs) or sexually transmitted diseases (STDs) and their consequences exact heavy financial burdens on veterans' health services with millions of dollars spent treating STI-related illnesses, cognitive and functional disabilities, unplanned pregnancies, miscarriages and infertility. Despite the high prevalence of STIs in this population, there is a paucity of theory-guided research examining predictive factors of high-risk sexual behaviors among women veterans. No study has examined whether or not a hierarchical environment like the military impacts women veterans' sexual behaviors as they transition out of the military. Purpose: This study aimed to describe high-risk sexual behaviors and incidence of STIs in women veterans and assess factors that may also predict high-risk sex practices among them.

Methods: A descriptive, correlational design was utilized to address the study aims based on a sample of 221 women veterans in the State of Florida. Measures included a demographic questionnaire, the Safer Sex Behavior Questionnaire (SSBQ), the Abuse Assessment Scale, the STD Knowledge Questionnaire, and the Social Dominance Orientation Scale. The study was guided by the Social Dominance Theory (SDT).

Results: Statistically significant differences were noted in the SSBQ scores among people of different educational levels and races. There were significant positive correlations between SSBQ scores, and level of religiosity and between the STD Knowledge Questionnaire scores and level of religiosity. Social Dominance Orientation was negatively associated with Safer Sex Behaviors scores and the overall prevalence rate of STIs was almost fifteen percent in the group.

Conclusions: Results of this study indicate that screening for high-risk sexual behaviors among female veterans must include abuse, economic dependence, social obligations and level of religiosity. This study has policy, education, and nursing implications and lays the foundation for future comparative studies.

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9. Michael E. DeBakey Veterans Affairs Medical Center	MEDVAMC
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CHAPTER I

INTRODUCTION

Statement of the Problem

The subject of high-risk sex practices among women veterans is important because risky sexual behaviors lead to increased rates of sexually transmitted infections (STIs) with life-threatening health consequences. Among female military personnel, STI rates far surpass those of non-veteran women in the general population (American Sexual Health Association, 2016; Bolan, 2013; Cohen, et al., 2012; Harbertson et al., 2015). There also is limited data on gender specific STI risk factors among military personnel (Korzeniewski, 2012; Stahlman, et al., 2014). This raises concerns about dangerous STIs such as the human immunodeficiency virus (HIV) which can suppress immune function as well as the human papilloma virus (HPV) which can cause cancer. Studies such as those conducted by Goyal, Mattocks and Sadler, 2012 and by MacDonald, 2013 have demonstrated that STIs are a growing problem among veterans who are, typically, older when diagnosed. The proportion of female active duty personnel in the military is increasing steadily, from 2% in 1973 to 15% in 2012 (Goyal, Mattocks & Sadler, 2012). Sexually transmitted infections become even more of a growing concern among women veterans because enrollment of women in the military is expected to rise to 17% by 2043 and the population of women veterans is expected to peak at 15% by 2036 according to the Veteran's Administration (VA, 2013; 2014).

Women who enroll in the military tend to engage in risky sexual behaviors, and many have a history related to some type of trauma including childhood and adult sexual abuse, which are leading risk factors for risky sexual behavior among women (Bolan, 2013; Goyal, et al., 2012; Kimmerling et al., 2010). Women will be most affected by STIs if the trend of their increasing enrollment in the military continues. The Department of Defense (DoD) estimates that the rate of STIs — particularly the human immunodeficiency virus (HIV) and human papilloma

virus (HPV) — will rise as more women enter the military and become fully engaged in all aspects of military life (DoD, 2009, 2014). The military is also a gender-imbalanced and highly stratified environment in which women are generally subordinate (Reis & Menezes, 2019; Sidanius, Pratto & Brief, 1995; 1999), a factor, theorized in this study, that can influence female Veterans' abilities to negotiate and engage in safer sexual practices. These factors are especially highlighted when military women perceive themselves as less powerful than those who outrank them, making them more vulnerable to engage in risky sexual activities. This vulnerability is due to the tendency for military personnel to believe they must follow the commands of those who are of superior rank, even if a sexual advance is deemed inappropriate. Such perceptions developed by women while serving in the military may well carry over into behaviors as veterans and allow risky sexual behaviors to persist after they leave the military.

A recent study by Albright et. al. (2019) highlighted gender-specific sexual behavior differences among student veterans and non-veterans that negatively impacted their health. This study found that student Veterans were more likely than non-Veterans to have had multiple sexual partners, a factor known to place individuals at risk for STIs. Findings also demonstrated that men student veterans were more likely to report for a visit to a doctor for an STI than women student veterans. Transgender women in the study were more likely to use emergency contraceptives after unprotected sexual activity. These findings have important implications because sexual minority women have demonstrated higher all-cause mortality risk rates than sexual minority non-veteran women in a recent study (Lehavot et al., 2016): Even so, little research has been conducted on female Veterans' sexual behaviors and practices and on potentially related factors that can predict high risk sex practices such as female Veterans' knowledge, attitudes, beliefs about sexual behaviors and practices in relation to their socioeconomic circumstances. No study has been conducted among female Veterans to elucidate the power dynamics that exist in the interpersonal relationships among female Veterans and their

sex partners that may place them at risk for STIs, including level of education, ethnicity and history of violent victimization against the theoretical background of social dominance.

Scope and Impact of the Problem

According to the Centers for Disease Control and Prevention (CDC), sexually transmitted disease (STD) rates are at an unprecedented high in the United States with surges in numbers for the fifth consecutive year (CDC, 2018). The United States experienced an all-time high in the combined reported cases in 2018 of syphilis (over 115,000 cases); gonorrhea (5% increase since 2017, the highest number reported since 1991 which comes to over 580,000 cases); and chlamydia (a 3% increase over 2017 to more than 1.7 million cases and the most ever reported to the CDC as given in its Sexually Transmitted Disease Surveillance Report, 2018). This is an indication that there are probably more unreported and/or undiagnosed STIs circulating in communities across the United States. The CDC asserted that the 1.5 million cases of chlamydia reported then represented the highest number of annual cases of any condition ever reported to CDC in 2015.

Young people are most severely affected by STIs overall, but young women face the most serious long-term health consequences. It is estimated that undiagnosed STDs cause infertility in more than 20,000 women each year. Sexually transmitted infections/diseases can result in serious health sequelae. The CDC (2018) reported that newborn death rates related to congenital syphilis increased by 22% between 2017 and 2018 (77- 94) as a tragic outcome of the rise in syphilis. Other related syphilis data included a significant increase in the number of primary and secondary syphilis cases (the most infectious stages of syphilis) which increased by 14% to more than 35,000 cases, the highest number reported since 1991. Syphilis cases among newborns increased 40% to more than 1,300 cases. The States of Texas, California, Florida, Arizona, and Louisiana accounted for 70% of cases of congenital syphilis in the U.S. even though most states reported at least on case of the infection.

Overall, there are approximately 20 million new STIs in the United States annually, and half of them occur among youth in the prime of their childbearing years, aged 15 to 24 years. Of these, women account for 51% (CDC, 2013; 2018). While most of these STIs will not cause harm, some have the potential to cause serious health problems, especially if not diagnosed and treated early (Carmona-Gutierrez et al., 2013; CDC STI Fact Sheet, 2008, 2013, 2016, 2018; Merriman, et al., 2006). The direct medical cost to the US is more than $16 billion, according to the Office of Disease Prevention and Health Promotion (ODPHP) with a prevalence of more than 110 million new and existing STIs (ODPHP, 2019). This figure does not include either indirect costs (such as loss of productivity) or intangible costs (such as pain and suffering) associated with many STIs; clearly, including such costs would have resulted in a substantially higher estimated economic burden. The CDC's analyses included eight common STIs: chlamydia, gonorrhea, hepatitis B virus (HBV), herpes simplex virus Type 2 (HSV-2), HIV, HPV, syphilis, and trichomoniasis.

It cannot be overstated that STIs are prevalent among military personnel. Between January 1, 2010 and December 31, 2018, Stahlman et al. (2019) conducted an STI surveillance study among all active component service members of the U.S. Army, Navy, Air Force and Marine Corps who served at any time during the period. They found that chlamydia was more common than any other STI and occurred approximately three times the rate of HPV infections among active duty personnel. These researchers also found that women had the highest incidence of STIs except for syphilis. The rates of all STIs were highest among non-Hispanic Black service members when compared to other race/ethnicity groups. The overall rates were highest among members of the Army with regard to chlamydia, gonorrhea, and genital herpes simplex virus Type 2. The overall incidence rate of syphilis was highest among Navy members, and the overall rate of genital HPV was highest among Air Force members. The study also found that, compared to their respective counterparts, enlisted service members and those with lower levels of educational achievement tended to have higher overall rates for all STIs. Married service

members had the lowest incidence rates of all five STIs compared to service members who were single and never married or of other/unknown marital status. Overall rates of chlamydia, gonorrhea, and syphilis were highest among those working in motor transport, while genital HPV rates were highest among those in healthcare occupations, and the highest rates of genital HSV-2 were among those working in communications/intelligence, health care, or motor transport (Stahlman, et al., 2019).

Stahlman et al., (2014) conducted an inquiry on a large sample of active duty personnel (10,250), of which 3, 248 were women. Participants were mostly White (59.3%), aged 21-25 years (42.6%) and the prevalence of any reported STI in the previous 12 months was 4.2% for men and 6.9% for women. One-fourth of men and 9.3% of women reported five or more sexual partners in the past 12 months. Binge drinking, illicit substance use, and unwanted sexual contact were associated with increased reporting of sexual partners among both genders. Risk factors were different for women. Family/personal-life stress and psychological distress influenced the number of partners more strongly for women than for men. The researchers concluded that factors associated with reports of increasing sexual partnerships and with reports of an STI differed by gender and pointed out that gender-specific intervention strategies may be most effective in mitigating the factors that influence risky sexual behaviors among military personnel.

HIV: An STI with Major Negative Health Consequences

Human immunodeficiency virus is probably the most serious of all the STIs, hence this special focus. It exacts long-term social, economic, physical and psychological burdens on those affected and on society at large. There is no cure for HIV/AIDS, unlike most other STIs. It disproportionately affects minority populations, especially African American women (AAW) and poor women more than any other group. Although African American women constitute only 13% of the US population, they account for nearly 65% of all new HIV infections among American women (Fletcher, et al., 2016). This population additionally suffers comparatively greater adverse health outcomes related to HIV status and AAWs living with HIV in the South

may be further burdened by HIV/AIDS stigma, which is comparatively more pronounced in this region (Fletcher et al., 2016).

The long-term effect of HIV/AIDS means that the disease has the potential to wipe out any population if not diagnosed and treated early because symptoms are so mild in its early stages that they can be easily ignored for the common cold. Many do not seek treatment because of its seriousness and the social stigma associated with HIV/AIDS. Some who know they are infected refuse to disclose their status due to fear of rejection, while others continue to engage in unprotected sex, "bare backing" (unprotected sex in solidarity with a HIV infected person) or "revenge" sex, which can lead to prosecution in many countries, including the United States (Logie & Gadalla, 2009). Many are even afraid to discuss their status with health providers (Earl, et al., 2013; Minick, et al., 2016). It has been argued that criminalization of HIV transmission for any reason has resulted in fewer persons being tested and a worsening of the epidemic (Phillips, et al., 2013; United Nations Development Programme [UNDP], 2012). Among HIV-infected people in the United States, approximately one in twenty is a woman, and people over age 50 accounted for about one quarter (21%). Forty-four percent of older adults between ages 50 to 54 are infected with HIV and older adults with HIV/AIDS are more likely to be diagnosed much later than those who are younger (CDC, 2014).

There were over 25,000 veterans in care with HIV in the US, ranging from 343 to 3,389 HIV-infected veterans per the Veterans' Integrated Service Network (VISN) with half of all VISNs caring for over a thousand such veterans. There was a 3.8% increase in the number of veterans being treated for HIV/AIDS between 2007 and 2011 (VA, 2012). The number of veterans with HIV/AIDS fell in the East during the same period but increased in the South especially among VISNs 6, 7 and 8. The State of Florida, which is the geographic focus of this study falls within VISN 8. Thirty-five percent of veterans with HIV/AIDS received care in the South; 28% in the East, 22% in the West, and some were seen in more than one VISN, probably due to relocation (VA, 2012).

The majority of veterans in care for HIV are from minority racial and ethnic groups. Fifty percent of US HIV-infected veterans are Black, comprising nearly half of the VA HIV-infected population (48%), while Whites constituted 40% of the VA HIV-infected population. Seven percent of veterans infected with HIV identified themselves as Hispanic or Latino while less than 1% of HIV-infected veterans in VA care were Native American, Alaskan Native, Asian, Native Hawaiian, or Pacific Islander. The percentages of HIV/AIDS infected veterans in VA care according to race/ethnicity have remained consistent over the past five years (VA, 2012).

Men constitute 97% of HIV infected veterans and the rest (3%) are women who number approximately more than 600, even though women in the general population account for about 25% (CDC, 2012). This partially explains why studies among female Veterans with HIV have not taken place, when viewed against the background of such a comparatively small number. Most of these women were infected through heterosexual activity, and the majority (45%) comprised women of color of which 48% are Black, (VA, 2012). It must also be noted that not all women veterans seek care from the VHA. Consequently, other HIV-infected veterans may not be accounted for in the numbers reported by the VHA. HIV-infected female Veterans in the State of Florida were, according to the Florida Department of Health (FDOH), less likely to start antiretroviral therapy (ART) than women and men from other regions of the United States. The State of Florida also had the highest rate of HIV/AIDS events (81%); the highest number of HIV infected veterans nationally and the second highest number of new HIV cases (FDOH, 2013; VA, 2012).

It was estimated in 2008 that approximately one of every 250 veterans in care in the VHA was living with HIV/AIDS with almost 9% dying and another 9% entering the VHA yearly. HIV infection in the military tends to mirror that of the general population except in terms of age. The majority (66%) of veterans in VA HIV care are between 50 and 69 years old and 30% of new infections are among those 60 years and older. The southern VISNs account for the majority of

such cases, and minority women are disproportionately affected with 48% of the total being AAW.

Since HIV-infected veterans are older, they are more likely to start treatment late; suffer more immune-system damage; have poorer prognosis and shorter survival rates after an HIV diagnosis (VA, 2011): Therefore, HIV infected veterans are also likely to have more comorbidities such as diabetes (Butt, et al., 2004; Goulet, et al., 2005) and have a poorer prognosis than those in the general population (Frain et al., 2014). A diagnosis of HIV infection also comes with heavy burdens such as stigma and discrimination, which impact disease reduction and response (Bolan, 2013). These burdens are felt on individual, familial, community, and national levels. A lack of knowledge and inadequate negotiation skills about HIV and STIs can also negatively impact perception of risk, vulnerability, the need for testing, and treatment adherence (Archibald, 2007; Popoola, 2009; Swenson, et. al., 2010). Women veterans infected with HIV are less likely than their male counterparts to be on an antiretroviral treatment (ART) regimen due to lack of access to and knowledge about available care, decreased access to health care, and conflicting social and economic priorities, such as family obligations, lack of transportation, fear of disclosure/stigma, denial, cultural mistrust of the health care system, perception of their own needs as less important and depression (VA, 2011).

Women veterans with HIV have an increased risk of developing cervical, vaginal, and vulvar cancers especially if their cluster of differentiation-4 (CD4) count is less than 200. They also tend to have higher rates of persistent and recurrent rates of HSV-2, bacterial vaginosis and genital candidiasis compared with non-infected women veterans (VA, 2011).

Female veterans overall are at high risk for STDs and they suffer disproportionately from these conditions when infected because they are generally older when diagnosed; even so, little research that has explored predictors of high-risk sex practices among women veterans exists. Limited data available on gender-specific risk factors among military female Veterans even though factors associated with an increased number of sexual partners and presence of an STI

differ by gender (Stahlman, et al., 2014). Research findings have demonstrated that gender-specific interventions and strategies may be most effective in mitigating factors that influence risky sexual behaviors among military personnel (Stahlman, et al., 2014). This declaration is in tandem with the CDC and the World Health Organization (WHO), entities that advocate for culture- and gender-specific studies to understand factors that drive risky sexual behavior in order to promote appropriate healthy sexual behavior. It is against this background that the relevance of this study is highlighted. It is highly likely that the paucity of research in this area is related to the low number of women existing in a male-centric military environment; the young age of the women who enlist in the military and a highly structured environment with its own stratified system of rules and male-oriented mores, which when combined, increases the sexual risk behaviors of these women.

Purpose of the Study

The purpose of this study is to describe high risk sexual behaviors and factors that predict high risk sex practices and incidence of STIs among female military Veterans in the State of Florida.

Background

Epidemiology

Sexually transmitted infections (also known as STDs) refer to more than 25 diseases primarily transmitted through unprotected sexual activity with an infected partner. Sexually transmitted infection prevention is, therefore, an essential primary care strategy for improving reproductive health and safer sexual practices are crucial for preventing the spread of STIs. Despite their burdens, costs, complications, and the fact that they are largely preventable, STIs remain a significant public health problem in the United States and the world because sexual activity is a normal, human behavior which often defies rational thinking. Consequently, this problem largely goes unaddressed by the public, policymakers, and health care professionals. Sexually transmitted infections cause many harmful, often irreversible, and costly clinical

complications, such as reproductive health problems, fetal demise, perinatal health problems, and cancer among women; and although STIs also cause cancer in men this is rarely discussed, thereby freeing men to become promiscuous, seemingly without any personal ramifications such as guilt or feelings of responsibility due to established cultural and social practices. Sexually transmitted infections also facilitate the sexual transmission of HPV and HIV, the most feared and serious of all the STIs because they remain incurable. Autoimmune deficiency syndrome (AIDS), which is the terminal phase of HIV, wreaks untold havoc on the human mind, body and psyche.

The CDC (2014) estimates that there are approximately 20 million new STI cases annually, and almost half of them occur among young people age 15 to 24. Many cases of STIs go undiagnosed—and some common viral infections, such as HPV and genital herpes (HSV-2), are not reported to CDC at all—so the reported cases of chlamydia, gonorrhea, and syphilis represent only a fraction of the true burden of STIs in the United States. Untreated STIs can lead to serious long-term health consequences, especially for adolescent girls, young women and their potential offspring. The CDC (2016) also highlights that undiagnosed and untreated STIs cause infertility in at least 24,000 women annually in the United States (ODPHP, 2014).

Sexually transmitted infections are also a major concern worldwide. According to the WHO (Bingham, 2012; WHO, 2013, 2016), an aging population has triggered a re-examination of many ageist stereotypes, notably the assumption that older people invariably abandon more active social roles and do not engage in sexual activity. This reassessment of social norms has extended to the sphere of embracing physical intimacy and sexual intercourse in older age. Advances in treating sexual and erectile dysfunction have resulted in increased sexual activity among older adults, some of whom have demonstrated a lack of knowledge about sex and the prevalence of STIs, placing themselves at increased risk and suffering (Figueroa & Saenz, 2015; Silva Saggiorato & Schuelter-Trevisol, 2015). This sexual freedom among older women is partly

related to the comfort of their inability to become pregnant which confers freedom among many older women and men to practice unsafe sex.

Data on STIs other than HIV in older adults are scant, since most international studies fail to compile statistics on people over the age of 50 years. Even the WHO's most recent data (2016) on the incidence and prevalence of four curable STIs – syphilis, chlamydia trachomatis, Neisseria gonorrhoeae and trichomonas vaginalis – cover adults between 15 and 49 years of age. The limited data available indicates the need for more studies on the subject since STIs are on the rise among older people, and especially when cost-effective interventions exist to cure these conditions. The WHO's global health strategy to control STIs is to focus on the ones that are immediately curable (WHO, 2016).

Women's Vulnerability to STIs

Little research has been conducted on risky sexual behaviors in women veterans, despite indications that prior research on the subject in other populations (Aaron et al., 2013; Adebajo et al., 2002) has relevance for female Veterans. Researchers have elucidated factors such as age, ethnicity (Amoateng et al., 2014); knowledge/education, attitude (Archibald, 2008), self-efficacy, self-esteem (Agazio & Buckley, 2010; Kalichman et al., 2005, 2009; Lee et al., 2009), socioeconomic status (Jones et al., 2012), substance use and abuse (Paxton et al., 2004; Parks et al., 2009, 2011), interpersonal relationship status (abusive or supportive) (Agazio & Buckley, 2010; Njie-Carr, 2014; Pratto & Walker, 2001; Rosenthal & Levy, 2010; Popoola, 2009; Rosenthal, Levy & Earnshaw, 2012) that have relevance for female Veterans.

There are several biological, psychological, sociocultural and behavioral factors that contribute to the spread of STIs among women. First, a woman's anatomy makes her more vulnerable to STIs. Unlike the thick skin of the penis, a woman's vagina is lined with a delicate, thin mucous membrane that easily allows viruses and bacteria to pass through, resulting in a higher propensity to infections. Second, the warm environment of the vagina creates the perfect ambience for viruses and bacteria to flourish (American Sexual Health Association, 2016). Third,

unlike in men, many STIs produce symptoms that are mild in women, requiring no treatment until they become serious and much of the damage has already been done. Fourth, women suffer the most serious consequences from STIs, resulting in pelvic inflammatory disease, ectopic pregnancies, as well as other complications.

Infection with high-risk HPV can also cause serious consequences for women if undetected and untreated, resulting in changes in the cervix that can lead to cervical cancer; oral cancer if fellatio is practiced and anal cancer if sodomy is a sexual behavior. Fifth, STIs also cause damage to the unborn child resulting in low birth weight, brain damage, blindness, deafness, and even stillbirth. Sexually transmitted infections can be passed on to the unborn child, so the CDC (2015) has recommended prenatal testing for STIs, including chlamydia, gonorrhea, syphilis, HIV and HBV. Women with herpes, HPV and HIV can pass these infections on to the baby but there are steps they can take to greatly reduce this risk. Young people remain at highest risk for STIs with a lag time between infection and complications that may be six months or more (CDC, 2015).

All factors indicate, therefore that women veterans are at high risk for STDs and they suffer disproportionately from these conditions when infected because they are generally older when diagnosed. Despite the increased risk, little research has been conducted in this population to explore factors that predict high risk sex practices among female Veterans. Limited data is available on gender-specific risk factors among military female veterans even though factors associated with increased sexual partnerships and presence of an STI differ by gender (Stahlman, et al., 2014). Research findings have demonstrated that gender-specific interventions and strategies may be most effective in mitigating factors that influence risky sexual behaviors among military personnel (Stahlman, et al., 2014).

Risky Sexual Behaviors and STIs Among Women Veterans

Compared to women in the general population, military women are at higher risk for STIs. This is due to the fact that they tend to be younger, unmarried, and the majority belong to

ethnic minorities—demographic and individual factors that increase women's risk of acquiring STIs (CDC, 2014; Goyal et al., 2012; WHO, 2004). Human immunodeficiency virus rates additionally continue to rapidly increase in the United States and are a growing health problem among female military Veterans who are typically older at diagnosis, by contrast with those younger female Veterans with other STIs (VA, 2012).

Sexually transmitted infection rates far surpass rates in the general population among women veterans (Bolan, 2013; Goyal, et al., 2012), raising concerns about HIV and HPV infection rates as well. Human immunodeficiency virus infection in military women and veterans, in general, is a growing problem because the enrollment of women in the military is at 14.4% and is expected to rise to 17% by 2043 (VA, 2013). The DoD estimates that the rate of HIV will also rise as more women enter the military and become fully engaged in all aspects of military life, according to the DoD 2014 Sexual Assault Prevention and Response (SAPR). United States military veterans with HIV are also older with an average age of 53 years (VA, 2012). High-risk sexual encounters among military personnel have resulted in STI rates of up to seven times higher in the military than in the general population (Bolan, 2013; Goya et al., 2012).

Among active duty personnel, high-risk sexual behavior is rampant, especially among those who are unmarried, young and new to the military. Such high-risk behavior consists of inconsistent condom use, having multiple partners, having a new partner, or multiple/concurrent sex partners, or having sex while under the influence of drugs or alcohol. These behaviors place military personnel and their sexual partners at risk for STIs/HIV. Further analyses of the data also demonstrate that military recruits, young military personnel, and military personnel from ethnic minorities have STI rates above the national average.

Little is known about the sexual behavior in general and particularly the sexual risk-taking behaviors, of women veterans when compared to active duty service women. Lehavot, et al. (2014) conducted a study to explore sexual behaviors and STIs in a nationally representative sample of women veterans and non-veterans. They found that women veterans were more likely

to test positive for HSV-2, with almost 40% testing positive compared to 26% of non-veterans. This rate represented two times the rate among women who participated in the National Health and Nutrition Examination Survey (NHANES) in 2005-2008, which indicated that the seropositive rate among those women was almost 20% (p. 248). The NHANES study unfortunately did not include measures on sexual victimization history or military-related variables such as length of service, discharge status, combat or deployment history. According to Lehavot et al. (2014), data on depression was also largely unavailable for most of the years covered in the study and limited to symptoms of the previous two weeks. The high rate of STIs among women veterans is noteworthy because behavioral risk factors for HSV-2 include a history of other STIs, increasing number of sexual partners, and younger age of sexual activity initiation. Women veterans were also more likely than non-veterans to report a history of genital warts (which are caused by HPV infections) and in unadjusted analyses, had a greater prevalence of a history of diagnosed chlamydia. Detection of chlamydia may be higher among women veterans because military policy dictates that all women recruits be tested, and direct comparison of STI rates between veteran and non-veteran women who seek screening were unavailable and not included the study (Lehavot, et al., 2014).

Research evidence suggests that female Veterans suffer a greater burden of genital tract diseases such as cervical dysplasia than do men. A study evaluating the relationship between sexual assault and cervical dysplasia among women who were enrolled in VA care revealed that 16% had one or more abnormal Pap tests in the last five years and victims of lifetime sexual assault were more likely than women without that history to have abnormal tests, as well as HPV (Goyal, et al., 2012). Positive cervical cancer screening rates have also been higher among female Veterans with 90% of the 144 female Veterans screened in one study (Goyal et al., 2012) being positive.

There are several potential reasons why women veterans engage in riskier sexual behaviors, such as a younger age at first intercourse and/or a greater number of sexual partners

and have higher rates of STIs than non-veterans. Previous research suggests that women Veterans report more frequent childhood abuse and adult sexual assault than non-Veterans (Castro, et al., 2015; CDC, 2012; Cohen et al., 2012; Zinzow, et. al., 2007) and childhood abuse has also been associated with adult sexual risk behaviors in the general population (Killgore et. al, 2008). Combat exposure moreover has been associated with increased risk taking, which includes engaging in high-risk sexual behaviors (Cohen et al., 2012). Compared with non-veteran women, women Veterans have higher rates of mental health conditions, including depression and post-traumatic stress disorder (PTSD), which may play an intermediate role in explaining higher rates of certain sexual behaviors among them (Cohen, et al., 2012).

According to Sadler et al. (2003) high-risk sexual behaviors tend to decrease among military servicewomen once they leave military service. However, even though there may be a reduction in such behaviors, women veterans may still be at risk for STIs for several reasons. Sadler et al., conducted a study of 999 women veterans, of whom 28% reported that their sexual partners had concurrent partners; 17% reported having unintended sex after drinking alcohol or using drugs and it is unknown if these high-risk sexual practices translate into high rates of STIs among women veterans (Sadler et al., 2003).

An increasing number of women in the military have also been victims of sexual, physical, and other types of trauma, resulting in mental and physical dysfunction (Sadler et al., 2004, 2005, 2011; Turchik et al., 2012). Studies have indicated that many women who enroll in the military were exposed to sexual and other types of abuse prior to and during service, a major predisposing factor for HIV and other STIs (Cohen et al., 2012; Kimmerling et al., 2007, 2010; Turchik et al., 2012). Cohen et al. (2012) and Kimmerling et al. (2010) found that women veterans of the Iraq and Afghanistan wars who had at least one mental health diagnosis also had significantly higher prevalence for all major categories of reproductive diseases as well as for PTSD and depression. The researchers also found that the rates of STIs and risky sexual practices among female military personnel were significantly higher than those of the general population,

especially chlamydia, HSV-2, and gonorrhea when compared to the civilian population (Bolan, 2013, Stahlman, et al., 2019).

Turchik et. al (2012) reported that in a study conducted by the DoD (2005-2008) in which 1,004 women participated, those with one or more Lifetime Sexual Violence (LSV) exposures had significantly greater odds of cervical cytological abnormalities than their peers without LSV. Second, they were significantly more likely to report pelvic inflammatory disease, STDs, infertility, chronic pelvic pain, premenstrual syndrome, urinary incontinence, dysmenorrhea, and abnormal bleeding between periods. Women with LSV were also found to have significantly greater odds of cofactors associated with cervical cytological abnormalities (smoking, HPV, and an increased number of sexual partners). Veterans in the same study with LSV did not appear to use gynecological health care more frequently than non-assaulted peers but reported more reasons to seek this care (such as more bladder and vaginal infections). Women veterans with LSV demonstrated gynecologic health risk behaviors with greater frequency than their non-victimized peers. Turchik et al. (2012) also found that veterans with a history of military sexual trauma (MST) had a higher risk for STIs especially in the presence of a mental health diagnosis.

Factors Associated With High Risk Sexual Behaviors and STIs

Although little research has been conducted on risky sexual behaviors in female Veterans, prior research on the topic has elucidated factors that may have relevance for this population of vulnerable women. These factors can be grouped into the categories outlined below.

a. Age and Biological Factors

In line with predominant sociocultural attitudes, current research has focused mainly on sexual vulnerability and sexual dysfunction among older women, rather than on the positive aspects of their sexuality and healthy sexual experiences and has brought to light several serious problems. Older women are at increased risk of being victims of sexual violence due to socioeconomic dependency and, in some settings, because of gender-based inequities (WHO,

2013). Sexual harassment and violence often take place within the home, and women—especially widows—who become dependent on their families, are particularly vulnerable to these forms of abuse. Idso (2009) pointed out that many older women are less knowledgeable about sex than younger women and are not used to being single, hence older women are at increased vulnerability to STIs after a divorce, separation or widowhood.

Older women are not only at greater risk of exposure to STIs; they are also physiologically more vulnerable to these infections (Brooks et al., 2012). Post-menopausal changes to the lining of the vagina can reduce innate protective mechanisms against infection. Older women who already have a chronic or acute pelvic infection have an increased vulnerability to additional infectious diseases. Immune function also declines across the lifespan, increasing susceptibility to STIs and HIV infection. Some clinicians believe that older women with HIV infection require more aggressive treatment because they are diagnosed so late. Hence, their declining physical conditions, along with the aging process, hasten the effects of the disease (WHO, 2016; CDC, 2016).

b. Education/Knowledge

Lack of education about the prevention of sexually transmitted infections also accounts for the rise in such infections among the elderly worldwide. Several national surveys in the US have demonstrated that adults past the age of 40 years have the lowest rates of condom use (WHO, 2013). Older people are at increased risk of engaging in unsafe sexual practices and of being exposed to and exposing others to sexually transmitted infections (STIs) due to changing disease patterns in many places (Idso, 2009; Jaslow, 2012; Silva Saggiorato et al., 2015). Although avoiding pregnancy is not the main concern of individuals in this age group, educational efforts need to be directed toward making them aware of the risk of acquiring and transmitting STIs and of the preventive measures they can take.

Educational level also features in STI risk and disease. Among commercial sex

workers (CSWs), those with lower educational levels were disproportionately afflicted with STIs and participated in more high-risk behaviors (Solomon et al., 2008). A low educational level also may predispose CSWs to STIs and associated risk factors. Research has demonstrated mixed results where educational level is concerned. The relationship between education and sexual risk has been studied extensively in the adolescent population; yet, the research on young adults often presumes education is a protective factor against STI risk and disease. Annang et al. (2010) found that bivariate results from their study suggested that education was associated with decreased engagement in sexual risk behaviors and that the association between education and sexual behavior may vary by race. Education was unrelated to the number of sexual partners or getting into a sexual situation due to drinking or drugs among Black respondents, but was inversely associated with these risk factors among White respondents (Annang, et al., 2010).

These researchers concluded that educational status was not uniformly protective against STIs for Black and White women in their study but it appeared to protect respondents from an early debut into sexual relations, having sex with a person who shoots street drugs, having sex for money, and using condoms (p. 118). Other factors may play a more prominent role in determining STI risk particularly for young Black women. Consequently, social determinants such as education should be viewed as important factors associated with STI prevalence, but their differential impact on various racial and ethnic groups should also be considered when addressing the disproportionate rates of STIs in the U.S. (Annang et al., 2010, p. 125).

Education can also be extended to knowledge related to STDs. Though HIV remains the best known STI globally, studies have demonstrated that many people still lack knowledge about other STIs. Logistic regression analyses revealed that students aged 24 to 30 years old and faculty type were the significant predictors for the knowledge level in a study to assess the knowledge, attitudes, risky behaviors and preventive practices related to sexually-transmitted diseases (STDs) among health and non-health sciences university students as future healthcare providers in Malaysia (Folosayo et al., 2017). These researchers concluded that knowledge regarding STIs

other than HIV was still lacking and the risky behaviors practiced by the sexually active students in this study were alarming, indicating a need for STD education in schools and universities. The CDC states that "Learning more about STDs and the factors that sustain these epidemics is a first step in empowering affected communities to improve their health status and advance health equity," (CDC, 2016).

c. Socioeconomics and Behavioral Factors

According to *Healthy People 2020* (ODPHP, 2014), the spread of STIs is directly influenced by social, economic, and behavioral factors. Such factors have become serious obstacles to STI prevention and treatment due to their impact on social and sexual networks; access to, and provision of care; willingness to seek care and social norms regarding sex and sexuality. Among certain vulnerable populations who have historically experienced segregation and discrimination, such experiences exacerbate the influence of socioeconomic and behavioral factors due to their negative relationship with resources and access to care (Barnett & Vornovitsky, 2016). The evidence strongly suggests that sociocultural, political, economic, geographical individual characteristics and experiences greatly impact sexual behavior (ODPHP, 2014; WHO, 2016).

Research shows that there are higher rates of STDs among some racial or ethnic minority groups compared to Whites (Hogben & Leichliter, 2008; Laumann & Youm, 1999). It is important to understand that these higher rates are not caused by ethnicity or heritage but by social conditions that are more likely to affect minority groups. Factors such as poverty, large gaps between the rich and the poor, fewer jobs, power dynamics in relationships and low education levels can make it more difficult for people to stay sexually healthy, including increasing their risk of acquiring an STI (Hahm et al., 2012; Silas, 2013).

The CDC (2017) outlines several socioeconomic and behavioral factors that place people at risk for STIs. The first is an inability to provide basic needs. This usually indicates a lack of access to quality sexual health services and increases people's risk of acquiring an STI. Another

determinant is that many racial/ethnic minorities distrust the health care system. They fear discrimination and judgment from doctors and other health care providers, which creates negative feelings around getting tested and treated for STDs. Sexually active people may be more likely to get an STD in communities with higher STDs because they have greater odds of selecting a partner who is infected (CDC, 2016; Hogben & Leichliter, 2008; Lauman & Youm, 1999).

The research as summarized above has strongly indicated that high risk sexual behavior among women is related to age, biological factors, level of education, level of knowledge about STDs and how to prevent them and socioeconomic/behavioral factors.

Theoretical Framework and Rationale

This study was guided by the Social Dominance Theory (SDT), a general theory of societal group-based inequality. The SDT was developed to understand how group-based social hierarchy is structured and maintained (Pratto et al., 2006). This study was designed to examine how female Veterans' individual characteristics such as age, and biology; prior experiences such as history of violence; attitude; cognitive and behavioral factors such as education and STD knowledge; socioeconomics and cultural factors interact with social dominance orientation (SDO), the main variable in SDT, to predict high risk sex practices **(AIM #1)** in this Florida population. The researcher theorized that female Veterans' age, ethnicity, STD knowledge, rank, attitude, socioeconomic status, history of sexual or physical abuse or trauma (childhood or adult); history of substance use/abuse would influence choices to engage or not engage in risky sexual behaviors.

Social Dominance Theory focuses on power within hierarchical structures. Researchers who engage SDT attempt to synthesize psychological and sociological theories to explain group-based inequality and oppression based on age, gender and an arbitrarily-set system (Pratto & Espinoza, 2001; Pratto et al., 2006; Rosenthal & Levy, 2010). Social Dominance Theory is more general compared to other social and psychological theories but is mainly influenced by cultural theories of ideology, realistic group conflict theory, neoclassical elitism theory, social identity

theory, Marxism, feminist anthropological analyses of family and labor, and evolutionary psychology (Pratto et al., 2006).

Adherents of SDT argue that developed economies with surplus resources engage in a trimorphic and arbitrary structure of systems regulating age, gender and culture to maintain a favorable stability of these resources. According to Pratto et al. (2006) SDT analysts theorize that in such an age-system, adults have enormous power over children, while in the gender system, more power is ascribed to men, who ". . .have disproportionate social, political, and military power compared to women" (p. 273). It must also be noted that women in such developed economic societies with surplus resources tend to marry or have fiduciary relationships with older men (who have acquired more wealth and access to resources than their younger counterparts) and therefore are capable of exerting much power over them. The same can be said of people who engage in homosexual relationships in which age and male tendencies are usual characteristics common to the individual who wields more power in the relationship.

This theory also highlights the point that in such a system, groups are constructed on "arbitrary" cultural bases. Pratto et al. (2006) posit that these foundations are not linked to the human life cycle; rather, they are linked to things that are arbitrarily assigned either a negative or positive social value. Arbitrary-set groups may be defined by ". . . social distinctions meaningfully related to power, such as nationality, race, ethnicity, class, estate, descent, religion, or clan," (p. 273). Trimorphic structures among primates (chimpanzees, bonobos, gorillas and baboons) in the animal kingdom are based on age, sex, and coalitions (Kawanaka, 1982, 1989; Nadler, 1988; Rowell, 1974; Strier, 1994 in Pratto et al., 2006). The ongoing maintenance of this type of social organization tends to help primate societies transmit skills, knowledge, and ideas, while also transmitting roles and power across generations. SDT theorists argue that because social hierarchies are based on arbitrary categories such as race, religion, gender, class, and sexuality for the sake of stability, marginalized groups face institutional and interpersonal discrimination on a daily basis. These kinds of male-dominated institutions, such as the military,

tend to have a high social dominance orientation based on a value system that intrinsically discriminates against those who are different. This means that because the military is a highly structured and differentiated (closed) social institution women in the military would be expected to have a high SDO. Such women can, according to SDT would be expected to engage in high risk sexual behaviors based on their sense of perceived power or elitism.

Social Dominance Theory brings about an awareness of power, group-based inequalities, and social hierarchies (Rosenthal et al., 2012). The idea is that people who are more social dominance oriented tend to favor policies and ideologies that enhance hierarchies. It highlights intergroup value-driven dynamics, focusing on groups that are higher and lower in social hierarchies and how such roles can maintain or challenge social or relationship inequities. Social Dominance Theory is structured around the four bases of gendered power that favor control by men (Pratto & Walker, 2001). These include: 1) force, 2) resource control, 3) social obligations and 4) consensual ideologies which dictate that men are in control. A high SDO score would indicate agreement with the ideology that men should be more socially dominant and have more power than women in gender-based relationships. These factors (force, resource control, social obligations, and consensual ideologies), can be helpful in explaining female vulnerability to STI infection. Knowing that STI rates in the military far surpass those of the civilian population; HIV data in the military reflects those of the general US population and that more than 80% of HIV-infected women were infected through high risk heterosexual contact (CDC, 2013; Florida Department of Health Fact Sheet, 2013; KFF, 2014), it is logical to hypothesize that power imbalances in women veterans' heterosexual relationships may be contributing factors to their high risk taking. Statistical data indicates that a group's social power matters when it comes to HIV (Albarracin et al., 2004; Cooper et al., 2017; Wingwood & DiClemente, 2000) and this is supported by other studies (Jones, 2014). Even in same-sex relationships the partner who is perceived as more masculine is typically granted more power and control. This study explored

social dominance orientation and its impact on women veterans' sexual practices in the State of Florida **(AIM #2).**

Social dominance orientation is the main variable that undergirds SDT. It is the factor that determines the level of acceptance or rejection of the ideologies that promote or attenuate inequality among groups (Pratto et al., 1994). It is an ". . .individual difference construct about people's general support for social power inequities and hierarchy," (Rosenthal, et al., p. 3, 2012). Social dominance orientation is described as a general attitude towards intergroup relations as well as a personality trait predicting social and political attitudes. It is a widely used social psychological scale which has demonstrated that people high in SDO tend to believe in the separation of groups based on hierarchies (Sidanius & Pratto, 1999). Rosenthal and Levy (2010) outlined previous studies (Heaven 1999; Russell & Trigg, 2004 in Rosenthal & Levy, 2010) that demonstrated relationships between SDO and sexist beliefs, such as negative attitudes towards women's rights and tolerance of sexual harassment that emphasizes an inferior status of women. These revelations suggest that SDO is likely to be associated with highly divided gender norms and attitudes; and the military is an environment in which these traits are generally evident, worldwide (Sidanius & Pratto, 1999). The level of SDO indicates whether or not an individual prefers equal or hierarchical relationships along a superior-inferior continuum.

Social dominance is the extent to which members of an in-group dominate and be superior to any out-groups (Pratto et al., 1994, p. 724). Social dominance orientation as a research indicator leads investigators to postulate that the "acceptance of legitimizing myths has significant influence on the degree of inequality in societies…" (Pratto et al., 1994, p. 741). This theory can be applied to sexual relations, evident today in the #MeToo Movement, which began in the United States and since has spread throughout the world, as women speak up about sexual abuse by men who wielded tremendous power over them. These abuses have persisted despite progress made in women's rights resulting from this global movement of awareness. This is a reminder that gender discrimination in, for example, the US judicial system has seemed not only

normal but entrenched (Rosen, 2018). Those who are lower on the SDO scale will tend to favor more policies and ideologies that restrict or attenuate hierarchies, resulting in either a less divided or more egalitarian social system. Social dominance orientation also influences roles chosen by individuals in society as demonstrated by medical students' specialty choices which were found to be based on the level of prestige associated with the chosen specialty (Lepiece et al., 2016). The study demonstrated that individuals high on SDO will choose roles that enhance inequities while those lower on SDO will choose roles that attenuate inequities. Simply stated, individuals who have low SDO scores tend to favor equality while those who score high tend to favor differentiation and separation which can result in abuse of people who are deemed "less than," vulnerable, or on the fringes of society.

This researcher has theorized that the level of SDO, in combination with the four bases of gendered power among female Veterans, would influence and or predict their sexual behavior in keeping with SDT. Rosenthal and Levy (2010) and Rosenthal et al. (2012) demonstrated in their studies that by using SDT to guide research investigations, investigators into the phenomenon may help to clarify women's risk for HIV and, by extension, STIs; yet, despite the strength of such demonstration no study has explored the relationship, if any, between SDO and female Veterans' sexual practices.

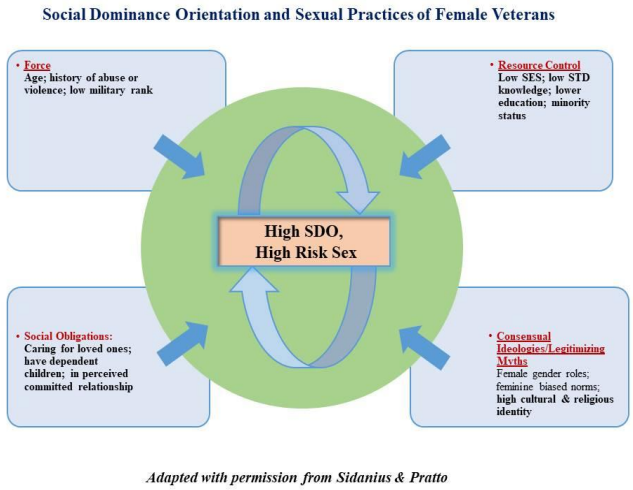
Social dominance orientation has been used to explain medical students' specialty choices, but not in research on the nursing field in relation to sexual behavior. Lepiece et al. (2016) conducted a study in which researchers examined the link between medical students' characteristics such as gender, age, and their career intentions. They also examined the levels of medical students' SDO at different stages of the curriculum. Study results indicated that SDO scores were significantly associated with technique-oriented career intentions (OR 1.56; 95 % CI [1.18, 2.06]; $p = 0.001$). Researchers also found that the effect was independent of gender and that medical students' SDO scores were significantly higher in later stages of the medical curriculum when they specialized ($F = 6.79$; $p = 0.001$).

They concluded that SDO was a significant predictor of medical students' career intentions as SDO scores were higher among them during the clinical phase of their academic program. Lepiece et al. (2016) concluded that medical students' socialization ". . . involving the internalization of implicit and explicit norms, particularly in hospital settings, is likely to underpin our findings," (p. 79). These researchers reported that their findings and illuminations were consistent with precepts of SDT in the literature relative to specialty prestige and the influence of medical school on career choice, thereby bolstering the argument that SDT was appropriate to guide the current study.

This study investigator has identified the military as the organization, and women veterans as the population to be explored in relation to SDT and the four foundations of gendered power – force, resource control, social obligations and legitimizing ideologies. The diagram of this researcher's adaptation of the original framework in relation to the main variable, SDO is presented as Figure 1 below.

Figure 1.

Social Dominance Orientation and Sexual Practices of Female Veterans



Social Dominance Theory (SDT) and the Four Bases of Gendered Power

1. Force

Force contributes to the maintenance of a power hierarchy between men and women, according to SDT. Force includes any kind of mental or physical abuse, including but not limited to rape, assault, and any other form of violence against women that undermines women's power, directly or indirectly indirect (Rosenthal & Levy, 2010; Sidanius et al., 1995). Evidence has accumulated based on several studies to demonstrate women's increased risk of HIV and other STIs from male partners, including childhood abuse, sexual assault, and relationship abuse (Rosenthal & Levy, 2010). There is documented evidence, for instance, that women who experienced childhood sexual abuse often engage in sexually risky behaviors that expose them to sexually transmitted diseases, including HIV infection (Hall, 2008; Lehavot, et al., 2014). Hall reviewed several studies and offered what she termed a "New View" in her article related to childhood sexual abuse and adult sexual problems. She posited that childhood sexual abuse results in sexual dissatisfaction and that:

> The "New View" adds several important and hitherto neglected paths: anxiety about being "normal" or living up to perceived cultural standards, power imbalance in the sexual relationship, stress (because of the consequences of low socioeconomic status), and limited access to both quality health care and sexual information. (p. 546)

Hall also discussed how research has demonstrated that more physically invasive abuse involving oral or vaginal penetration in childhood resulted in negative emotional/physical health and sexual outcomes in adulthood (Bartoi & Kinder, 1998; Colmon & Wisdom, 2004; Davis et al., 2001; Najman et al., 2005). The #MeToo Movement victims are examples of how sexual abuse suppressed in adulthood can also have negative consequences. Childhood sexual abuse has also been found to be associated with a risk of sexual dysfunction, poor quality of life, and dissociation among women with this tragic history (Aaron et al., 2013; Carreiro et al., 2016; Perrino et al., 2006). The issue of violence among military personnel, including MST, cannot be minimized and can be seen as rooted in social dominance.

People who identify as pansexual (i.e. lesbian, gay, transgender, queer, gender neutral bisexual or fluid gender frequently face discrimination and violence (Stringer, 2013). Heinz and Melendez (2006) conducted a study to explore intimate partner violence and HIV/STD risk among lesbian, gay, bisexual, and transgender individuals. Though the sample was small (n = 58), a large percentage of participants reported being forced by their partners to have sex (41%). Many stated that they felt unsafe to ask their abusive partners to use safer sex protection or that they feared their partners' response to safer sex (28%). Many participants in the study reported having experienced sexual (19%), physical (21%), and/or verbal abuse (32%) as a direct consequence of asking their partners to use safer sex protection.

Bonacquisti and Geller (2013) conducted a cross-sectional quantitative study among 90 women in Philadelphia to examine intentions to engage in condom use and potential partner-related barriers to condom use, including intimate partner violence (IPV), low levels of sexual relationship power and perceptions of monogamy (partner-related barriers), among women at risk for HIV. The foundation for the study was the knowledge that women in the United States accounted for approximately one in four new HIV infections. The researchers noted that despite the effectiveness of consistent condom use, women often confronted biological, cultural and psychosocial barriers that limited their ability to engage in safe sex. Results from the study demonstrated that 58% of the participants (n = 52) indicated a difference between their preference and intentions to use condoms versus their actual use. Sixty-two percent (n = 32) reported using condoms less frequently than they would like. Significantly lower differences in condom use emerged for women with low versus high sexual relationship power, and women who reported being in a monogamous relationship versus those who did not.

A finding of particular significance was that the majority of these relationships were with high-risk partners, further increasing women's already elevated risk of acquiring HIV. Overall study findings suggested that condom use and by extension safe sex, is a multifaceted issue, particularly in sexual relationships involving power differentials and perceived monogamy.

Condom use and safe sex can be complicated by women's own preferences, sexual relationship power differentials and by perceived exclusivity of the relationship with their sexual partners. Specific recommendations were offered for the provision of effective clinical care for women with HIV who also have a history of childhood sexual abuse (CSA) to help HIV care providers better recognize and appreciate the distinct needs of this patient population. Women of diverse racial and/or ethnic backgrounds who were HIV-infected were found to have been more likely to have experienced CSA than those who were HIV-negative (Paxton et al., 2004).

The issue of childhood sexual assault and its link to sexually risky behaviors is not unique to the United States. A study conducted among Brazilian heterosexual women aged 18 to 49 years, who were attending a family planning clinic at the University of Campinas, and who engaged in sexual intercourse in the four weeks prior to the study found that the prevalence of dysfunction identified by the Female Sexual Function Index (FSFI) was higher among participants with a history of sexual abuse ($p < 0.001$); and participants with a history of sexual abuse had significantly lower scores across all quality of life domains (Carreiro et al., 2016; Willie et al., 2017). According to the WHO (2016), the first sexual experience for many of these women was reported as forced with enormous social and economic consequences. The WHO reports that 17% of women in rural Tanzania, 24% in rural Peru, and 30% in rural Bangladesh reported that their first sexual experience had been forced. Women reported having suffered isolation, inability to work, loss of wages, lack of participation in regular activities and limited ability to care for themselves and their children as a result of the impact of such sexual assaults. Research in the United States and other parts of the world subsequently suggest that childhood abuse, sexual assault, and abuse in relationships all predict high sexual risk behavior in women and those women who experience such violence have higher HIV rates (Rosenthal & Levy, 2010).

2. Resource Control

Resource control involves access to care, education, well-paying jobs, and institutional influence. These factors tend to favor men over women (American Psychological Association [APA], 2017; Rosenthal & Levy, 2010). Pratto et al. (1994) and Rosenthal et al. (2012), highlighted the relationships between women's STI risks and their economic dependence on male partners; and this was also seen in poverty, sex work, education and institutional influence. Women's economic dependence on male partners is directly correlated to resource control by which it becomes dangerous for women to negotiate condom use or discuss monogamy (Gutierrez et al., 2000; Rosenthal & Levy, 2010; Rosenthal et al, 2012; Webber, 2007; Wingwood & DiClemente, 1997; Wingwood & DiClemente, 2000); and, sex becomes a matter of survival, especially for low income women who are trapped in unequal relationships. This holds true internationally among poor and disadvantaged women who exchange sex for money when resources are scarce. Sex in such a climate becomes a monetary commodity, giving power to the men who have the means to pay and resulting in increased STI risk among women who do not have power within their line of work or relationships to make meaningful changes to lower their risk (Machel, 2001; Wood, 2007).

It must also be noted that men head most hierarchical institutions, giving rise to female subordination within social, governmental and business institutions. Women of diverse social and economic strata are not trained to use female condoms even though these condoms have demonstrated efficacy in many cultures across the globe. Many women still are not aware of their availability and lack access to them. This is rooted in the fact that most companies and pharmaceutical companies especially, are headed by men who generally dictate the type of condoms and contraceptives women use (Rosenthal & Levy, 2010). Education can help to mitigate the risk of STIs among disadvantaged women. Kalichman et al. (2005) found that higher education was a significant predictor of decreased sexual risk behaviors because education leads to increased knowledge, access to resources, and power within women's relationships (Gregson,

et al., 2005). Educated women are further empowered to challenge norms and facilitate improved socioeconomic conditions for themselves. It can also be argued that education does not necessarily herald a change in behavior, as some analysts assert that other factors are involved in behavior change, especially when it involves sexual behavior.

3. Social Obligations

Social obligations in SDT appertain to responsibilities women have to others, such as caring for partners, attending to the needs of ill, disabled or elderly relatives and children; because social norms historically have dictated that women have more obligations than men with regard to caring for others. It is believed that women are natural caregivers, capable of satisfying the needs and desires of others, and even though many of them work outside the home, many men have not stepped up to share household and relationship responsibilities (Rosenthal & Levy, 2010; Sidanius & Pratto, 1999). Research has also highlighted was in which women's commitments to their male partners in relationships have placed them at high risk for HIV and other STIs, a worldwide phenomenon especially when their male partners are significantly older (Rosenthal & Levy, 2010). Women therefore are less likely to use condoms if they perceive they are in committed relationships, despite knowledge among many that their partners are unfaithful, or are not monogamous, because of their socially prescribed and personally felt level of obligation their partners (Amaro & Raj, 2000). Such women are unable to successfully negotiate condom use even when they either know or suspect the infidelity of their partner (Kershaw et al., 2006).

Social obligations constitute an informal need to do something based on prescribed social expectations, etiquette, tradition or mores. It is deemed a social obligation for women to assume the responsibility to care for sick family members even though they have a regular job. These include responsibilities that participants may have in relationship to others such as partners, children, work and the environment in which they exist. Sometimes these perceived obligations cause women to elevate such responsibilities over their own care and safety. Failure to respond to

such obligations and demands can have negative consequences for the self or significant others. These responsibilities can also derail a person's ability to negotiate and engage in safe sex.

Marriage is another social institution in which social obligations place women at risk for STIs. There is a significant risk for STIs and HIV in marriages and age discordant relationships between older men and younger women in particular, as seen in the African countries of Cameroon, Kenya, Tanzania, Zambia (Clark et al., 2016); the Caribbean country of Jamaica (Figueroa, 2014) and in arranged marriages in India (Decker et al., 2009). Much of this is rooted in sociocultural and religious norms and beliefs which sometimes override education and logic. Women in these relationships are expected to meet the sexual desires of their husbands and be submissive.

4. Consensual Ideologies or Legitimizing Myths (LMs)

Consensual ideologies justify and sustain women's disadvantaged status in society and institutions. These ideologies include gender roles, norms, stereotypes, and any other beliefs or expectations about men and women that are generally agreed upon in a society or culture placing women in weaker positions in comparison to men (Rosenthal & Levy, 2010). Sexual behavior varies by culture but generally gender expectations assert that women are passive sexual receptors while men are the controlling aggressors. This is supported in research demonstrating that women in the United States equate sexuality with submissiveness (Sanchez et al., 2006). Kershaw, et al. (2006) also demonstrated that Haitian and Vietnamese women's social obligations decreased their ability to negotiate condom use but the opposite was seen in Hong Kong where women's gender issues were more egalitarian (Tang et al., 2001). Rosenthal et al. (2010) also noted that women remained faithful to their male partners despite male infidelity. Perrino et al. (2006) found that AAW did not require their partners to use condoms for fear of being accused of infidelity.

Another consensual ideology that places women at risk for STIs is that men are less likely to be sexually monogamous. This is generally accepted by society and justified by biological arguments that prevent women from questioning male infidelity (Rosenthal et al.,

2010). Other consensual ideologies are masculinity versus femininity, by which men have control over their female partners and demand unprotected sex; male enjoyment of sex is a priority over safety. This type of consensual ideology promotes acceptance of a number of male privilege behaviors, such as: 1) male promiscuity and even acceptance of violence in certain situations (Kalichman et al., 2005), 2) belief among heterosexual men that HIV is a gay disease (CDC, 2008), 3) benevolence (protection by men), 4) paternalism (being taken care of by men) and 5) parentalism, or having superior authority over or expecting deference from women (Rosenthal et al., 2010). All these ideologies, according to SDT, place women at risk for STIs by decreasing their control over implementing safe sexual practices. Research from as far back as 2005 (Koh et al.) concluded that women of all sexual persuasions were at increased risk for STDs, with the highest risk occurring among heterosexual women.

Sidanius and Pratto (1999) and Rosenthal and Levy (2010) conducted studies which highlight intersections of race and class in SDT. They posit that gendered power imbalances are exacerbated in communities where competition for men is particularly great due to an uneven gender ratio, especially in African-American communities where incarceration rates of Black men are highest making them less available to Black women (Rosenthal et al., 2010; Sidanius & Pratto, 1999). Violence against women in these communities tends to be accepted. Ambiguous or illegal immigration status also places many women at risk due to fear of being deported if they are found to be undocumented. Women with few economic resources, such as homeless women, feel they have little control over their own bodies and are frequently raped or sexually trafficked (Alvarez, 2016; Tucker et a., 2004).

Limitations of Social Dominance Theory

A search of the literature yielded very little critique of SDT. The most balanced critique found was proffered in an article by Tunçgenç (2010) who stated that, fundamentally, SDT is outstanding in attempting to explain phenomena by synthesizing interdisciplinary information from sociology, psychology, evolution, economics and politics. He even asserted that SDT can

be a good guide for researchers who aim to understand how societal relationships are maintained and reproduced once they have been constructed. The major criticism was that SDT fails to explain how certain systems are formed in the first place and what factors cause changes within these systems; however, this factor is not a focus of this study. Tunçgenç (2010) asserted that although Legitimizing Myths (LMs) and SDO direct analysts to attempt an explanation of how gradual changes in social systems take place, they are not sufficient, since they remain descriptive and do not reveal causal relationships.

Another criticism of SDT is that it is a fairly new theory and, as such, is still in the process of being developed (Redmond & Graehling, 2014). Social Dominance Theory has been refined and undergone several revisions since originally published and, in addition to the Theory's development, more research needs to be applied to the Theory to continually test and validate it. Another criticism is that although there is a body of scientific research related to SDO, it has not been widely used outside of the United States.

Summary

Social Dominance Theory has been deemed appropriate to guide this study in an effort to understand and explain the sexual behavior of female Veterans, as based on the arguments that have been presented and despite shortcomings in the Theory. Social dominance orientation impacts knowledge and behavior because it is an attitudinal trait. It is therefore hypothesized in this study that female Veterans' social dominance scores would impact knowledge and sexual behavior to indicate high risk sexual behavior among female Veterans. All the variables of interest in this study (i.e. age, race, ethnicity, gender/gender identity, immigrant status, nationality, history of violence, rank, and socioeconomic status - education, income, marital status, income and occupation) are covered under this Theory. These variables are generally minimized but are important because they impact human behavior and health outcomes (Major et al., 2013). The military is a highly structured environment in which many women have experienced force, lack of control over resources, and social obligations in the face of consensual

ideologies related to the military environment and their own sociocultural perspectives. All these factors intersect to place them at risk for STIs and possible transmission to others in society.

Social Dominance Theory is an amalgam of several social theories; therefore, it was deemed appropriate to guide the study because factors surrounding safer sexual behaviors are extremely complex. Social Dominance Theory can help to elucidate factors and give rise to interventions to prevent the transmission of STIs as women become more empowered and men begin to understand that their grip on power continues to place both themselves and women at risk for STIs.

Theoretical Propositions

Several theoretical propositions can be made regarding factors that predict high risk sex practices among female Veterans based on the propositions of SDT and the literature on STIs in women in general and women veterans in particular. The theoretical propositions identified for this study include the following expectations of high SDO:

1. Women veterans with a history of violence or abuse including childhood abuse, sexual assault, and relationship abuse are less likely to engage in safer sex practices.

2. Female Veterans who perceive themselves as economically dependent on their partners will be less likely to engage in safer sex behaviors than those who perceive they are <u>not</u> economically dependent.

3. Female Veterans who perceive they have more social obligations, such as those who are married or in committed relationships and who have caregiver roles, will be less likely to engage in safer sex behaviors.

4. Female Veterans who are in age discordant relationships (that is, their partners are five or more years older) will be less likely to practice safe sex behaviors.

5. Female Veterans with low military rank will be less likely to practice safer sex behaviors.

6. Female Veterans who are younger in age, are of minority racial/ethnic status, less educated, and who are immigrants will be less likely to engage in safer sex behaviors.

7. Female Veterans who identify themselves as more religious will be less likely to engage in safer sex practices.

Specific Aims

A search of the literature utilizing the terms *female or women Veterans*, *factors that predict*, or *factors predicting sexual behavior*, from 1996 to 2019, yielded zero studies or articles. A new search substituting *safer sex practices* with *sexually transmitted infections* yielded 43 articles. Of this number, three articles were relevant to the topic but none were studies about the phenomenon of interest. Given the propositions of the SDT specified above, gaps in the literature related to female Veterans and sex practices, and given the gaps in knowledge related to factors that predict safer sex practices among female Veterans in relation to social dominance orientation, the specific aims of this study are to:

1. Examine how female Veterans' individual and demographic characteristics (age, racial/ethnic background, military experience, and prior experience with abuse); cognitive and behavioral factors (such as safer sex behaviors and STD knowledge); socioeconomic factors and SDO are associated with each other.

2. Explore the degree to which female Veterans' individual and demographic characteristics (age, racial/ethnic background, military experience, and prior experience with abuse) and socioeconomic factors predict safer sex behaviors, STD knowledge and SDO.

Research Hypotheses and Questions

Aim 1 Hypotheses

1. Female Veterans who report a history of IPV or abuse will have higher SDO scores, and lower SSBQ scores than those who do not report a history of intimate partner violence or abuse.

2. There will be a relationship between a) socioeconomic factors (education, income, minority/racial ethnic status, rank, economic dependence, marital status, immigration status) and b) female Veterans' religious commitment ratings, and social obligations/responsibilities with SSBQ scores, and STD Knowledge scores.

3. There will be a relationship between SDO scores with SSBQ scores, STD Knowledge scores, age at sexual debut and female Veterans' current age.

4. There will be a relationship between the following variables and SSBQ scores: married or in a committed relationship; perceived economic dependence; perceived religious commitment.

5. There will be a positive relationship between female Veterans' years of active duty and rank at the time of discharge from service with SSBQ scores and STD Knowledge scores; and, a negative relationship with SDO scores.

Aim 2 Research Questions

1. To what extent do female Veterans' individual and demographic characteristics (such as age, number of years of age discordance in the relationship, age discordant relationship, racial/ethnic background, military rank, history of IPV or abuse, perceived religious commitment, and social obligations/responsibilities) predict safer sex behaviors, STD knowledge and SDO?

2. To what extent do female Veterans' socioeconomic factors (education, income, minority/racial ethnic status, rank, economic dependence, marital status, immigration status) predict safer sex behaviors, STD knowledge and SDO?

Definition and Operationalization of Terms

According to Waltz, Strickland and Lentz (2017), "operationalization is the process of delineating how a concept will be measured," (p. 35), hence making the concept understandable in observable ways. The following outlines the conceptual and operational definitions of study terms and concepts, and how they are measured or operationalized in this study. The independent and dependent variables in this study are defined and operationalized as follows:

Age. Age is the participants' self-reported number of years lived since birth. This information was gathered from one question on the *Demographic Questionnaire.*

Age discordant relationship. This is a relationship in which the participant's partner's age is five or more years older than the female Veteran's age. This information was elicited from one question on the *Demographic Questionnaire*.

Culture. Culture is the sum of the process of how one's belief, morals, customs, knowledge and behaviors that have been learned or acquired by a member of a particular social group. Culture can be is influenced by nationality, religion, education, income, race, and occupation, for instance. Participants in this study were asked on the *Demographic Questionnaire* to state how they culturally identified themselves.

Economic dependence. This is the participants' perceptions of needing their sexual partner to meet their daily living needs, such as food, shelter and clothing and any other basic requirements. This was measured based on participants' ratings of their level of need from *not at all* to *a great deal* with a question on the *Demographic Questionnaire*.

Education. Education in this study indicated the highest degree reported to have been obtained. This information was elicited from one question on the *Demographic Questionnaire*. If the participant had been home-schooled, that was considered formal education.

Ethnic/racial minority. An ethnic/racial minority is a relatively small part of a population or social group that has a common national or cultural group tradition (Merriam-Webster Online Dictionary, date retrieved December 2017). This includes belonging to minority groups that do not have a European heritage in the US. These groups traditionally have constituted a numerical minority when compared to the larger, more dominant Euro-American population, and include persons of African descent, Hispanic heritage of any race, Asian, or Other such as Pacific Islanders, Indigenous American or Alaskan Native, Native Hawaiian. A question on the *Demographic Questionnaire* elicited participants' ethnic/racial minority identities. Participants were able to report multiple races, if they so choose. This definition is in keeping with the United

States Census Bureau (2018) as mandated by the Office of Management and Budget (OMB, 2018) and both are considered separate concepts. Ethnicity in the US refers to whether or not a person identifies as Hispanic or Hispanix/Latinx.

Women/female veteran: According to US Public Law, U.S. Code 38, § 101, "the term "veteran" means a person who served in the active military, naval, or air service, and who was discharged or released therefrom under conditions other than dishonorable." This includes those who participated or did not participate in war or were in the reserves. Women veterans are those who identify themselves on the *Demographic Questionnaire* as having served honorably in any branch of the U. S. military or the reserves. This information was measured based on responses on the *Demographic Questionnaire*.

History of intimate partner violence/abuse. A woman's self-report of unsolicited, and/or unwelcomed actions against her that are sexual, physical, and/or psychological/emotional, which ended up hurting her is defined as IPV/abuse. These actions may include rape, assault or any other act that the woman deems as unwelcomed or unsolicited, including adult or childhood sexual abuse. This concept was measured using the *Abuse Assessment Screen* (McWhinney-Delaney, 2006). Intimate partner violence can take a number of forms including forced physical, verbal, emotional, economic and sexual abuse (Njie-Carr, 2014; Tharp, et al., 2014; Terrazas & McWhirter, 2015; Tharp et al., 2016; Tucker et al., 2004).

Immigrant status. The self-reported US citizenship status of the participants as noted on the *Demographic Questionnaire*.

Income. Income is defined in this study as the reported amount of money earned from working or investment activities. This includes money or stipends received from the government, entity or person on a regular basis for living costs. This was gathered from one question on the *Demographic Questionnaire* in ranges to facilitate response based on the categories outlined by the US Census Bureau for household income 2016.

Level of relationship commitment. This is defined as participants' self-reported level of relationship commitment as noted by a range on the *Demographic Questionnaire* from *not at all committed* to *very committed*.

Marital status. This is constituted as the participants' descriptions of the type of their current legal or common law relationship status. This information was measured based on responses on the *Demographic Questionnaire.*

Military rank. This includes participants' self-reported highest rank at the time of discharge from the military. This was elicited from responses on the *Demographic Questionnaire*.

Number of years in the United States. This indicated through participants' self-reported number of years residing in the United States on the *Demographic Questionnaire.*

Religious commitment. This is derived from participants' self-report of religious engagement as measured on the on the *Demographic Questionnaire* on a range from *not at all religious* to *very religious*.

Safer sex behaviors: Safer sex behaviors or practices are sexually related behaviors in which individuals knowingly or unknowingly engage that prevent the acquisition and/or transmission of STDs. These practices prevent the exchange of semen, blood, vaginal secretions, saliva and other body fluids to others during sexual activity. These behaviors were measured using the *Safe Sex Behavior Questionnaire* (DiIorio, et al., 1992).

Sexually transmitted disease knowledge. Sexually transmitted disease knowledge in this study relates to being aware of, internalizing and understanding facts about what constitutes STDs/STIs. This includes behaviors that place people at risk for these infections as well as those behaviors that help to prevent them. This concept was measured by the *STD Knowledge Scale* (Jaworski & Carey, 2007).

Social dominance orientation. Social dominance orientation reflects whether or not one generally prefers relations to be equal versus hierarchical. People who have a higher degree of SDO tend to favor hierarchy-enhancing ideologies and policies, whereas those who with a lower

SDO tend to favor hierarchy-attenuating policies and ideologies (equality). Social dominance orientation was measured using the *Social Dominance Orientation Scale* (Pratto et al., 1994); therefore individuals who scored high on this scale endorse more hierarchy-enhancing ideology and policies and those who score lower will tend to favor more egalitarian relationships.

Social obligations. Social obligations represent participants' self-reported perceived responsibilities in relation to caring for others such as partners, children, parents, friends or other relatives in conjunction with their own responsibilities and obligations in that environment. Social obligations are frequently based on prescribed social expectations, etiquette, tradition and mores. Women assume responsibility to care for (temporarily or long-term) sick family members as well as their own is deemed a social obligation which is generally expected of them. Sometimes these responsibilities cause women to elevate such responsibilities over their own self-care and safety. Failure to respond to such obligations and demands can have negative consequences for the self or significant others. These responsibilities can also derail a person's ability to engage in safe sex. Participants in this study were asked to rate their perceived social obligations and/or responsibilities in each category noted above on a continuum from *none (0*), no perceived social obligation to *10* (high degree of perceived social obligation) on the *Demographic Questionnaire*. Content and criterion validity were determined by a group of women for testing.

Significance of the Study

Studies generate knowledge that is socially beneficial in many ways. This is study is no different. The knowledge garnered from this inquiry has significance for theory, practice, policy development and healthcare. The following paragraphs outline how the findings from this study will significantly impact these four arenas and benefit society.

Significance for Theory

This study has tested key propositions of the SDT framework in relation to female military Veterans. The study is significant because it is the first to explore female Veterans' sexual behaviors utilizing the SDT framework to attempt to explain the phenomenon of interest

among female Veterans in the State of Florida. This study will also lay the foundation for a theoretical understanding of the predictors of safe sex behaviors among female Veterans in the State of Florida and be among very few studies that have assessed SDT and its application to women's safe sex behaviors and STD knowledge. Testing this Theory by way of this study can later lead to instrument developments solely focused on women veterans in other locations.

Significance for Practice

This study has significant practice implications because even the VA recognizes that it has to do much more when it comes to women's health. The VA (2011) concluded that "Women's military experiences and responses to their military experiences are often distinct from those of men, and these differences can affect both their health status and their health care needs as active duty personnel and as Veterans," (p. 6) after conducting a systematic review of the literature on female Veterans' health needs. Findings from this study may potentially assist in the development of gender-specific interventions for female Veterans.

The findings of this study will likely also contribute to the understanding of STD risk behaviors and begin a trajectory of research to address female Veterans' specific sexual behavior needs in terms of individualized care; treatment responses and identification of strategies to mitigate unsafe sexual behaviors and improve safe sex behavior among them. This study has the potential to also lay the foundation for comparative research between men and women veterans, as well as with civilian groups and provide empirical data to shape specific practice changes, health policies and interventions to meet their needs. The State of Florida is a rich reservoir of cultural and ethnic diversity, laying the path for more population-specific research within the veteran population over the next five to seven years.

The population of female Veterans is rising and is expected to reach 15% by 2036 in terms of practice (Goyal et al., 2012). Compared to the general population of US women, women veterans are at higher risk for STIs as demonstrated by findings from the few studies conducted among active duty and female Veterans who tend to be younger, unmarried and belong to racial

ethnic minorities (American College of Obstetricians and Gynecologists [ACOG], 2012; Golub & Bennett, 2014; Sadler et al., 2011; Murdoch & Nichol, 1995; Williams & Bernstein, 2011). Each of these demographic factors is associated with increased risk of STIs among women, in general (CDC, 2013; WHO, 2004). This study further elucidates these factors among female military veterans. Studies of active duty women, especially among new recruits, reveal a high prevalence of risky sexual behaviors that include inconsistent or no condom use and/or binge drinking and multiple or concurrent sex partners (Bolan, 2013; Foreman, 2006; Goyal, et al., 2012; Combellick et al., 2019). Yano and Frayne (2011) lamented that they conducted a review of the literature on the health and health care of women veterans and active duty women in the military and discovered that up to that time, the majority of the eighteen peer-reviewed studies analyzed were focused on mental health with emphasis on PTSD and the psychological sequelae of MST. They concluded that there was a need to "better understand the characteristics and experiences of women Veterans," (p. 565). This current study unfolds some of the characteristics of female Veterans that inform high risk sex practices and provide a depth of understanding that can result in more practical interventions to increase safe sex behaviors in this population. There are also no other current studies that have explored whether or not risky behaviors that women veterans engaged in while in the service have followed them into civilian life when they transition to veteran status, hence the need for a study such as this one.

Significance for Policy and Healthcare

There are also implications in this study for policy and healthcare development, since no study has focused exclusively on women veterans and the factors that predict high risk sex practices among them. Specific recommendations from this study have the potential to assist the VA and other healthcare organizations in guiding and providing appropriate, relevant, gender-specific sexual healthcare for women veterans. This is significant especially because STI rates are two and three times higher among women veterans and seven times higher among active duty

women when compared to those rates of women in the general population of the United States (Goyal et al., 2012; Lehavot, et al., 2014; CDC, 2013; Florida Health Fact Sheet, 2013).

There is also a business/financial rationale for focusing on STD reduction and/or prevention among veterans. The VA spends millions of dollars yearly on healthcare, and veterans who qualify receive at least $100 monthly for disabilities related to STIs, specifically HIV (Code 6351), syphilis and all other infections caused by treponemal bacteria such as yaws, bejel, and pinta (Hoffman, 2007). Others include syphilitic heart disease (Code 7004), cerebrospinal syphilis (Code 8013); meningovascular syphilis (Code 8014); Tabes dorsalis (Code 8015); and dementia due to central nervous system syphilis (Code 9301). Thousands of veterans since 1972 have received millions of dollars in payments for conditions related to illicit sexual activity and twenty STIs, in particular, according to Hoffman after a review of 60,000 cases of the VA's benefits administration records. The VA admitted that they are behind the curve when it comes to women's health issues and so research focused on women's issues to advance VA care is significant. This study offers a window of understanding the factors that drive sexual behavior, along with the attitudes and knowledge related to the same that can be translated into interventions resulting in safe sex behaviors and decrease spending for the VA, the US DoD and federal tax payers, in general.

This study is significant from a policy perspective because government officials have argued, and have now agreed, that research related to women veterans' health at all stages, has been ignored for far too long (Department of Veterans Affairs Report, 2014). Even though there are several studies exploring military sexual trauma and its sequelae, no study has explored the predictive factors of women veterans' safe sex behaviors utilizing the SDT, and SDO in particular.

Summary

Sexually transmitted infection rates of two and three times that of the general population is a call to action for any group, especially among women veterans who are a vulnerable and

under-studied group, yet the literature remains scant or nonexistent. This requires examination of several factors including STD knowledge and attitudes, as well as women veterans' sexual practices. Assessment of STD knowledge, attitudes and sexual behavior can help identify populations at greatest risk so that specific STD prevention interventions can be tailored to their needs (CDC, 2016; Office of Disease Prevention and Health Promotion, 2014; Ugarte et al., 2013). Education can provide or enhance protective factors to avoid risks, build self-efficacy (Bandura, 1997), and promote skills to thrive in sexual situations (CDC, 2015; Jaworski & Carey, 2007).

No study yet has focused on elucidating factors that predict high risk sex practices in relation to women veterans. The literature review which is further detailed in Chapter Two was found to be bereft of any theory-guided study exploring the relationships among women veterans' individual characteristics, social dominance orientation, and high risk sex behaviors, as well as those factors that best predict safer sex practices in this population. Such studies could help to explain the high rates of STIs among female Veterans, support the 2015 National HIV/AIDS Strategy (NHAS) to increase knowledge and understand behaviors that reduce the transmission of HIV and other STIs among women veterans. No study has explored if military trauma shapes sexual behavior as female Veterans reintegrate into civilian life. No study has explored whether the perceived gender-imbalanced military culture impacts the sexual behavior and attitudes of female Veterans, and sex practices. Therefore, this study attempted to explore these factors among female Veterans living in Florida and embarked on a trajectory of research focused on this under-studied, vulnerable population.

CHAPTER II

LITERATURE REVIEW

High Risk Sexual Behavior Among Women Veterans

Compared to women in the general population, women in the military are at a higher risk for sexually transmitted infections (STIs) (Bolan, 2013; Braun et al., 2016; Combellick, et al., 2019; Goyal, Mattocks & Sadler, 2012; Stahlman, et al., 2019; Turchik et al., 2012). Even among female student veterans, researchers found that they were less likely than their male counterparts to report having an STI (Albright et al., 2019). Sexually transmitted infection rates have also risen annually in the military and in the general population (Braun, et al., 2016). Among military women, the rates are seven times that of the general population and rates were higher among older deployed military women than among their younger peers. Even though sexual activity is prohibited in deployed environments due to exposure to hazardous materials that may cause birth defects, unintended pregnancies occurred in ten percent of the women. According to the American Congress for Obstetricians and Gynecologists (ACOG, 2012), women presenting for care in the Veterans Health Administration (VHA) exhibited a trimodal age distribution pattern of mid-twenties, mid-forties and mid-fifties and most were in their childbearing years.

MacDonald (2013) reported that, "Active-duty Sailors and Marines acquire preventable sexually transmitted infections (STIs) and experience high rates of unintended pregnancy." (p. 82). Every year between 1999 and 2011 85 to 100 Sailors and Marines were diagnosed with HIV with a total of 5,800 since 1985. Seventy-two percent of pregnancies among single personnel in the Marines alone were unintended during 2008. Among active duty Sailors, in 2008 only 50% of them used a condom during their last sexual encounter (MacDonald, 2013). Only 36% of pregnancies among surveyed enlisted women Sailors were intended, with the highest rates observed among married women aged 21–25 years. High risk sexual activity is costly to the military and US taxpayers when unplanned time-off, health care costs, and personnel replacements are taken into consideration.

There is a "high prevalence of unsafe sexual practices, including sporadic condom use, multiple sexual partners, and binge drinking, which compromise contraceptive use" (Goyal et al., 2012, p. 1155), among active duty personnel, especially new recruits yet there is little data on these women as they transition out of the military to veteran status. When compared with active duty servicewomen, little is known about the sexual risk-taking behaviors among women veterans. It appears that even though high risk sexual behaviors (multiple concurrent sexual partners; unintended sex after substance use; alcohol use and abuse; inconsistent or no condom use and unprotected anal, vaginal and/or oral sex) tend to decrease after women leave military service, they may still be at risk because, as previously discussed, many women veterans with STIs, tend to seek care much later, including those with HIV.

Sadler, et al. (2011) reported that out of 999 female Veterans studied, 28% reported that their sexual partners had other concurrent partners, and 17% reported having unintended sex after alcohol consumption or use of illicit drugs. So despite knowledge of infidelity, and other high risk sexual behaviors, female Veterans engaged in unprotected sex with their partners. These behaviors lead one to question female Veterans' knowledge about STIs, their mode of transmission, and how this knowledge or lack thereof impacts their attitude towards, as well as other underlying factors associated with, risky sexual behavior.

Ethnicity and STIs

Several studies over the years have provided insight into the complex phenomenon of sexual behavior and many have shown that ethnicity is an integral factor in sexual risk behavior. Edelman et al. (2017) conducted a study among 4,911 heterosexually active women. The study investigators aimed to identify psychosocial and socio-demographic factors associated with reporting key sexual risk behaviors among women in the British general population. The study was Britain's *Third National Survey of Sexual Attitudes and Lifestyles* (NSSAL-3) and though it was conducted in Britain, the results have implications for US women. The study results indicated that weekly binge drinking (six or more units or drinks on one occasion), and first sex before age

16 were each positively associated with all three sexual behaviors 1). two or more partners in the last year 2). non-use of condoms with two or more partners in the last year and 3). non-use of condoms at first sex with most recent sexual partner) after adjustment. Current relationship status, reporting ever having used drugs, younger age and living in rented accommodation were also associated with two or more partners and two or more partners without condoms after adjustment (Edelman, et al., 2017).

The researchers also found that being a smoker at the time of the study and being older in age and respondent's ethnicity were associated with first sex no condom use, after adjustment for all other variables. Smoking status at the time of the study; treatment for depression in the year before the study and living at home with both parents until the age of 14 were each associated with one or more of these behaviors. This study demonstrated that socioeconomic factors are associated with sexual risk behaviors.

Archibald (2007) conducted a study among Caribbean African American adolescents to explore their knowledge and attitudes towards risky sexual behaviors and HIV/AIDS. This was a qualitative study that utilized focus groups to elucidate the phenomenon of interest. The 22 young boys and girls who participated in the study were also closely linked to their church, which was their main support group. Results indicated that most adolescents abstained from sex due to fear of parental reaction and the impact of church teachings. Some participants also demonstrated accurate knowledge of HIV/AIDS, and all expressed reluctance to share personal space and items with an HIV-infected friend. Though this study was related to adolescents with Black Caribbean ethnic backgrounds, it has implications for female Veterans from ethnic minorities or other cultural groups, especially knowing that the majority of Veterans with STIs are from ethnic minorities, some of whom have their roots in the Caribbean.

Amoateng et al. (2014) conducted a study focused on minorities and examined individual and contextual factors that impact sexual risk-taking behaviors among Black African adolescents in a poor community of the North West Province of South Africa. Individual and contextual

variables explored were gender, age, peer influence, religiosity, school grade, parental value of children, parent-child communication and the use of alcohol, tobacco and marijuana. Study findings suggested that all these factors are influential in shaping the sexual behavior of adolescents and young adults; some negatively such as alcohol, drugs, higher grade in school, having a boyfriend, living in the city, low parental value and lack of communication. Adolescents who had open communication with their parents; felt they were valued and steeped in religion were less likely to report recent sexual activity and had less lifetime sexual partners. This study also has implications for female Veterans who are young with similar experiences, and who may have moderate to high religious commitment, hence the focus of this study on some of these variables.

Hoffman et al. (2008) also examined HIV and risk of STI behaviors and beliefs among 587 Black and West Indian immigrants and US-born Blacks in the State of New York. The study explored sexual and drug-use risk behaviors, and participants' beliefs related to using condoms and informing partners of STIs in order to identify differences in risk. This was a mixed gender cohort, 18 years or older who were recruited from an STI clinic in Brooklyn. Seventy-six of the participants had a high school diploma or less, income below $18,000 annually, and were positive for STIs such as chlamydia trachomatis and Neisseria gonorhoeae. Results highlighted that Black West Indian men were less likely than US-born Black men to report non-regular partners, and US-born Black women were more likely than Black West Indian women to be confident in convincing their regular partners to use condoms and discuss STI screening. The researchers concluded that based on these findings, gender-sensitive interventions were warranted for Black West Indian immigrants, especially women who would be less likely to convince their partners to wear condoms.

Mishra et al. (2008) also explored sexual risk behavior, knowledge, and attitude related to HIV transmission among a tribal group living in the slums of Orissa, India. The sample consisted of 113 migrant tribals, age 15 to 40. This was a mixed quantitative-qualitative study, that included

both men and women. The majority of participants were sexually active at an early age with a mean age of such activity at 19.5 years and 15.8 years for women and men respectively. There was a high level of pre- and extra-marital sex among married and unmarried respondents, and unsafe sex practices such as not using condoms. Knowledge of using condoms and of the prevention, cure and cause of HIV was poor. This lack of knowledge was coupled with their low risk perception and negative attitude towards AIDS. The study also found no differences in these parameters among those who had pre- and extra-marital affairs.

Knowledge, Attitudes, Culture, and Sexual Behavior

There are several factors to consider when exploring knowledge, attitude and sexual behaviors, including the exploration of cognitive, psychosocial, socioeconomic, emotional elements (Ugarte, et al., 2013). This is especially important when studies have also demonstrated that knowledge and attitudes do not always coincide with behavior, and knowledge is not enough to change behavior (Castora, 2005; Lee et al., 2016). Findings from the latter study (Lee et al., 2016) demonstrated that knowledge about sexual issues does not necessarily predict sexual behavior, highlighting the need to consistently monitor content, relevance and effectiveness of sex education. Findings also indicated that knowledge among study participants was insufficient, especially in relation to the prevalence of STIs and unwanted pregnancies. The study, like others, highlighted the fact that attitudes towards condom use varied depending on gender.

Bakhoum et al. (2016) analyzed findings by gender, age, education, and intravenous drug use among an Egyptian cohort of substance abusers. Findings revealed that knowledge, attitude and practice (KAP) of risky sex behavior was low overall, however, respondents with higher education had significantly better knowledge about safe sex behavior. Significant positive correlations were seen between age and knowledge of safe sex. The majority of the studies cited were not formally guided by any theoretical foundation but used concepts from theories such as the Theory of Reasoned Action (TRA) and the Health Belief Model (HBM), demonstrating mixed results, at best.

Unlike most of the studies discussed earlier, a group of Croatian researchers found variables that could predict safe sex practices such as condom use. Stulhofer et al. (2007) found that, among a group of 1,093 Croatian men and women aged 18 to24, condom use at first sexual intercourse and positive attitudes toward condom use were the most robust predictors of consistent condom use at last intercourse. An important finding that could have implications for culture, role and religious obligations was that for women, having peers with less traditional attitudes regarding sexuality was associated with consistent condom use. The latter finding suggests that individuals steeped in their culture, religion, gender roles, and other forms of role defining obligations would be less likely to use condoms and other safe sex methods.

Military Culture, Gender Dynamics, and Sexual Trauma

The U.S. Military Environment and Culture

Military personnel worldwide have been recognized as a population at high risk for STI/HIV (Adebajo et al., 2002; Anastario et al., 2013). The United States military consists of 92% men with women accounting for only 8%, according to the ACOG (2012). Women also comprise approximately 13% of all active duty personnel (Lehavot, et al., 2013).

Military sexual trauma over the past two decades has received much attention in the general US media with military women being at highest risk along with the regular hardships of war (Williams & Bernstein, 2011). Sexual trauma accounts for 70 allegations of sexual assault per 100,000 uniformed service members, including both men and women (DoD, 2004; Williams & Bernstein, 2011). The U. S. military is a unique environment with its own set of shared values, attitudes, goals, practices, and strict codes related to sexual behavior. The DoD (2004, 2009) recognized in its own reports that the military system tacitly creates an environment that perpetuates shame and isolates victims of sexual aggression while making it difficult to punish perpetrators of such crimes. Such a culture lends itself to under-reporting of unwanted aggressive sexual acts to superiors (DoD, 2004; Williams & Bernstein, 2011) and sexual risk-taking behaviors to cover up guilt and shame.

Soldiers in the military culture of male dominance and control often view active military women in a negative light. There is also a pervasive belief in the military that whatever happens in the military, stays in the military, as a way to cement unit cohesion (Suris et al., 2007; Suris & Lind, 2008). Victims of sexual abuse in such a culture are encouraged to remain silent; have their reports ignored or may be blamed for the assault. Benedict (2007) presents a captivating account of experiences of women Soldiers in a culture where sexual harassment and violence are the norm. All these factors place women active in the military and as veterans in particular, at high risk for STI/HIV, despite their image of toughness.

Military sexual trauma (MST), defined as rape, nonconsensual sodomy, unwanted sexual contact, and attempts to commit these offenses, predisposes women to post-traumatic stress disorder (PTSD) (DoD, 2004, 2009; Williams & Bernstein, 2011). The phenomenon is serious enough that the DoD (2004) commissioned a task force on MST for further exploration. Sadler, et al. (2003, 2004) conducted a study among 558 women veterans of the Vietnam and Persian Gulf Wars. Twenty-eight percent reported having experienced one or more rapes and attempted rapes during their tenure in the service. More than 33% of this number reported rape or attempted rape at least twice while serving. The researchers also found that sexual coercion occurred at a rate of 8% among women and 1% among men.

Seventy-one percent of the women who presented for PTSD treatment reported having been sexually assaulted or raped while in the military were veterans of all wars. There was an 8% increase in reported sexual assaults toward women in the military between 2007 and 2008 or a total of 2,923 such reports (DoD, 2009). The DoD reported in 2018 that a statistically significant increase in the prevalence rate of penetrative sexual assault or some type of contact from 4.2% to 6.2%. This represented 20,500 service personnel in 2018, up from 14,900 in 2016. Women numbered 13,000 victims versus 7,500 men assaulted while in service, thereby increasing their prevalence rate of sexual assault the year before the study was completed (DoD SAPR, 2018), meaning that the problem has worsened despite best efforts.

Sexual harassment is frequently unreported or undisciplined in the military. Pershing (2003) found in her study of midshipmen at an elite naval academy that sexual harassment has been frequent and problematic and that it goes unreported because women believe that no action will be taken and that they will be the targets for isolation and retaliation. Pershing's findings were validated in a study by Hicks (2011). In the same vein, Vijayasiri (2008) notes that trust ". . .impacts victim decisions to file complaints. . ." and poor handling perpetuates a climate of distrust (p. 43). Women in the military must follow the chain of command in handling sexual harassment, so they are discouraged from reporting inappropriate or abusive behavior for fear it will be poorly handled by their superiors. The military insists on an emphasis on the individual over the institution when dealing with sexual harassment (Pershing, 2003; Vijayasiri, 2008 in Hicks, 2011), and thereby creates an untenable situation for the person reporting harassment. There still remains a dearth of knowledge regarding the links between sexual risk behavior and such incidents of STI/HIV among women veterans in the United States.

Kintzle et al. (2016), assessed the health status of veterans in Chicagoland (metropolitan Chicago area), and several findings confirmed results of earlier studies. The results overall were consistent with data from other states. The sample size was large, as it included over 1,200 veterans. Over 90% of the participants were men and 8.4% women. Military sexual trauma was defined as ". . .instances of sexual harassment, stalking and sexual assault. . ." (p. 31), and data was analyzed depending on whether or not participants served during pre-9/11 and post-9/11 periods. Approximately 78% of pre-9/11 women veterans and 73% of post-9/11 women veterans reported experiencing someone repeatedly making unwanted sexual comments, gestures or body movements directed at them. Forty-six percent of the pre-9/11 women, and 48% post-9/11 women, reported receiving unwanted, sexually explicit videos and messages. Stalking was the most frequently reported form of sexual assault among pre-9/11 women veterans with 64% of them reporting having had such experiences and 50% of post-9/11 woman veterans reporting the same. Previous studies conducted by Castro, et al., 2015; DoD, 2004; DoD, 2009; DoD, 2014;

Gradus, 2016 and Suris & Lind, 2008 are in agreement with this study, which found that women veterans were three times as likely as men veterans to experience sexual violence. Forty-five percent of post-9/11 women veterans reported experiencing some type of sexual assault during their service in the U. S. military, while 40% of the pre-9/11 women reported the same. Military sexual trauma clearly is prevalent and endemic among women in the military despite efforts to curb it; however, no study has explored whether or not such experiences shape female Veterans' STI/HIV sexual practices as they transition from military to civilian life. The DoD (2018) outlined several factors related to the military climate or environment that could have contributed to sexual assault. The survey found that personnel who worked in environments where ". . .sexual harassment, gender discrimination, and/or hostility were part of their workplace, sexual assault increased measurably." (p. 5). Subsequent conclusions indicate that sexual assault thrives in unhealthy work environments in the military.

It is theorized that the U. S. military naturally creates a climate leading to dysfunctional behaviors such as sexual aggression in men and risky health behaviors such as bulimia in women (Williams & Bernstein, 2011). Bulimia is a potentially life-threatening eating disorder. People with this condition binge eat. They then take steps to avoid weight gain. Most commonly, this means vomiting (purging). But it can also mean excessive exercising or fasting (www.mayoclinic.org). Treatments include counseling, medications, and nutrition education. Although both men and women experience sexual aggression, they respond to it differently. Williams and Bernstein (2011) posit that men soldiers, having lost personal control, use sexual aggression to regain it while women use bulimia for the same reason. These findings corroborate other research evidence regarding behaviors that place women soldiers at risk and are accompanied by risk factors such as those found in the general population (Turchik et al., 2012; LeardMann et al., 2013; Yano & Frayne, 2011). Those risk factors are young age, substance use and abuse, and sexual history including early age at first sex, and childhood sexual abuse (Bolan, 2013; Carroll Chapman & Wu, 2014; Kimmerling, 2007; Kimmerling et al., 2010). According to

Yano and Frayne (2011) "…the numerical minority [of women in the military] has created logistical challenges in trying to create delivery systems that ensure their equitable access to high-quality, comprehensive health services, especially gender-specific care. . ." (p. 227).

These researchers also noted that women veterans tend to have higher physical and mental burdens than their non-veteran counterparts. Their health burdens are also comparable to or worse than their male veteran counterparts.

Physical and Psychological Sequelae of Military Sexual Trauma

Women veterans who experience sexual assault in the military tend to report increased depression which can be linked to such adverse factors as lack of privacy when they report their experiences; substance use and abuse; gynecological, urological, neurological, gastrointestinal, pulmonary and cardiovascular conditions. Many do not report these events for fear of being blamed or not believed (Kimmerling, 2007). Sexual violations include sexual trauma, unwanted sexual contact, and sexual assault, which impact military operations. Such events more common than imagined because they are usually unreported during active duty, and only revealed during transition to Veterans' services (Braun et al., 2016; Morris, 2011).

Street et al. (2008) identified the gender-specific prevalence of sexual harassment and assault during military service, along with the negative mental and physical health correlates of such experiences in a sample of former men and women reservists. The stratified random samples of 3,946 former reservists were surveyed about their experiences in the military service and about their current health, including depression, PTSD, somatic symptoms, and medical conditions. Prevalence estimates and confidence intervals for sexual harassment were also calculated. Findings demonstrated that both men and women experienced significant sexual harassment and assault with deleterious mental and physical consequences. The investigation corroborated the findings of previous studies (DoD, 2014; DoD, 2018; LeardMann et al., 2013; Turchik et al., 2012) that women experienced higher rates of sexual harassment (60% female versus 27% male) and sexual assault (13% female versus 1.6% for men) than men. These findings are important

because sexual behaviors can be shaped by physical and mental conditions. They also indicate that the military environment creates a culture in which women are seen as sex objects by most of their male colleagues.

Pre-military sexual violence has also been reported among women in the military. The CDC reports in 2014 that approximately 80% of female victims of rape experienced their first rape at age 25 and nearly one in two women have experienced other forms of sexual violence in their lifetime, which is in line with research findings that many enlisted women between the ages of 18 and 25 in the military have experienced sexual violence prior to their military career (Bolan, 2013; Turchik, et al., 2012). An anonymous study of 470 military members revealed that 42% of the women who participated in the survey reported sexual violence prior to enrollment.

A literature review by Braun et al. (2016) revealed that more women than men experienced pre-military sexual assaults and that among women, there were specific socioeconomic factors associated with both pre-military and military sexual violations. Such factors included age, marital status, ethnicity and family income. “Military-on-military sexual violence – the type of sexual violence that most directly disrupts operations, harms personnel, and determines recruiting—occurs with astonishing frequency.” (Hillman, 2009). Hillman postulates that though the U. S. military has laws to prevent and punish such crimes, the campaign has largely been unsuccessful; partly because U. S. military law is dominated by legal precedents related to sexual violence and racialized images. She concluded that by promulgating such images of violent sexuality coupled with feminine subordination, the military justice system has reified sexual violence with “authentic soldiering” (p. 101).

Buchanan et al. (2008) supported Hillman’s assertion about a racialized system of military justice stacked against women through a rare study comparing sexual harassment subtypes among Black and White women by military rank. The investigators of this study examined a sample of 7,714 Black and White female military personnel for sexual harassment, and psychological distress utilizing the feminist Theory of Double Jeopardy and the cult of true

womanhood. Results demonstrated that White women reported more overall crude behavior and sexual harassment. Black women by contrast reported more unwanted sexual attention and coercion. Enlisted women reported higher rates of each subtype than did women officers. The results of the study also found that Black enlistees reported more sexual coercion than Whites; and enlistees reported more of these than officers.

The investigators found racial differences across officers, but Black women reported more psychological distress following gender harassment than did White women. Overall enlisted women reported distress following gender harassment and unwanted sexual attention, and coercion than did officers. The findings demonstrated that although "Black officers were less distressed at low levels of sexual coercion, as coercion became more frequent, their distress increased significantly, and at high levels, all groups were similarly distressed." (p. 347).

Military culture and environment support endemic sexual harassment and violence. Gender, rank, and ethnicity are factors related to sexual harassment and violence in that environment. There is clearly a dearth of studies that explore the influence of rank in sexual behavior and decision-making in relation to safe sex behaviors. The literature is replete with studies about military sexual violence, veterans and PTSD, anxiety, depression, and STIs but none to date has explored the potential or direct linkages between the culture of the military and STI/HIV infection among female Veterans' sexual practices. This study aims to close some of the gaps in the literature and begin a trajectory focused on female Veterans' specific factors that predict female Veterans' sexual behaviors in the prevention of STI/HIV.

Sexual assault/abuse cannot be divorced from the context of the social movement even though society does not generally respond in a timely manner to women's issues. Women in the United States and many other parts of the world began to agitate against their male counterparts who had been sexually assaulting and harassing them for years behind closed doors in 2016. This movement became known as the #MetooMovement. Though this movement began in 1997 to address sexual harassment and assault, it really did not take root until ten years later when Tarana

Burke, a Black woman and victim of sexual abuse herself, started the movement because she had fallen short of supporting a 13-year-old girl who had reported an incident of sexual abuse to her. According to Garcia's essay in the *New York Times* (2017), entitled, The Woman who Created #MeToo Long before Hashtags:

> Ten years after that conversation, Ms. Burke created *Just Be Inc.*, a nonprofit organization that helps victims of sexual harassment and assault. She sought out the resources that she had not found readily available to her 10 years before and committed herself to being there for people who had been abused. (p. 2)

Twenty-one years later, the *#MeToo Movement* was recognized in October 2017 when Alyssa Milano, a famous Hollywood actress asked women, "If you've been sexually harassed or assaulted write 'me too' as a reply to this tweet. 4:21 PM - Oct 15, 2017 (Garcia, 2017). That one tweet opened up the floodgates to women all over the USA and the world as powerful women began to tell their stories of sexual harassment and abuse and society began to respond. This led to the downfall of many powerful men who were once revered socially, politically, and especially economically as they were wealthy, such as the movie mogul Harvey Weinstein, famous NBC anchorman Matt Lauer, renowned newscaster, journalist and anchorman CBS Charlie Rose and many others. These women covered up the behavior of these powerful men for years out of shame because they felt they needed to do so to maintain successful careers and many had been threatened with lawsuits or damage to their careers. This is directly related to power and dependence despite the fact that many of these women were also rich and powerful. This movement demonstrates that poor, powerless women of color, such as Tarana Burke are generally ignored in the face of sexual harassment and abuse and even sometimes blamed for it. It also demonstrates that sexual harassment and assault has no limits and all women are susceptible. On the whole, the #MetooMovement highlights that social context matters and society will listen to powerful people—be they men or women. The military with its own set of rules and regulations, generally tilts in favor of the men who outnumber women.

Intimate Partner/Interpersonal Violence in Relationships

Intimate partner violence (IPV) is a serious, preventable public health problem that affects millions of Americans. The CDC describes IPV as ". . .physical, sexual, or psychological harm by a current or former partner or spouse." (www.cdc.gov). This type of violence can occur among heterosexual, same-sex or transgender couples and does not require sexual intimacy (CDC, 2014). Intimate partner violence is defined as ". . .abuse or aggression that occurs in a close or relationship and an 'intimate partner' refers to both current and former spouses and dating partners and involves physical and sexual violence, stalking, and psychological aggression," (CDC, 2019). One in five women (20%) report having experienced severe physical violence from an intimate partner in their lifetime; one in four women have experienced sexual violence from an intimate partner; 43 million women have experienced psychological aggression from an intimate partner and 10% women reported having been stalked by an intimate partner (CDC, 2019).

According to the ACOG (2012), ". . .increased rates of lifetime exposure to interpersonal violence such as sexual assault, and intimate partner violence, contribute to the diminished physical health status of women Veterans compared with their civilian counterparts." (p. 2). This assertion is substantiated by other researchers (Black, 2011; Black et al., 2011; Gerber et al., 2014; Turchik, et al., 2012) and by the CDC (2019). The American Congress for Obstetricians and Gynecologists also asserts that among military service personnel returning to civilian life, intimate partner violence is also a concern. Aggression in intimate relationships can be manifested in several ways encompassing physical, sexual, psychological, domestic violence, and economic abuse. Post-traumatic stress disorder is one ailment commonly associated with being a veteran or an active duty soldier, which for some women veterans may reflect not only the ravages of exposure to battle, but also to the trauma of sexual violence prevalent in military culture. Interpersonal violence has been linked in some studies with PTSD among veterans.

The American Psychiatric Association (APA) defined PTSD in 2013 as an anxiety disorder that occurs after someone experiences a traumatic event. This has been medically substantiated by the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5, 2013) which maintains that changes in how a person thinks and feels, referred to as arousal and reactivity symptom cluster, produces aggressive behavior, and irritability, which can be manifested in intimate partner violence. Other researchers have also demonstrated ". . .associations between severity of hyperarousal and levels of anger and aggression in veterans." (Tharp et al., 2016, p. 1098; Tharp, 2014). There is also evidence that IPV complicates other health issues among veterans, such as, hypertension, cardiovascular disease, and diabetes (Black, 2011; Black et. al., 2011; Gerber, et al., 2014).

Campbell et al. (2008) found that the prevalence rate of IPV was as high as 61% in a population-based study in India. Decker et al. (2009) conducted a study among 20,425 husband-wife Indian dyads, which revealed that 37.4% of the wives experienced intimate partner violence and 0.4% of the husbands and 0.2% of the wives were HIV infected. This finding supported their hypothesis that ". . .abusive men are more likely than non-abusive individuals to contract STI/HIV and may subsequently transmit infections to their female partners. . ." whom they abuse (Decker et al., 2011, p. 2), thereby rendering IPV a risk marker for women's male partners' STI/HIV status. Though this study was conducted in India among heterosexual couples, it has implications for any woman and can apply to women veterans who experience IPV, laying the foundation for further exploration of the phenomenon in other populations of the world including the United States military.

Murdoch et al. (1995) asserted that women veterans' experiences with domestic violence and sexual harassment while in the military may adversely affect their health, and that this goes unrecognized, for the most part. They conducted a study to assess women Veterans' experiences with domestic violence and sexual harassment while in the military, including its relationship to their health, and heath care utilization. Murdoch et al. surveyed 191 hospitalized female Veterans

at the VA and 411 randomly selected female outpatients, utilizing an anonymously validated questionnaire. The results were analyzed using bivariate and multivariate techniques based on age. Twenty-four percent (24%) of the respondents under age 50 reported domestic violence in the past year and 90% reported sexual harassment while in the military. Seven percent of those older than 50 reported having experienced domestic violence in the past year, and 73% reported a history of sexual harassment in the military. Findings also suggested that respondents with a history of domestic violence or sexual harassment while in the military were more than twice as likely to report a history of anxiety or depression, and a history of domestic violence was associated with more lifetime surgical procedures.

The military has mandatory reporting laws in relation to domestic violence; however, sentiments are mixed when it comes to women's support. Gielen et al. (2006) conducted a study to explore women's policy preferences concerning routine screening and mandatory reporting of domestic violence. The sample included 474 active duty military women from all services, 119 of whom had experienced domestic violence during their service. The majority (57%) supported routine screening, and although 87% said the military's policy on mandatory reporting should remain the same, only 48% thought such assaults should be reported to their commanding officer who was usually a man. Abused women were significantly less likely than non-abused women to agree with this aspect of the policy. Results from the study indicated that abused women were ". . .less likely to be college graduates, Caucasian, married, and to have an annual household income of $50,000 or more per year. . .abused women were also more likely to be enlisted personnel than officers (61.3% versus 36.6%)." (p. 732). Sweeney et al. (2013) also laid out a case for mandatory screening for IPV at the VA due to its prevalence and negative effects on veterans who show up for care. It must be noted that based on the data, personnel at the lowest rank of the military hierarchy are at the highest risk for violence. Gender, race, rank, education, marital status, and income are variables to consider when exploring the phenomenon of IPV among military personnel or veterans.

Forced sex in any intimate relationship is a form of IPV in the United States. According to the CDC (2014) a woman who experiences IPV in the form of forced sex has a high risk of acquiring STI/HIV. Decker et al. (2009) contend that ". . .a growing body of evidence demonstrates elevated STI/HIV prevalence among abused women." (p. 2) and that intimate partner violence consistently coincides with a high prevalence of STI/HIV. Sexual coercion, when experienced in intimate relationships, is a form of IPV that falls into the category of physical and psychological aggression or abuse. Studies have demonstrated that women in abusive relationships are less likely than others to use condoms and are more likely to experience verbal and emotional abuse or threats of physical harm if they discuss condom use with their partners (Wingwood & DiClemente, 1997, 2000).

Both men and women perpetrate intimate partner violence, and both are victims of the problem in the military worldwide; however, more women are victims. One hundred heterosexual couples (man Iraq/Afghanistan veteran, woman civilian partner) seeking couples' therapy at a VA clinic completed self-report measures of violence in their relationship. The study researchers aimed to: (1) describe the frequency, gender differences, and agreement in couples' reports of male-to-female and female-to-male IPV reported by male veterans and their female partners who were seeking couples therapy; (2) to describe the pattern of violence reported by these couples (e.g., one-sided or mutual) and determine if frequency of violence varied based on such patterns and (3) to examine whether or not frequency of violence or pattern of violence were associated with veteran diagnosis of PTSD. Tharp et al. (2014) found in this study that PTSD was not necessarily associated with IPV and that both men and women veterans perpetrated IPV despite previous findings refuting such an assertion. Seventy-nine percent of the respondents were White and 9% were Black veterans with partners. Almost all couples reported verbal aggression. Men reported perpetrating more frequent sexual coercion, and women reported perpetrating more frequent physical aggression.

Women partners reported perpetrating significantly more physically aggressive acts on their male partners than male veteran partners, a phenomenon that is also rare and under-reported even among civilians because of stigma and machismo. The study further revealed that 37% of respondents experienced physical aggression; 95% verbal abuse, and 33% sexual coercion. Ninety-nine percent of the verbal acts were perpetrated by female partners; while 34% of the physical aggression and 27% of the sexual coercion were carried out by men veterans. Forty-five couples reported no physical aggression. Twenty-seven of the 45 couples reported physical aggression by only one partner.

Women perpetrated the aggressive acts against their partners in nineteen of these cases. Men reported more sexual coercion on their partners than physically aggressive acts, with slight to fair agreements in reports of sexual coercion and almost complete agreement in terms of physical violence. The study underscores the need for clinicians to assess both partners of a sexual dyad for IPV and the need for effective prevention strategies and treatments for veterans. There are frequent inconsistencies and underreporting of IPV and this may even be amplified among veterans because of the practice in the VA to refer only severely violent veterans for specialized therapy in the community (Tharp et al., 2016), hence promoting a reluctance to discuss sexual coercion. Though the study did not include women veterans, it has implications for this group because it is reasonable to deduce from these results that men veterans in relationships with women veterans are likely to perpetrate acts of physical and sexual violence on their partners. It is also reasonable to conclude that women veterans will be perpetrators of more verbal and physically aggressive acts than their male counterparts.

Decker et al. (2009) demonstrated that IPV can be both a risk marker and risk factor for women's HIV. The study was conducted among 20,425 husband-wife dyads in India between 2005 and 2006. Participants provided IPV data and HIV test results. Logistic regression models first were used to estimate the odds ratios and confidence intervals to evaluate husbands' HIV acquisition outside of the marital relationship based on their perception of IPV. Second, analysis

models were used to estimate the wives' HIV infection based on their husbands' HIV infection as a function of IPV exposure. Results demonstrated that 37.4% of wives experienced IPV; 0.4% of husbands and 0.2% of wives were HIV infected. Abusive husbands had an increased risk of HIV acquisition outside the marital relationship compared with non-abusive husbands. A husband with HIV infection was associated with increased HIV risk among wives and this risk was elevated seven times over in abusive relationships. The CDC (2014), Pan American Health Organization (PAHO) (2013), WHO (2004, 2017) also concluded that, after several studies IPV can be both a risk for HIV and a consequence of HIV for anyone who has had a history of victimization. This reasoning can be extended to STIs, in general, in the face of IPV.

Satcher et al. (2012) also found that much is lacking in reintegrating returning Veterans of war into civilian life and society. Such challenges related to reintegration are manifested in relationship strains like IPV, difficulty parenting, divorce, partners turning into caregivers, and unique issues of single Veterans in search of intimacy. All these factors contribute to staggering rates of veteran suicide with more than 75% of the suicides committed among army veterans due to failed intimate relationships (DoD Report, 2004; Skomorovsky et al., 2015). According to the VA non-deployed veterans had a 61% higher suicide risk compared to the general population while deployed veterans had a 41% higher risk between 2001 and 2007. It must also be noted that now, more than ever, more soldiers are surviving their injuries due to advances in medicine. Traumatic brain injury (TBI) is now known as the "signature wound" of the Iraq and Afghanistan Wars with more than 20% returning from these wars with TBI and another 11-20% with PTSD (Satcher et al., 2012). Both TBI and PTSD cause soldiers and veterans to exhibit the same symptoms of aggression, irritability, depression and anxiety which can adversely affect family functioning. Satcher and colleagues concluded that a call to action is necessary to break the silence related to IPV and child abuse, among single Iraq and Afghanistan War Veterans.

Child abuse or child maltreatment is also more common during deployments. Most frequent forms of child maltreatment are neglect, emotional and physical abuse. Child abuse is

three times more frequent in homes from where a parent was deployed; 54% was perpetrated by active duty parents and 40% by veterans (Watson Institute, 2015; Trautman et al., 2015). Veterans with pent-up negative emotions from their deployment experiences engage in aggressive actions towards their children. Aronson et al. (2014) outlined several studies between 1997 and 2009 demonstrating that children exposed to partner abuse (PA) are also victims and are at risk for a number of negative psychosocial outcomes. McTavish et al. (2016) validated these findings in their study. The divorce rate among military personnel reached its highest peak since 1999 with over 30,000 marriages ending mid-deployment in 2010, resulting in a large number of single veterans returning from war without the support system they had before they were deployed (Gibbs et al., 2011; Satcher et al., 2012). Many as a result spiraled into alcoholism and related negative behaviors (multiple sex partners, risky sexual behaviors), again placing them at risk for STI/HIV.

The same behaviors were seen in the Canadian Armed Forces (Skomerovsky, et al., 2015). Women were found to be twice more likely than men to develop PTSD at any time in their lives (Gradus, 2016), a possible link with sexual coercion, assault and rape. It must also be noted that there are subpopulations of LGBTQ (lesbian, gay, bisexual, transsexual, queer) people in the military who have special needs which are not being met. Even though lesbians may serve openly in the military, as veterans they may face discrimination in civilian jobs which may then place a strain on intimate relationships especially if job related benefits are not afforded their partners or children, and so the call to action is to promote healthy relationships, document family experiences, and encourage responsible sexual behavior among all veterans (Satcher et al., 2012).

Alcohol misuse among sexual minority women, whether self-identified or by sexual behavior, is higher than among heterosexual women (Lehavot et al., 2016). A sample of 702 lesbian/bisexual women veterans who responded to an internet survey indicated that 38% of them screened positively for alcohol misuse, and the younger in age, the more severe the misuse. Though the factors related to the high prevalence of misuse among them were not elucidated in

the study, Lehavot et al. attributed this phenomenon to Minority Stress Theory which posits that minorities experience increased stress related to their status as minorities. These stressors include ". . .external events such as discrimination, victimization, and rejection from others, as well as internal processes such as internalized homophobia, hiding one's identity or same-sex experiences, and stigma consciousness." (p. 224).

Research evidence shows that military women tend to have higher rates of exposure to sexual violence, including sexual assault during their civilian lives (ACOG, 2012). Childhood sexual abuse has been associated with lifetime domestic violence (Aaron, et al., 2013). Sayers et al. (2009) explored family problems among recently returned military veterans referred for a mental health evaluation. These were veterans who served in Iraq or Afghanistan after 2001 returning to civilian life after 2001. The study revealed that 75% of the married/cohabiting veterans reported some type of family dysfunction such as feeling like a guest in their own household (41%), their children acting afraid or not being warm toward them (25%) or being unsure of their family role (37%). Among veterans with current or recently separated partners, 54% reported conflicts involving domestic violence (shouting, pushing, or shoving) and 28% reported that their partners were afraid of them. Some also experienced abuse of alcohol, illicit drugs and prescription painkillers (Golub & Bennett, 2014). The problem is further underscored because almost 25% had a gun in the home. The researchers concluded that mental health problems may complicate veterans' readjustment and reintegration into family life. Even though this study included participants from both the Afghanistan and/or Iraq Wars, and only 10% were women, IPV and domestic abuse seem to know no bounds when it relates to the military.

Prolonged military deployment, alcohol and substance use or concomitant mental health conditions in one or both partners can exacerbate family stress, thereby predisposing veterans to IPV. Several studies have revealed physical and psychosocial health consequences of sexual victimization highlighting that military sexual trauma has been linked to risky sexual behavior, such as exchanging sex for commodities such as food, shelter or money, further compounding

female reproductive health risks (ACOG, 2012; Kimmerling, 2007; Kimmerling, et al., 2010; Rowe et al., 2009; Suris et al., 2007; Suris & Lind, 2008). Murdoch and Nichol (1995), and Tharp, et al., (2016) also found that domestic violence was inexorably linked to sexual assault. One third of the respondents with a recent history of domestic violence also reported sexual abuse by their partners. The researchers observed that younger women veterans may be closer to a culture of violence or may be more prone to marrying violent men, hence the high prevalence of domestic violence among them.

Transgender persons are also an understudied population within the military and in the United States in general and are almost among the most at-risk population for STI/HIV (PAHO, 2013). It is estimated that over 134,000 American veterans are transsexual and over 15,000 Trans people are serving in the military today (National Center for Transgender Equality, 2019) and one-fifth of all transgender person in the United States veterans making them twice as likely to be serving in the military (American Civil Liberties Union [ACLU], 2017). The VA has issued a four-point directive to all of its care facilities 1) requiring all staff to provide care to transsexual persons without discrimination and in a manner consistent with care and management of all veteran patients. 2) All personal information about transsexual persons is to be kept private and confidential. 3) Under existing regulations, the VA does not cover the cost of, or perform gender reassignment surgery. 4) Transsexual persons are entitled to all other medically necessary healthcare available for them, including sex-specific care such as mammograms, Pap smears, transition-related hormones and mental health (VA, 2011). After three years of being able to serve openly in the United States military under the Obama administration, since 2016, the new Trump administration has banned transgender persons from military service, and this includes revocation of health care benefits previously afforded them for role reassignment surgeries (ACLU, 2019). The ACLU continues to fight on their behalf.

Operario et al. (2011) conducted a study in the San Francisco Bay area among 174 transgender women to explore unprotected sexual behavior and HIV risk in the context of their

primary partnerships. Study results indicated that 41% reported a positive HIV status; 13% had another STI during the past year and 34% had unprotected sex with a primary male partner during the past three months. The study also revealed that factors associated with unprotected sex with a primary male partner were living with the partner, drug use, alcohol use, education level, low self-efficacy to use condoms, and perceived discrimination. The findings also revealed that 35% of the transgender women in this study in HIV-serodiscordant primary partnerships had unprotected sex with their male partners during the past three months. Eighteen percent of the transgender women in HIV-seroconcordant primary partnerships had unprotected sex with an outside partner during the past three months. The conclusion to be drawn from these statistics is that transgender women practice high risk sex despite knowing they or their partners are HIV-positive and this study highlights the need for couples-focused inquiry, education, and interventions.

These studies indicate that there is a positive association between IPV and risky sexual practices. No study has examined this phenomenon in relation to women veterans only, even though many servicewomen and veterans have demonstrated high rates of STIs, surpassing those of the general population. There additionally is no research among women veterans to determine if IPV transfers over into civilian life when combined with the background of having experienced life in an environment of power imbalance (social dominance in the military). Such an experience can lead to fear and threats in personal relationships that can result in STI/HIV infection. It is also unknown if the military environment shaped their attitudes and beliefs in ways that affected decisions about lack of status disclosure and other high-risk sex behaviors. Research has demonstrated that feelings of fear and powerlessness in intimate relationships prohibit honest status disclosure among STI/HIV infected persons (Chenneville et al., 2014; Hoffman, et al., 2008; Kalichman, et al., 2009; Kalichman et al., 2001; Seth et al., 2010).

Though no study has examined the link between women veterans' HIV conditions and IPV, studies in civilian populations have demonstrated positive correlations between IPV, sexual

risk behaviors, and HIV infection (Black, 2011; Decker et al., 2009; El-Bassel et al., 2005; El Bassel, et al., 2009; Njie-Carr, 2014; Wingwood and DiClemente, 1999, 2000). Childhood sexual abuse has been associated with lifetime domestic violence (Aaron et al., 2013; ACOG, 2012; Williams & Bernstein, 2011). Since a high percentage of women entering the U. S. military have a higher prevalence rate of childhood and other sexual abuse prior to enrollment, when compared to the general population (ACOG, 2012; Williams & Bernstein, 2011), it is likely that women veterans with STI/HIV are at high risk for IPV and that many of them might have contracted STI/HIV while in the military. Research is needed to explore the factors that predict safer sex among women veterans, especially when they know they are at risk for transmitting STIs such as HIV.

The World Health Organization has concluded that the problem of IPV against women highlights a growing recognition that women and girls remain at high risk and, are consequently vulnerable to STI/HIV infection (WHO, 2004, 2013). The WHO also notes that this type of violence against women ". . .is shaped by deep-rooted and pervasive gender inequalities and such violence often overlaps with the AIDS epidemic in many parts of the world." Women are also at risk for violence in conflict settings, including rape which places them at even higher risk for HIV and other STIs (WHO, 2004). It remains unknown in the US how many women veterans contracted STIs as well as HIV as a result of being held captive by enemy fighters or by being raped by their colleagues. Intimate partner violence destroys family relationships, and places children at risk for maltreatment. When it occurs among military personnel, the condition results in psychosocial and physical stressors for veterans especially when combined with PTSD. Research has indicated, also, that IPV negatively impacts adherence to antiretroviral treatment (Lopez, et al., 2010; WHO, 2004), increasing risk for STI/HIV transmission and progression to AIDS. McInnes at al. (2013) found that use of the patient electronic health record (PHR) was associated with more than 90% adherence among a sample of 1,871 (1,821 of which were men) HIV-infected veterans after controlling for sociodemographic variables. Much more investigation

is needed in these areas in relation to women veterans' sexual practices, a neglected area of research for many years.

Power Imbalance in Relationships

Sexually active young people, especially Black and Hispanic adolescents, generally have partners who do not use condoms, and they continue to face barriers in enacting protection from STIs/HIV. A report in the *New York Post* (Gollayan, 2016) indicated that millennials were no longer using condoms, explaining the rise in certain STIs among the youth (CDC, 2015). This is true among women of ethnic minorities globally; in the Netherlands (Bertens et al., 2009) as well as among African Americans (Hawes & Berkley-Patton, 2014; Hobfoll, et al., 1993; Njie-Carr, 2014). There are no studies that explored the power imbalance factor in sexual relationships and women veterans' sexual decision-making. This lack in the literature indicates that it is necessary to look to other studies to determine how power imbalance in sexual relationships are likely to impact the sexual practices of women veterans and its link to STI/HIV infection. Research has found that a group's social power matters when it comes to STI/HIV. It therefore is important to investigate KAP in relation to incidences of STI/HIV and how this may determine power in relationships.

Teitelman et al. (2008) found that teens were more likely to practice consistent STI/HIV prevention when mothers talked with them about partner sexual pressure ($p = .017$) and fathers talked about resisting partner sexual pressure ($p = .034$). Sexually active girls who perceived that their mothers held egalitarian beliefs about partner decision-making had more consistent condom use ($p = .029$). Researchers concluded that given the context of increased STI/HIV risk, it is critical that parents discuss partner dynamics with daughters to offset peer pressure and build self-confidence among these young women to act responsibly when faced with sexual situations. There is very little or no research that elucidates parental relationships among veterans and none that explores women veterans' relationships with their mothers. Despite this dearth, what exists demonstrates that family relationships among veterans and their parents require more exploration.

A study by Murray-Swank et al. (2007) examined views about family relationships and family participation in care among a sample of 69 consumers with serious mental illness. Participants in the study were receiving treatment within the VAHS. Study findings suggested that younger consumers and those with higher levels of psychiatric symptoms were more likely to report family conflict and distress. Notably among participants, 67% of them desired family participation in their psychiatric treatment and those with at least weekly contact with family were more likely to want family participation. Participants also reported a number of barriers to family participation in their mental health treatment, including their own concerns about privacy, burdening family, and skepticism that family involvement would be helpful. Findings from this study have implications for the implementation of evidence-based family programs, including efforts toward development of novel interventions to address veterans' concerns and promote effective family participation in care, when warranted. One can also conclude from this study that if children do not have parental validation, they will seek it from other sources, including partners in relationships who may coerce them to engage in unsafe sexual practices.

Women veterans have been in military service, so it may be assumed that they are tough, and seek rule in any relationship. Studies have demonstrated, however, that many female military personnel and women in general (Hall, 2008) who have experienced military sexual assault have a history of childhood sexual assault, during which they were generally isolated so they could be used for gratification purposes while their offenders justified their actions by blaming the victim (Lawson, 2003). These long-term experiences have the potential to render even strong persons submissive, weakened and mentally destroyed. Despite this, it is not known how such experiences affect women veterans in terms of power and strength in sexual relationships and sexual behavior, in general. Further studies are needed to examine these linkages if they exist.

Albarracin et al. (2004) conducted a meta-analysis of 58 studies involving over 30,270 participants with a mean age of 25, of whom 48% were women, and 77% had completed high school. The purpose of the study was to explore the influence of social power in determining

condom use decisions in the context of HIV prevention efforts. Ethnic minorities and majorities were both adequately represented in the sample. The samples were typically composed of heterosexual participants and groups that had relatively high risk for HIV infection. The population variables examined in this meta-analytic review included gender, age, ethnicity and education. Findings from the analysis indicated that control perceptions generally correlated more strongly among members of societal groups who lack power, including women, younger individuals, ethnic-minorities and people with lower educational levels. The investigators also found that norms generally had stronger influences among younger individuals and people who had greater access to informational social support, including men, ethnic majorities and people with higher levels of education.

Though this study was focused on HIV prevention methods, it also has implications for STI prevention. The researchers recommended that interventions to facilitate safer sex practices should be different depending on whether or not the target audience is older or younger, male or female, an ethnic majority or minority, well or poorly educated. They also recommended that the designs of interventions should include recognition of the most determinant characteristic and focus on that particular variable to change behavior and increase recipients' formation of strong positive evaluations of condom use. Researchers also suggested giving increased attention to these attitudes, instead of assuming that attitudes have a lesser influence among men. Normative messages to persuade men to use condoms may be helpful, but an exclusive program to do so is ineffective; efforts should instead be aimed to alter structural factors that prevent people from using condoms.

One structural factor that has received attention in the past is to decrease the price of condoms and make them more available in the environment. Pulerwitz et al. (2002) found the same results when they developed the Sexual Relationship Power Scale. That is, women with high levels of relationship power were five times more likely to report consistent condom use than were women with low levels of relationship power, even when they controlled for

sociodemographic and psychosocial variables ($p < 0.05$)," (p. 797). Population attributable risk estimates indicated that 52% of the lack of consistent condom use among women could be attributed to low relationship power. Researchers investigating and program designers promoting condom use should consider power issues within the relationship (Wingwood & DiClemente, 2000).

Evidence on power imbalance in relationships has also accumulated to demonstrate women's risk of STI/HIV from male partners, such as childhood abuse, sexual assault, and relationship abuse (Rosenthal & Levy, 2010) as this is directly related to the amount of power women have in such relationships. There is also documented evidence that childhood emotional, physical and sexual abuse in American women were independently related to achieving condom use with men (Aaron et al., 2013; Perrino et al., 2006). Women of diverse racial and ethnic backgrounds who were HIV-infected were found to have been more likely to experience childhood sexual assault than those who were HIV-negative (Center for AIDS Information and Advocacy, 2012; Paxton et al., 2004; Petrak, Byrne & Baker, 2000).

According to the 2013 PAHO (2013) comparative report on IPV in Latin America and the Caribbean, no country is exempt from IPV. Emotional abuse and controlling behaviors are also common in these countries Even though the intersection between IPV and HIV/AIDS are complex, the WHO asserts that most forced sex is committed by individuals known to the victims (e.g. intimate partners, male family members, acquaintances) and individuals in positions of authority (PAHO Report, 2013). Younger girls tend to have had coerced first sexual encounters, often with an HIV-infected person resulting in direct HIV infection. Indirect transmission may also occur through forced sexual risk-taking behaviors that accompany physical and psychological violence.

The Centers for Disease Control and Prevention reported that approximately 29% of women in the US have experienced rape, physical violence, and/or stalking by an intimate partner and one in four women 18 years or older have experienced physical IPV (Black et al., 2011). In a

CDC funded study by Gupta et al., (2009), men from the Caribbean who had been exposed to political violence in their home countries were likely perpetrators of IPV. Though the study did not include Jamaican men, political violence and IPV are common in Jamaica and has not been studied in the United States. Gillespie-Johnson (2008) demonstrated that women in her study were dependent on men and felt that they would not disclose their status if they were HIV-infected for fear of losing the relationship. Victims of repeated violence over time experience more serious consequences than victims of one-time incidents with a strong correlation between the frequency of physical abuse, emotional abuse and sexual coercion among AAWs (Johnson & Leone, 2005; Wilson & Webb, 2018).

Arscott-Mills (2001) found 75% physical abuse in a sample of 187 Jamaican women who sought assistance at a Women's Center. Given that IPV is a common phenomenon in the Jamaican household, it is reasonable to examine the phenomenon among women veterans, many of whom are of Jamaican descent in the US. Research has shown also that IPV affects adherence to ART (Lopez, et al., 2010), increasing risk for HIV transmission. El-Bassel et al. (2009) cited the conclusion that addressing IPV is only one intervention strategy to prevent HIV/AIDS among AAWs.

Immigration, Culture, Knowledge, Attitude, and Sexual Behavioral Beliefs

Sexual behavior, knowledge, attitude, and beliefs about transmission of STIs/HIV have been studied worldwide for many years among various groups that include gender, sexual orientation, military personnel, religion, culture and ethnic groups. Sexual orientation was the focus of a study in 2013, by 1.6% of U.S. adults identified as gay or lesbian, 0.7% identified as bisexual while 1.1% of adults identified as ''something else,'' stated ''I don't know the answer,'' or refused to provide an answer in a survey by Ward et al. (2014). These groups of marginalized individuals continue to grow, and a large number of veterans and personnel identify as LGBTQ. Despite the many studies and interventions in existence, some groups, such as women veterans, continue to be excluded from such research, though they are disproportionately globally affected

by STI/HIV. These diseases continue to spread with devastating and sometimes long-lasting effects among the most vulnerable peoples of the world. The CDC and the WHO have always advocated the need for culture specific, including gender-specific, research related to sexual behavior because people will always resort to practices they know, or those based on personal experiences even if they are highly educated, or away from their native homelands through transmigration. Gender attitudes, culture and behavioral beliefs influence sexual behavior, as demonstrated by many studies to elucidate how these variables factor into the transmission and prevention of STI/HIV in the USA and the world (El-Bassel, et al., 2009; Gillespie-Johnson, 2008; Hobfoll et al., 1993; Hutchinson, et al., 2007; Jemmott & Jemmott, 2007; Wingwood & DiClemente, 2000).

Gillespie-Johnson (2008) researched HIV/AIDS prevention practices among immigrant Jamaican women in the State of Florida who had come to the U.S. over the previous 12 years. She found that even though ". . .most women were knowledgeable about HIV/AIDS prevention, their religious beliefs and cultural practices were deeply embedded in their health practices." (p. S2-175) and prevented them from engaging in protective sexual behaviors. It is possible that military culture and veterans' own individual ethnic culture play an important role in the sexual practices of women veterans who come from various ethnic backgrounds. Yet, there is no available research to substantiate this, as no study has explored how immigration impacts women veterans' sexual practices.

Another layer to the cultural aspect of sexual behavior lies in being gendered female. A higher percent of US women veterans are minorities even though fewer veterans are women with an average age of 49 (US Department of Veterans Affairs National Center for Veterans Analysis and Statistics, 2013). Research has demonstrated that minority women are more likely to engage in risky sexual practices and are also disproportionately affected by STI/HIV (CDC, 2014, 2015; El-Bassel, et al., 2009; Hawes, 2014; Hobfoll, et al., 1993; Njie-Carr, 2014). It has become a cultural stigma that minority women--especially Black women—are carriers of STI/HIV based

on the reports and studies that have been completed. Women veterans who are from minority ethnic groups may internalize some of these messages and act out accordingly. Studies like this one are necessary to explore these assumptions to understand the impact of ethnicity or race, being female in a male-centric environment, and how these factors contribute to sexual behavior.

Research has also demonstrated that AAWs are more disadvantaged due to the high rates of incarceration among Black men, leading women to remain in unhealthy partnerships. Safe sex is minimized or nonexistent in this sociocultural environment, placing them and their partners at risk for IPV, drug and alcohol abuse, and STI/HIV. Some women in such a climate may engage in risky sex with existing and new partners in order to hold on to them. Parks et al. (2009; 2011) conducted a study to predict risky sexual behavior with new and regular partners in a sample of women bar drinkers. They found that, though the bar is a high risk environment that sets the stage for casual sexual encounters, women who drink in bars on a regular basis tend to be ". . .heavy episodic drinkers, consuming more than five drinks and report moderate intoxication on a usual night out." (p. 197). They also found that rates of risky sexual behavior were significantly higher with regular partners compared with new partners. Increased risky sexual behavior with new partners was significantly associated with having had a riskier regular partner in the past six months; lower STD/pregnancy prevention assertiveness; increased sexual disinhibition when drinking; a greater history of prior sexual risk-taking behavior and more frequent drinking in bars. The researchers also found that increased risky sexual behavior with regular partners was significantly associated with such factors as: being older; use of oral contraceptives; lower assertiveness for STD/pregnancy prevention; a greater history of prior risky sexual behavior and increased drug use. These findings are consistent with those of other similar studies (Champion, 2011; Champion, et al., 2013; Crepaz, et al., 2009; Salazar, et al, 2011; Villarruel, et al., 2005).

The literature is replete with studies about how poverty (Weiser et al., 2011); immigration, culture, IPV, and STI/HIV (Gonzalez-Guarda, et al., 2011; Dua & Lia, 2013; Pellegrino, et al., 2015) intersect to disadvantage women across the globe because they all

combine to present a desperate situation for women who are sometimes socially powerless and have to resort to survival mode in sexual relationships. It is unknown, however, how these factors combine or not to impact women veterans' sexual behaviors.

Immigration Status and STI/HIV Propensity

Batalova (2008) reported in the Military Policy Institute (MPI) that "naturalized citizens, lawful permanent residents, and certain nationals of three countries in free association with the United States — the Marshall Islands, the Federated States of Micronesia, and Palau — are eligible for military service" (https://www.migrationpolicy.org). This report by the MPI further asserted that Congress can deem other foreign-born individuals eligible to serve if the secretary of a specific military branch ". . .determines that such enlistment is vital to the national interest" (Batalova in MPI, 2008). Data from the DoD indicates that more than 65,000 (5%) immigrants (non-U.S. citizens and naturalized citizens) were serving on active duty in the U.S. Armed Forces as of February 2008. The Navy at that time had the highest numbers with immigrants comprising 8% of their total personnel. The top two countries of origin for foreign-born US military personnel were the Philippines and Mexico. Latin America and the Caribbean constituted 38.7% (23,926) of all the foreign-born personnel in the armed forces while 35.9% (22,226) were from Asia. Eleven percent of those serving in the military were Hispanic. An executive order made noncitizen members of the armed forces eligible for expedited U.S. citizenship in July, 2002. The immigrant military Veteran was approximately 530,000 as of 2019, representing 3% of the 18.6 million veterans nationwide. The number of veterans who were born outside the United States stands at approximately 530,000, which represents 3% of all 18.6 million veterans nationwide. Almost 1.9 million veterans are the U.S.-born children of immigrants, such that the 2.4 million veterans of immigrant origin, either because they themselves are immigrants or are the children of immigrants, account for 13% of all veterans.

Immigrants also served during peace times in the US Armed Forces. According to the United States Department of Veterans Affairs (2009, 2011), about 21.5 million (9.1 percent)

civilians 18 years and older in the United States were veterans of past and current conflicts or have served during periods of peace. Approximately 65,000 green card holders served in the military. According to the Pentagon, many of them do not ever become citizens but rather remained legal residents or other designation that allow them to legally live and work in the US. Some have been deported back to their countries of origin after having committed petty crimes such as writing bad checks, petty drug offenses or driving under the influence (Tobia, 2015). According to Tobia, the DoD does not count how many veterans have been deported, but experts who study the issue say the number is in the thousands, and that veterans have been deported to more than 25 different countries. A small number of undocumented immigrants have a chance to serve in the military and gain legal status under the "Dreamers" category. The new rules expand an existing program allowing recruiters to target foreign nationals with high-demand skills in rare foreign language expertise or specialized health care training, as was made possible by the Obama Administration's Deferred Action for Child Arrivals (DACA). Immigrants bring their cultural idiosyncrasies, mores, practices and beliefs with them no matter where they go, even in the US military with its own unique culture. Despite this, there is no data available on the breakdown of STI/HIV-infected foreign-born veterans in the military and how immigration impacts their knowledge, attitudes and sexual behaviors.

The racial composition of veterans was as a whole, more likely to be non-Hispanic White compared to non-veterans and ethnic diversity of the veterans decreases as veterans age. Although older veterans are predominantly non-white, younger veterans reflect the diversity of the military today (US Census, 2011; Zong & Batalova, 2019). Immigrants have a long history of serving in the US armed forces, dating back to the 1840s and comprised 20% of the force during the Civil War (Zong & Batalova, 2019). The Migration Policy Institute (Zong & Batalova, 2019) reported that there are approximately 530,000 US veterans of the armed forces residing in the United States. Immigrants account for 3% of the almost 19 million of these, of whom 1.5 million were born to an immigrant parent. While the share of Veterans who are foreign born is much

lower than the immigrant share of the overall population (14%), veterans with an immigrant parent composed a larger share than the first generation (8%). The breakdown of the top five countries of birth for immigrant veterans is as follows: Mexico (16%); Philippines (13%); Germany (6%); Canada (6%); and Haiti (3%). Other countries are India, Dominican Republic, Italy, China and the United Kingdom.

Identification with regard to race and ethnicity revealed that more than half of the foreign-born veterans considered themselves as Hispanic (30%); or Asian (22%); and 34% self-identified as White. This is in contrast to US-born veterans who identified themselves as White (80%); followed by 11% as Black; 6% as Hispanic; and 1% as Asian. Women accounted for a slightly higher share among immigrant veterans than the native born at 11% versus 8% born in the US. Immigrant veterans tend to be married (73%) compared with those born in the US (65%) and their divorce rate was lower (7% versus 15%) than among US-born veterans. Overall, immigrant veterans tend to outperform US-born veterans on educational attainment, labor participation, higher income households, and regardless of their nativity, immigrant veterans were less likely to be in poverty.

Studies among civilian populations have demonstrated that immigrant women tend to have a higher risk for STI/HIV. Despite the above findings, however, no study has explored this phenomenon among immigrant women veterans and their sexual behaviors. Gagnon, et al. (2009) asserted that despite the vulnerability of women during the process of migration from one country to another, few studies had explored their HIV/AIDS or STI KAP in relation to women who migrate to western industrialized countries. These researchers found that, after exploring the Canadian literature, when migrant women's KAPs regarding STIs and HIV/AIDS are considered together with the power dynamics surrounding them during all phases of migration, it becomes clear that they are at increased risk for STIs and HIV/AIDS for many reasons. These reasons include ". . .lower status in home and host countries; isolation and poverty; high rates of rape, sexual abuse, and exploitation; and separation of families leading to risky sexual behavior by

partners." (p. 11). There are 340 million cases of curable STIs yearly on a global scale and in low-income countries STIs/HIV is one of the top five complaints for which women seek healthcare (WHO, 2013). Migrants have demonstrated an increased propensity for these problems during and after migration, which is directly related to the fact that in many cultures, men have more dominant roles within sexual relationships, including decisions concerning when and how sexual activities will occur (Gagnon et al., 2009).

Omorodion, et al. (2007) asserted that their study findings revealed ". . .establishing residency in a modern developed society does not eliminate the influence of patriarchal and oppressive cultural values, norms and beliefs that subordinate women and make them powerless." (p. 435). They concluded from the results that culturally entrenched gender inequalities may increase the risk of STI/HIV infection among African youth residing in Canada as there was widespread acceptance of men having multiple sex partners. Similar behavior among young women led to negative stereotyping, especially when women insisted on safe sex practices, whereupon they were labeled as "HIV transmitters" by men who did not want to engage in such behaviors. The link between religiosity and sexual behavior also placed young Moslem women at high risk when they opted for anal sex to maintain their virginity, thereby preserving the main qualification that would render them suitable for marriage. Results also indicated that sexual behavior of young people was an embodiment of both individual and community agencies, such that their actions were as much a product of their cultural heritage as that of their new society of residency.

Immigration and migration compound the spread of STI/HIV. Isolation and lack of health care among immigrant populations impede STI/HIV testing, treatment, and prevention efforts (Center for HIV Law and Policy, 2014). Archibald (2007) in her nascent study about knowledge, and attitudes towards HIV/AIDS among Caribbean African-American youth noted that ". . .migrants are especially vulnerable to HIV because of their isolation, insecure jobs and living situations, fear of government services and lack of access to sexual and reproductive care." (p.

66). She went on to state that this situation is further compounded by immigrants who are likely to be exposed to abuse by multiple sex partners because of undocumented status. Archibald (2007) also posited that health behaviors are highly compromised as immigrants face enormous challenges such as language and cultural barriers, low education, lack of health insurance, poverty, fluid or illegal immigrant status, and dependence on welfare, placing them at risk for abuse. It must be noted that immigrant veterans appear to fare better than other immigrants, but theory-guided studies are necessary to explore these factors in this population. Recognizing that cultural idiosyncrasies exist among immigrant groups, the PAHO, CDC and WHO all advocate the need for culture- and gender-specific research, and interventions for ethnic minorities to decrease the spread of HIV/AIDS (www.PAHO.org; www.cdc.gov), because cultural traditions and practices may prevent or facilitate spread of STI/HIV.

It is necessary to examine the data more closely, conduct culture specific research to close identified gaps, report the findings, and reduce stigmatization, while providing culturally specific interventions to prevent the spread of the disease among vulnerable communities including female Veterans. The current body of the research in this area has examined the impact of the disease among various groups. However, no study has examined these factors from the perspective of female Veterans' sexual behaviors and practices and the factors that would predict high risk sex among them.

Interpersonal Relationship Factors Within the Military and STI/HIV Transmission

The prevalence of sexual violence in the US military cannot be overstated with 34% of women and 6% of men in the armed forces reporting such experiences (LeardMann, et al., 2013; Street, et al., 2008). High military service trauma (MST) rates have serious implications for the family as stress levels increase and relationship dynamics worsen. Research has substantiated that, in many cases veterans tend to suffer from PTSD which, in turn, affects their physical and psychological well-being and hinders their daily functioning (DoD, 2004; DoD, 2009; Goyal, et al., 2012; Satcher, at. al, 2012; ACOG, 2012; Williams & Bernstein, 2011). The American

College of Obstetricians and Gynecologists (2012) reported that, for military service members returning to civilian life, IPV is a major concern in their relationships. Returning to civilian life may mean unemployment, domestic violence related to the effects of PTSD, or other mentally debilitating conditions that place veterans at risk, resulting in troubled, disintegrated relationships after deployment.

Sexual dysfunction and inability to have children may also strain relationships, especially if they result from MST. Turchik et al. (2012) conducted a study of over 400,000 returning men and women veterans of the Iraq and Afghanistan Wars, in which more than half of the sample reported having experienced at least one completed sexual assault. The study revealed that even one sexual assault was associated with long-term sexual problems such as painful intercourse. Women with a history of sexual assault were also less likely to report an emotionally satisfying relationship with their partner. Another issue that may directly impact relationships is the presence of STIs resulting from MST or sexual indiscretion in the military. The latter may result in lack of trust, lack of disclosure and the transmission of STIs knowingly or out of fear even though no study exists to substantiate this condition. Studies have, on the other hand, demonstrated that the presence of IPV limits women's negotiation capacity to refuse sex or use condoms, with a high potential for lacerations and tears during forced sex (Decker et al., 2009, 2011; Wingwood & DiClemente, 1997; Wingwood & DiClemente, 2000).

Pew Research findings reported by Morin (2011) corroborates these previous findings, demonstrating that the return to civilian life for military service personnel is difficult. Morin (2011) also explored factors as to why some veterans have a hard time readjusting or transitioning to civilian life. The researcher analyzed attitudes, experiences and demographic characteristics of 1,853 veterans living in the United States to identify factors that independently predict whether transition will be difficult or easy for them to return to civilian life. Results indicated that while 72% of those surveyed reported an easy time readjusting to civilian life, almost a third (27%) found it difficult. The latter number jumped to 44% among veterans who served in the post 9/11

era. Veterans with certain characteristics had an easier time re-entering civilian life if they: 1) were religious (24 points), 2) had served as an officer (10 points), 3) understood their missions (10 points) and 4) were college graduates (5 points). Those who had the most difficulty readjusting had experienced a traumatic event (-26), had been seriously injured (-19), post-9/11 Veterans who were married while serving (-15), post-9/11 veteran (-15), served in combat or knew someone who did (-7) and someone who had been injured (-6).

Mental disorders also hamper interpersonal relationships among veterans. According to the VA (n.d.) research shows that 25 to 30% of veterans of the wars in Iraq and Afghanistan reported symptoms of a mental disorder. Mental illness, if left untreated, can result in long-term challenges for victims, their families and the community. Post-traumatic stress disorder and TBI are among the most frequently diagnosed mental disorders for veterans, and some PTSD symptoms are more common in women than in men. Women are more likely to be nervous, guarded, have trouble feeling emotions, avoid things that remind them of the trauma and more likely to develop long-lasting PTSD after a trauma. The National Health Care for the Homeless Council (2012) reported that 81 to 93% of women veterans' experience PTSD.

The VA also states that home life struggles are common and can include marital and caregiver stress; elder abuse or neglect; problems with parenting; and difficulties with anger management, resulting in failed relationships and marriages, sometimes leading to homelessness. The Council further reported that "women veterans in the following sub-groups were noted to be at an increased risk for VHA homeless program use in comparison to men: ages 26-35 years, 100% service-connected disability rating, having PTSD diagnosis, and residing in northeast locations" (National Healthcare for the Homeless Council, 2012, p. 2).

Supporting the previous findings, a report noted that though " many women return from wartime deployments stronger and without significant health problems, many others suffer from unique post-war health care needs such as multi-organ systemic injuries associated with blast exposures (including mild-to-moderate TBI)" (Disabled American Veterans, n.d., p. 12). The

report specifies that these women also suffer from other physical health concerns such as chronic musculoskeletal pain, headache, dizziness, difficulty concentrating, respiratory conditions, gastrointestinal conditions, chronic multi-symptom illness and other unexplained symptoms. Among the most prominent health care needs reported are a variety of mental health conditions, including PTSD, generalized anxiety disorders, depression, suicide, substance abuse and sleep disorders. Such difficulties when combined with readjustment challenges, contribute to functional impairments, difficulty in educational and occupational performance, and discontent in family and social relationships. These difficulties can build on and worsen already existing mental health problems or may trigger a further decline in mental status.

Interpersonal violence is defined as "the intentional use of physical force or power, threatened or actual, against another person or against a group or community that results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation" (WHO, 2017). This is different from IPV in that this type of violence may be perpetrated against anyone. It may involve family, partner, child, community, acquaintance, or a stranger. It also involves crimes committed against property. This is a social challenge that damages or destroys meaningful, interpersonal relationships and erodes circles of support among veterans, resulting in social isolation or marginalization. Though these factors may be related to PTSD, TBI or the stress of combat or military life, it is not known how they impact the sexual behaviors of female Veterans, especially if they are caregivers. Some forms of interpersonal violence affect women Veterans, active duty women, and women living in the U.S. overall more than men (Cramer, 2016). As discussed earlier, with regard to intimate partner violence, more than one in every three women (35.6%) and more than one in every four men (28.5%) in the United States report experiencing rape, physical violence, and/or stalking by an intimate partner in their lifetime (Black, 2011; Black, et al., 2011). Slightly more than a third (33%) of female Veterans report experiencing intimate partner violence in their lifetime (Gerber, et al., 2014) and one in every four children experience family violence during their childhood (Finkelhor et al.,

2011; Gerber, et al., 2014; Hamby et al., 2011) a finding that has legal implications, including children being removed from the home.

Interpersonal violence includes emotional, physical, sexual, stalking and threats of violence and it can happen to anyone, no matter the age, income, race, ethnicity, culture, religion, or disability. Murders and serious personal harm have resulted from interpersonal violence. Suicide rates among Veterans are much higher than among civilians due to the presence of weapons in the home and the effects of traumatic brain injury (TBI) and PTSD on their fragile psyche (Dardis et al., 2016; Markowitz & Watson, 2015; McCarthy et al., 2009; Weiner et al., 2011; VA, 2016). There were 218 domestic murders in the U. S. military between 1995 and 2004 (Donohoe, n.d.). Elbogen et al. (2010) outlined dispositional factors (younger age and hyper-masculinity); historical factors (history of pre-deployment violence, deployment, captivity during service, and criminal activities); clinical factors (substance abuse, PTSD, mental illness); and contextual factors (unemployment of one partner, female Veterans with civilian husbands or partners) interact to provide the foundation for violence.

Clearly more research is necessary to explore these phenomena and how they inform or not inform the sexual risk behavior and STI/HIV among female Veterans. Murdoch and Nichol (1995) also found that even though their study revealed that sexual harassment and domestic violence were common occurrences for female Veterans, and attempted and completed sexual assaults rates were 20 times higher than in other government workers and considerably higher than in the general population, only one-fifth of the respondents in their study recalled ever being screened for domestic violence by their physicians.

Rank, Self-esteem, and Women Veterans

Rank in the military is consistent with power, level of accountability and responsibility. A search of the literature to find peer reviewed study articles related to rank and sexual behavior in the military revealed very few such studies in the United States. Buchanan, Settles and Woods (2008) utilized feminist analyses of Double Jeopardy and the Cult of True Womanhood, to

examine race, rank, sexual harassment frequency, and psychological distress for Black and White female military personnel (n = 7,714). Study results indicated that White women reported more overall sexual harassment, gender harassment, and crude behavior, while Black women reported more unwanted sexual attention and sexual coercion. Enlisted women reported higher rates of each subtype than officers. Black enlistees reported more sexual coercion than White enlistees, and enlistees reported more than officers of all races. Black women reported more psychological distress after gender harassment than White women, and enlisted women reported more distress following gender harassment, unwanted sexual attention, and sexual coercion than officers. Although Black officers were less distressed at low levels of sexual coercion, as coercion became more frequent, their distress increased significantly; and at high levels, all groups were similarly distressed. This study, though important, did not analyze the rank of the perpetrators, a variable that could have added more depth in relation to the culture of social dominance, if it exists, in the US military. This is certainly a gap to be explored further.

Another study by Sadler, et al. (2017) examined military leadership behaviors and the risk of military sexual assault among Reserve, National Guard, and Active Component servicewomen in nondeployed locations. The ranks examined were junior enlisted, noncommissioned officer, and commissioned offer. The study investigators used the Social Ecological Model as a heuristic framework for understanding the complex interplay between individual (e.g. prior victimization), relationship (e.g. rank), community (e.g. nondeployed), and societal factors (e.g. command climate). Additional covariates created in the study were individual factors, including socio-demographics (age, race, education, employment, marital status) and military variables (currently serving, branch, service, deployment history).

Researchers categorized the rank relationship factor by pay grade: COs (O1–O6), NCOs (E5–E9), and junior enlisted personnel (E1–E4). The total sample was 1,337 participants, of whom 177 servicewomen (13%) experienced sexual assault in the military (SAIM) in nondeployed locations. Findings indicated that negative leader behaviors were associated with

increased assault risk, at least doubling servicewomen's odds of SAIM. Noncommissioned officers allowed others in their unit to make sexually demeaning comments. Leader behavior frequencies were similar, regardless of service type. Negative leadership behavior risk factors remained significantly associated with risk of SAIM even after adjustment for competing risk. Noncommissioned and commissioned officer factor scores were highly correlated ($r = 0.849$). These findings led researchers to conclude that "leadership remains a powerful sexual violence risk factor" (Sadler et al., 2017, p. 155). Though not borne out by this study, the implication is that leadership rank may exert influence on women veterans' sexual behaviors and concomitant risk for STI/HIV infection.

Self-esteem is defined as "confidence in one's own worth or abilities; self-respect" (New Oxford Dictionary of English, 2010, eBook) and in the domain of behavioral health, self-esteem is a marker of psychological health. The nature of being in the military affords one confidence, worth in one's abilities, and self-respect but certain experiences in the military can negatively impact one's self-esteem. Kintzle et al. (2016) found that over 80% of both groups of veterans in their study (that is, having served before or after the September 11, 2001 terrorist attack) reported positive perceptions of themselves as veterans. Only 6% of pre-9/11 and 8% of post -9/11 veterans believed they would have been better off if they had not joined the military. When asked about how they believed civilians viewed them, their responses were more negative. Slightly over two-thirds of both groups reported that civilians did not understand the problems veterans face. Another 50% of both groups reported that civilians did not appreciate the sacrifices veterans had made for the country, while 45% reported that their military skills were often dismissed. These are important findings that predispose veterans to feelings of worthlessness, anger, and shame; and can result in depression, anxiety, murder and suicide as well as sexual risk-taking behaviors. Many reported feeling so ashamed that they did not reveal their military status to friends, civilians, or employers for fear of being judged. Data from the Chicagoland study was not

analyzed from the perspective of gender; consequently, no specific results were reported for women veterans.

Atrocities that have been elucidated regarding MST, substance use and abuse, suicide, domestic and intimate partner abuse, depression, general physical, and psychological health issues among women veterans (ACOG, 2012; Street et al., 2008), bring one to question their impact on women veterans' sexual behaviors and self-esteem. Research has also demonstrated that sexual assault among women reservist veterans almost a decade later, was associated with more readjustment problems after discharge (Street et al., 2008). Such types of abuse have long-lasting psychological and physical sequelae, often resulting in PTSD and severe assaults to self-confidence. Based on the fact that a significant number of women in the military experience sexual abuse, psychological trauma and domestic violence, and are challenged in reintegrating into society, it is highly likely that self-esteem issues figure prominently in daily functioning for many.

Klein et al. (2010) found self-esteem to be associated with a variety of risky sexual practices such as a high number of sex partners; likelihood of having multiple sex partners; illegal drug use and condom use self-efficacy. Though this study was conducted among young adult ecstasy users in Atlanta, Georgia, findings have implications for women veterans. Even so, little research exists that explores their mental health and functioning (Carroll Chapman & Wu, 2014).

A study underwritten by the International Sexuality Description Project (ISDP) with researchers Chatard et al. (2009), was conducted to examine the relationship between self-esteem and suicide in 55 nations (including the United States) because suicide is a leading cause of death worldwide. The results indicated that self-esteem scores were systematically and negatively related with suicide rates in all ages and for both sexes. All but two of 27 correlations were significant. The ISDP researchers concluded that suicide rates in all age groups were consistent with the view that self-esteem, as assessed among students in the sample, provided a reliable

indication of the national self-esteem level. The findings overall provided evidence to support the predictive validity of self-esteem scores in relation to suicide.

Carroll Chapman and Wu (2014) found that suicide rates were higher among women veterans than among women in the general population. They also found that substance use may increase the likelihood of suicidal behaviors among women veterans, especially if they had a mental diagnosis. Factors related to the increased rates of suicide among young women veterans were not explored beyond age and deployment status; however, it is logical to theorize that they are multifaceted and include injuries sustained; LGBTQ issues; the burdens of war they and their significant others experienced and difficulty reintegrating into civilian life, as predisposing factors that destroy meaningful relationships, ravage self-esteem and undermine the desire to live, resulting in self-destructive sexual behaviors.

Weiner et al. (2011) found that, contrary to previous research findings women veterans were more likely to complete suicides their male counterpart. They found that more women than men suffered from psychoses (22.7% versus 21%), depression (20% for women versus18.3% men), and suicide was the leading cause of death among women in the sample (25%) and the second leading cause of death among the male decedents in the study (20.6%). Women who used VA services were more likely to commit suicide than those in the general population (McCarthy, et al., 2009). Some researchers have attempted to explain the profound effects of sexual harassment and sexual trauma on women veterans utilizing the theory of learned helplessness, conditioning, resource loss, and loss of control over personal and professional status resulting in low self-esteem (Polusny et al., 2008; Street et al., 2008). Despite these findings, there has been very little or no research on the linkage between self-esteem among women veterans, sexual trauma and PTSD among veterans (Kauth, 2012). It is clear that more rigorous studies are needed to explore how the burdens of war and life in the military affect the self-esteem and self-empowerment traits of women veterans as exhibited in their sexual behaviors.

Ethnic-racial socialization can also impact self-esteem. Brown et al. (2014) explored 262 AAW's safer sex practices and the influence of ethnic-racial socialization and body esteem on such practices. Results indicated significant differences on measures of safer sex practices based on relationship status, and regression analyses revealed that certain paternal cultural practices were negatively related to inquiring about a partner's sexual history. They also found that body esteem was positively associated with a partner's sexual history, including that single women practiced safer sex than married women who were less likely to ask about their partner's previous sexual history (Popoola, 2009). Clearly, negative self-esteem impacts sexual attitude and behavior.

STI/HIV Stigma

The enrollment of women in the military has increased over the years to 11% and 8% of veterans (Carroll Chapman & Wu, 2014); yet there is little or no research focused on women veterans' specific STI/HIV stigma and whether or not it impacts high risk sexual practices among them.

Stigma is a common response, usually negative with concomitant effects, when an individual's diagnosis with an STI, particularly HIV, becomes known. Women veterans are by no means immune to this response and its effects. According to Berger et al. (2001), "stigma is associated with a wide variety of health-related conditions," (p. 518). Stigma may be related to illnesses that have resulted in functional, physical or psychological limitations or from conditions such as asymptomatic HIV. Chollier et al. (2016) assert that there are deep structural factors (laws, policies, access to healthcare); behavioral factors (behaviors or an absence of behaviors having an impact on health or sexuality); and biological factors (biomedical treatment) with ramifications for stigma. There is an entire body of work related to HIV stigma with regard to fear of being rejected among people who have been diagnosed with HIV and STIs beginning in the early 1990s (Herek et al., 2002). These studies demonstrated that most people with HIV who divulged their status were met with mixed reactions (Berger et al., 2001) and the same can be

expected for those with other STIs. Some were rejected and others were supported, hence there is reluctance to disclose STI/HIV status with new encounters, even for treatment purposes (Robinson & Lorenc, 2012). HIV-related stigma may result in depression, anxiety, loss of social support, loneliness, and decreased self-esteem (Berger, et al., 2001; Chollier, et al., 2016; Wagner et al., 2014).

Although most of these stigma exploration studies were related to HIV/AIDS, other scientific inquiries related to other STIs have been conducted but are relatively few in comparison to HIV/AIDS stigma research. Stigma has impeded treatment-seeking for STIs because of the desire for secrecy or the reluctance to disclose the condition to partners (Lichtenstein et al., 2005). Lichtenstein et al. conducted a study among a sample of 250 household residents aged 19 to 50 years of age, mostly African-American and White, who were drawn from the general population. Participants reported that infected persons, per se, should not be stigmatized; however, almost half said that they would seek revenge if they were infected by a partner.

Results indicated that in the Deep South of the USA (Alabama, specifically), stigma emerged more clearly in relation to gender blame. Three-quarters (76%) of the respondents believed that women would be stigmatized, while 56% also believed that men would be blamed for "spreading" STIs. Gender blame was greater if the respondents were churchgoers. Overall, women felt that they would experience more stigma than their male counterparts. With regard to treatment queries, 48% of the respondents said they would delay treatment even if symptoms were present and a third said they would not seek treatment at all, even though 63% said they would know where to go for treatment. The majority would notify their partners themselves but would not provide partner names to the Health Department for notification (Lichtenstein et al., 2005). It must be noted that the more socially disadvantaged women were, the more stigma they experienced in relation to STIs (Wong et al., 2012).

Florom-Smith and DeSantis (2012) reviewed the existing literature on HIV-related stigma and offered the following definition of stigma as:

> . . .the collection of adverse attitudes, beliefs and actions of others against people living with or affected by HIV, which may result in deleterious internalized beliefs or actions taken by persons living with or affected by HIV infection that may result in negative health outcomes. (p. 9)

The University of California San Francisco (UCSF) explored the effects of HIV stigma on prevention and treatment in 2016 and extended the definition to the support network of HIV-infected persons. According to USCF "HIV-related stigma is a complex concept that refers to prejudice, discounting, discrediting and discrimination directed at persons perceived to have AIDS or HIV, as well as their partners, friends, families and communities" (p. 60E). They concluded that those who design, run and evaluate stigma-reducing interventions must include HIV-infected persons. Stigma reduction intervention must include the spread of knowledge about HIV, its transmission and treatment to effectively reduce related stigma.

There have been very few studies with regard to veterans experiencing stigma. Yoon et al. (2012) conducted a study to assess the level of perceived stigma among veterans in care in Washington, D.C. The sample was mixed with 97% men and 3% women, the exact gender proportion of veterans in care in the VA system at the time of the study. More than 50% had a significant other, and 95.2% knew their status upon admission. The survey revealed that 80% of patients actively avoided divulging their HIV status and almost 60% reported often feeling judged as an HIV-infected individual; 41% were actively worried about discrimination and approximately 37% reported having worked hard to keep their status a secret.

In the same study cited above, veterans with a history of depression was reported in 44/87 of all cases (50.6%), and a majority of them (54.5%) were in treatment. Those with depression were more likely to feel judged by others ($p = 0.01$); however, they were not less likely to divulge status. There was a trend towards fewer social supports among those with depression, and therapy only modestly mitigated the perception of feeling judged. Despite these trends, the researchers found that intrinsic factors impacting health and the availability of extrinsic supports

influenced perceptions of disease stigma in hospitalized HIV-infected patients. They also concluded that HIV stigma may be under-reported even among patients in care who are receiving ART. Investigators did not report data based on gender in this study and so one cannot extend these findings to the women veterans in this study. This is a practice consistent with other research strategies related to studies on the health of veterans, bolstering the case for female-Veteran specific scientific inquiries.

HIV stigma is not limited to the United States; it is a global phenomenon (Figueroa, 2014; Tomaszewski, 2012). Figueroa asserts in his review of HIV in the Caribbean that "the strong stigma associated with HIV and homosexuality has helped to drive the epidemic underground, promote risk-taking behavior and prevent the realization of policies and programs that would establish a supportive environment for safe sex" (p. 162). Figueroa also concluded that the high level of stigma in the Caribbean has contributed to lack of status disclosure among individuals living with HIV, as 50% fail to disclose and 60% are among MSM. This is directly related to the fact that in many countries of the Caribbean, MSM, sex work and drug use activities are criminalized. Such individuals are marginalized and have no support systems, thereby creating an environment of unsafe commercial sex, failure to address the needs of sexually active adolescents, and weak policies that continue to propagate discrimination against men who have sex with men (MSM) and gay or transgender men who have sex with men(GTMSM) living with HIV. Figueroa concluded that these stigmatizing practices undermine public health and human rights objectives, resulting in the spread of HIV and other STIs in the Caribbean.

Darlington and Hutson (2016) argue that societal stigmatization of HIV/AIDS is related to assumptions about its transmission and associated behaviors. Stigma plays a substantial role in the psychosocial well-being of people living with this chronic illness, particularly for women in traditionally conservative geographic regions such as the southern United States, an area known for social conservatism. The southern United States holds the highest incidence rate of

HIV infection in the USA and the majority of HIV infected women veterans reside in these states. Darlington et al.'s systematic search of four databases identified 27 relevant scientific articles pertaining to HIV-related stigma among women living with HIV/AIDS in the Southern US. These studies revealed a basic understanding of stigma sources, effects, and stigma-reduction interventions in this population. The researchers also concluded that due to the cultural nature of stigma, further differentiation of stigma in discrete sectors of the South, as well as a dialogue about the moral implications of stigma, is necessary to lay the groundwork for patient-centered interventions to mitigate the destructive effects of stigma experienced by women in this region.

Stigma also contributes to high morbidity and mortality rates as people faced with the diagnosis retreat into positions of hopelessness and helplessness, believing there is no help for them due to the high level of guilt they place upon themselves. Minnick et al. (2016) confirmed these feelings and mindset in their qualitative study conducted to elucidate veterans' perspectives about improving retention in care for those who are living with HIV. They conducted 18 one-on-one interviews and constructed 15 outpatient focus groups with 46 patients living with HIV infection from the Michael E. DeBakey VAMC (MEDVAMC), at the Baylor College of Medicine, Houston Texas. Analyses identified three focus areas for improving retention in care: 1) developing an HIV-friendly clinic environment; 2) providing mental health and substance use treatment concurrent with HIV care and 3) encouraging peer support from other veterans with HIV. Minnick et al. concluded that the qualitative data gathered from veteran patients living with HIV infection confirmed that stigma, motivation and unmet needs are major barriers to HIV care. Giordano et al. (2009) also found that younger age, Black race/ethnicity, CD4 cell count > 350 × 106/L, hepatitis C infection, and illicit drug use were predictive of poor retention in care. Positive perspectives on health, life in general and social support are facilitators of HIV care as perceived among patients having a chronic medical comorbidity and being identified as an MSM were associated with improved retention in care (Giordano et al., 2009). Veterans in this study

suggested practical interventions to improve retention in care, such as informational and normalizing brochures, videos, greater co-localization of services and in-clinic peer support. Efforts to provide positive clinic experiences, peer support and concurrent mental health care should also be pursued because retention in HIV care is an independent predictor of survival (Giordano et al., 2009).

It is clear from the literature that HIV-related stigma is multifaceted but resides in structural, behavioral and biomedical realms. Stigma has been a part of HIV disease since its discovery. The studies on this subject as discussed above have enumerated many negative outcomes for the person living with HIV because it is linked to societal knowledge, attitudes and behaviors about HIV and other STIs. Such attitudes can result in perceived and actual rejection, negative self-concept, adverse emotional reactions, non-disclosure of status and self-destructive behaviors such as engaging in unprotected sexual activity that contribute to the spread of STI/HIV. Education and training for both the people affected by the disease and those caring for them can mitigate these negative effects and result in positive behavioral changes over time.

Healthcare Needs and Barriers to Health Promotion Among Women Veterans

"I just felt like I didn't belong when I came back because people were intimidated by me. I didn't even talk to people about being a Veteran after a point because back then it wasn't a good thing…" The preceding quote was taken from the health and wellness section of the State of Health Report of Veterans in Chicagoland (the metropolitan Chicago area) (Kintzle et al., 2016, p. 23). The study was undertaken as a first ever comprehensive needs assessment of veterans trying to reintegrate into society while having to navigate a complex federal and state system to procure benefits. Kintzle, et al. (2016) reported that the findings in this particular study were consistent with findings among veterans in other parts of the country. The study was supported by the Robert S. McCormick Foundation, Deloitte and Prudential.

A total of 1,824 individuals responded to the survey though 265 did not meet study criteria. The final sample consisted of 1,294 veterans. They were stratified as having served

before 9/11 (63%) or after 9/11 (38%). The sample represented all service branches with the Army representing the majority (48%) of the participants. The majority of both groups were men (pre-9/11 92%, 60 years and older) while the post-9/11 group had 76% men, age 17 to 39. They were also highly educated with 48% of pre-9/11 participants and 55% of post-9/11 participants having at least a four-year college degree.

The post-9/11 veterans reported more difficulty adjusting to civilian life (61%), especially regarding what they would do after the service with regard to health outcomes. Many of them felt they were starting their lives over because they were giving up their military family, and had to make new friends and careers. This study also revealed that many of them felt superior to their civilian counterparts ". . .in terms of terms of values, work ethics, and life experiences, but at the same time felt that their service left them years behind their peers in terms of career and professional development" (Kintzle et al., p. 15). The pre-9/11 group tended to rate themselves higher than the post-9/11 group. Both groups were satisfied with their perception of being a veteran but were struggling with others' perceptions of them. Social connectedness was worse among the post-9/11 group and over 60% of both groups were unemployed when they left the military. Over 50% of the post-9/11 group was working full-time and an unemployment rate of 16-17% existed in both groups at the time of the study. Many did not have housing, and had it not been for friends and relatives they would have been homeless after leaving the military (Kintzle et al., 2016).

Over 70% of both groups rated their physical health as excellent despite reports of symptoms such as pain, headaches, nausea in which the post-9/11 group fared worse than the pre-9/11 group. Headaches, sex pain or problems, back pain, menstrual cramps, stomach pains, chest pain, nausea and gas were twice to three times more prevalent among the post-9/11 women veterans. Similar differences were evident between pre-9/11 and post-9/11 groups, respectively, regarding psychological health for probable PTSD (39.6% versus 20%); probable depression (36% versus 18%); and suicide risk (33% versus 15%). Two times more post-9/11 veterans had a

plan to commit suicide (16% versus 7%) and the same percentages attempted to follow through on their plans. The post-9/11 veterans negatively outperformed the pre-9/11group in almost all the measures. Post-9/11 veterans were also much more likely than pre-9/11 veterans to "…engage in sexual activities with high risk of contracting a sexually transmitted disease (20% vs. 6%), as well as take unnecessary risks to their health (23% vs. 13%) and life (21% vs. 10%)" (p. 35).

Disability is another area in which veterans have been found to outpace civilians. Van der Goes and Snyder (2012) conducted a study to determine the level of self-reported disability among Caucasian and African-American veterans who claimed disability. This was an effort to debunk spurious claims among veterans. The study included all men born between 1940 and 1957 either White or Black. Women were included in this study but were not examined in terms of disability despite the fact that that more disability was reported among women than men (Bureau of Labor Statistics Report, 2015). Despite this the researchers found that ". . .military service raises the disability rate for both study groups" (p. 16) and especially among Blacks. Their overall conclusion was that military service raises the risk of disability among war veterans.

Summary

Military personnel health and barriers to improved health have been studied over the years. Such studies have focused on combat deployment and its association with sexual harassment or sexual assault in a military cohort (Leardmann et al., 2013) and the effects of deployment on the health behaviors in military forces (Pietrzak et al., 2013). Pietrzak et al. revealed that it was combat exposure, not deployment, that affected the health behaviors of military or veteran populations of developed countries serving after the Vietnam War leading to excessive drinking, smoking and body weight gain. This study was a review of longitudinal studies within and outside of the United States. Another study revealed delayed presentation for HIV care among veterans (Ghandi et al., 2007) and showed that these veterans used other VA services before presentation for HIV care by about 3.6 years and six physician visits between first

utilization and HIV presentation. Over 50% of these veterans were Black (Ghandi et al., 2007). The results of this study demonstrate either distrust with, or lack of access to the VA system, highlighting the lack of attention to veteran care even when they are in the VA system (Yano & Frayne, 2011).

Though the Kintzle et al. (2016) study was conducted in Chicagoland, it revealed trends observed in previous studies and demonstrated that the post-9/11 Veterans continue to struggle. Again, researchers did not separate the groups based on gender. Despite the rich data presented, the only gender-specific data for women was directly related to MST, maintaining the gap in the literature regarding sexually risky behavior where women veterans are concerned.

CHAPTER III

METHODOLOGY

Overview

This chapter discusses the methodology utilized to conduct this study. The sample population and setting, characteristics of the sample, operational definitions along with their related instruments and the research design that undergirds this study will be presented in depth. The methodology and procedures that were employed to obtain the sample population, data collection procedures, and data analysis techniques are also described in this chapter. Two-hundred and twenty-one women veterans residing in the State of Florida. Approval was obtained from both the Florida International University's and the Veterans Administration Medical Center's Institutional Review Boards. The protection of human subjects was carefully maintained throughout the study.

Rates of sexually transmitted infection (STI) among women in the military far surpass those of non-military women in the general population (American Sexual Health Association, 2016; Bolan, 2013; Cohen, et al., 2012; Harbertson, at al., 2015) and there is a dearth of gender-specific risk factors for STIs among women veterans (Korzeniewski, 2012; Stahlman, et al., 2014). This raises concerns about high risk sex practices among these women when they transition out of the military and the heightened risks of dangerous STIs, such as the human immunodeficiency virus (HIV), which can suppress immune function, and human papilloma virus (HPV) which can cause cancer. Social Dominance Theory (SDT) (Sidanius & Pratto, 1999) guided this study. It is a theory that focuses on hierarchical structures, group-based inequities and how they influence behavior. The study explored sexual behaviors and STIs in women veterans and assessed factors that predict high risk sex practices among them. The study employed a descriptive correlational research design to address the study aims. Data was collected from October 2018 to December 2019.

The specific aims of this study were to:

1. Examine how women veterans' individual and demographic characteristics (such as age, racial/ethnic background, military experience, and prior experience with abuse); cognitive and behavioral factors (such as safer sex behaviors and STD knowledge); socioeconomic factors and social dominance orientation (SDO) were associated.

2. Explore the degree to which women veterans' individual and demographic characteristics (such as age, racial/ethnic background, military experience, and prior experience with abuse); and, socioeconomic factors predict safer sex behaviors, STD knowledge and SDO.

Research Design

This study used a descriptive, correlational, cross-sectional, non-experimental design to describe high risk sexual behaviors and factors that predict high risk sex practices among 221 women veterans in the State of Florida.

Settings

The recruitment settings for this study included the general veteran population of the State of Florida and a specific Veterans Administration Medical Center (VAMC) in Miami. The target population for this study was 221 adult women veterans in the State of Florida. Florida has one of the largest racially and ethnically diverse veterans' populations in the United States, many of whom are women. Florida also is home to several Veterans Administration (VA) hospitals, and the majority of veterans reside in the southern and central Veterans Integrated Service Networks (VISNs) of the United States. There are also several VA clinics and hospitals in all Florida counties, especially in Miami-Dade, Broward and Palm Beach Counties.

The study was particularly relevant for these settings because of the high rates of STDs, including HIV/AIDS. Florida has the third highest rate of new HIV infections, and seven Florida counties (Miami-Dade, Broward, Palm Beach, Orange, Pinellas, Hillsborough and Duval) are among 50 jurisdictions in the United States with the highest numbers of new HIV cases (Chang, 2019). Florida also has the highest number of people living with HIV (PLWH) in the United

States (Archibald et al., 2019). Miami-Dade County carries the burden of HIV in the state with one of every 85 persons living with HIV (Miami Dade County Health Department HIV/AIDS Fact Sheet, 2018). One in every 31 Black persons are affected by the disease compared to one in every 103 Whites, and one in every 127 Hispanics (Miami Dade County Health Department HIV/AIDS Fact Sheet, 2018). Though men who have sex with men (MSM) are more affected by HIV, women are primarily infected through heterosexual contact, and 26% of people living with HIV/AIDS (PLWH) in Miami-Dade County in 2017 were women. Among women, Black women accounted for 65% of all new HIV cases in Miami-Dade County for the same year. Black women also saw an increase of 5.1% in the prevalence rate among them.

The years between 2015 and 2017 showed HIV infection among Hispanics increased and 30% of all new cases were among them (Miami Dade County Health Department HIV Fact Sheet, 2018). According to the *Sun Sentinel* (Diaz, 2018), the Centers for Disease Control (CDC) found that the per capita infection rate in the city of Miami was 47 per 100,000 while the rate for Fort Lauderdale was 41 per 100,000. These data points were double those of other big cities in the United States, including New York City and Los Angeles. These numbers represent a decrease over the past seven years when HIV/AIDS prevalence rates were 50.3 per 100,000 persons infected in Miami-Dade County, followed by Broward County with 27.8 persons (Bousquet & Auslen, 2014; Florida Department of Health 2012-2014).

The years between 2013 and 2018 showed a 56.6% increase of chlamydia among active duty personnel (Stahlman et al., 2019) and 31,000 men and women veterans were treated for HIV/AIDS (VHA, 2018). According to the VA women veterans treated for HIV/AIDS accounted for 3% of their total in 2007. Based on these STD statistics, Florida was determined to be an ideal setting for a descriptive study such as this.

Sample

A convenience nonprobability sample of 221 women veterans between the ages of 22 and 77 years, who were residents of the State of Florida, participated in the study. Although a

convenience nonprobability sample limits the sample from being a true representation of the target population, this sampling strategy was used to increase the feasibility of obtaining the number of participants required for the study and did not attempt to be representative of all women veterans in the State of Florida.

The inclusion criteria utilized in this study were the best characteristics to yield valid data while minimizing the risk of attrition. Participants were included according to the following attributes:

a. have been enrolled at one point or another in a military branch of the United States (US), including the Reserves,
b. be an adult female (born as a woman and was still a woman at the time of the study or born as a man who identified as a woman after sex reassignment surgery or not),
c. be willing to participate in the study,
d. be able to make decisions for themselves,
e. at least 18 years old,
f. able to speak, write and understand English,
g. physically and mentally healthy enough to participate in study data collection protocols, such as providing informed consent, and
h. be a resident of the State of Florida.

Exclusion criteria for the study included women who:

a. did not speak, write or understand English,
b. had not served in any branch of the military,
c. had physical, cognitive or psychological impediments that prevented reliable and valid participation in the study protocols.

Women veterans were the population of interest in this study because their STI rates are significantly higher than those of non-veteran women in the general population. The ability to read, write, speak and understand English is vital to correctly completing items on the survey

instruments used in this study. Although STIs occur in women of all ages in all sectors of society, women veterans are disproportionately affected, and having a diverse group of women in age, race, and socioeconomic background can make the study results more generalizable.

Power Analysis and Sample Size Calculation

A priori power analysis utilizing G*Power was used to determine that a sample size of 116 women veterans, with an anticipated effect size of .30 or higher would achieve statistically significant differences at the *alpha* level of .05 and a minimum power of .80. Effect size is a set of statistics that indicates the relative magnitude of the differences between means, or the amount of the total variance of the dependent variable that is predictable from knowledge of the levels of the dependent variable (Tabachnick & Fiddell, 2007 in Pallant, 2010). It has also been proposed (Cohen, 1988 in Pallant, 2010) that standard deviation units (small: *r* =.10 to .29; medium: r =.30 to .49; and large: *r* =.50 to 1.0) be used to determine the strength of an association among and between variables. These results should increase the likelihood of achieving statistically significant study results (Polit & Hungler,1999; Polit et al., 2002). Participants' promotion of the study through word of mouth also aided recruitment efforts resulting in a final sample size of 221, far exceeding the number required.

Methods and Procedures

Recruitment and Retention of Participants

The study protocol was reviewed and approved by the Institutional Review Boards (IRBs) of Florida International University (FIU) and the Veterans Administration Medical Center (VAMC), Miami, Florida. The VAMC designated the Primary Care Physician (PCP) in the Women's Clinic as their Principal Investigator (PI) who worked in tandem with the main PI, who was deemed co-investigator at the VAMC. Both will be referred to as "PIs", where appropriate, in this report and when specifically referring to the VAMC PI, it will be designated as PCP-PI. The PIs completed the required Collaborative Institutional Training Initiative (CITI) trainings prior to the start of the study, as well as VAMC specific required trainings. Flyers were distributed for

participant recruitment in the general community. No flyers were distributed at the VAMC. The majority (171) of the participants were recruited from the community and the remaining 50 from the VAMC in Miami. The PI also made contact with several women veterans' organizations in Florida, including a Women's Veterans Club in Jacksonville. Contacts were made with veterans at conferences and through colleagues who had served in the US military.

The PI collaborated with contacts made at the VAMC to advertise and recruit participants (see flyer, Appendix G). However, it was not necessary to use the flyer at the VAMC as word of mouth was effective in advertising the study. Upon VAMC IRB approval, the PI spent approximately two weeks in the Women's Clinic between November and December 2019 and met face-to-face with potential participants for recruitment and study participation. The clinic staff (medical director, nurses, psychologist, nutritionist and receptionists) also assisted in recruiting women veterans at the time of their clinic visits. The Informational Letter *(*Appendix I), instead of a written informed consent form was reviewed with and given to all VAMC participants upon explaining the study.

Participant Screening

Interested participants were contacted by the PI and screened using a survey of five questions on the Participant Screening Form (Appendix A). A determination was made whether or not each potential participant met study criteria, whereupon the PI made arrangements to meet with participants to complete the paper versions of the informed consent (Appendix J, J-1). Participants who completed online surveys were screened via the online version of the Participant Screening Form and based on their responses, they would seamlessly move to the next instrument. The anonymity of participants was protected because no contact information was collected. Those participants who completed online surveys gave the PI their email addresses and or telephone numbers, so that the survey link could be emailed or texted to them. Any participant who expressed interest in being apprised of the study's progress was asked to provide the preferred method of contact. No participant expressed this desire.

Screening at the VAMC

Women veterans visiting the clinic on their appointment days at the Veterans Administration Medical Center (VAMC) in Miami were approached and informed about the study by the VA PCP-PI or the researcher. Those interested in participating in the study were screened for eligibility by the VA PCP-PI using a survey of five questions on the Participant Screening Form (Appendix A). Those who met the study criteria were provided with the *VA Informational Letter* outlining the overview of the study, including relevant information for participants. Informed consent was waived to prevent any inadvertent breach of confidentiality. All surveys at the VAMC were completed on paper. Processes about the precautions that were implemented to ensure that VAMC participants' privacy and confidentiality were protected are described in the data collection section that follows.

Data Collection

Data Collection in the General Community

Women veterans who agreed to participate in the study were screened for eligibility as described in the previous sections. Efforts were made to facilitate their schedules by conducting an initial meeting to explain study materials and screen them for eligibility. Women who decided not to participate were thanked and no further contact was made. Once the PI and the participant agreed on a date, place, and time, the PI explained the study, answered any participant questions or concerns and obtained informed consent. Participants were also provided with a copy of the signed Informed Consent which was then placed in a plain white envelope and sealed. They were then given the survey instruments for completion along with a large, sealable manila envelope for completed surveys. Participants were instructed to place completed surveys in the manila envelope, then seal and return the envelope to the PI. No postage was necessary because participants completed the instruments and immediately returned them to the PI. The PI and participants arranged on a convenient date, time and place, to retrieve the sealed envelopes with the completed instruments if they could not be completed on the spot. The PI secured the

envelopes in a locked, fire-proof receptacle for safekeeping until all data had been collected. Once the surveys were completed, the PI provided the participant with a $10 gift certificate for groceries at a local supermarket.

Participants who wished to complete online surveys were, after verbal screening, allowed to access a link to the survey instruments, sent via text or email. The link was supported by Qualtrics, an online survey platform through Florida International University (FIU). These online surveys were designed to seamlessly proceed from one instrument to the other, starting with the screening form, and then the Online Consent Form and finally through to the Abuse Assessment Screen (AAS). Participants were allowed to review their responses but once submitted, they could not reopen the link and the auto-generated code would pop up. Participants were instructed to make a note of the code and email it to the PI so that they could be remunerated for their participation. The auto-generated code was meant signify verification of instrument completion. The website settings were configured to prevent the storage of any type of identifying information such as computer IP addresses, enhancing anonymity of participant data. The measures undertaken to maintain online anonymity (since the researcher does not know the identity of the participant); privacy (refers to the right of the individual and confidentiality (researcher may know the participants' identities but it is protected from the public); represented the best evidence available at the time (CDC, 2012; Kuzhabekova, 2017; Regmi, et. al., 2016; Saunders et al., 2015).

Data Collection at the VAMC

Along with the FIU IRB, the VAMC IRB approved the study. This particular VAMC clinic was a newly renovated, well-lit, modern, one-stop shop clinic for women veterans. The staff consisted of a primary care team, support and administrative personnel, registered nurses, practical nurses, a gynecology/urology team, a psychologist, psychiatrist, licensed clinical social worker, pharmacist, and maternity care coordinator.

The VAMC IRB approval varied in some ways from the FIU approval in keeping with VAMC policies and procedures. First, only paper surveys were approved for the VAMC population. Second, the following three questions were removed from the Demographic Questionnaire: 1) Question #29 - immigration status; 2) Question #30 – never been tested for HIV; and 3) Question #31- HIV status. Third, the Informed Consent was waived and replaced with an Informational Letter (Appendix I) to participants. Fourth, one of the primary care physicians at the VAMC Women's Clinic had to be designated as the VAMC PI who worked with the study PI who was designated the Co-investigator at the VAMC. The VAMC PI informed scheduled clinic patients about the study and ensured that the co-investigator had a private room for patients who wished to participate in the study. Patients were approached in the waiting room and provided oral information about the study based on the flyer (Appendix G). Participants were given a copy of the Informational Letter and the PIs maintained a copy as part of the survey package. Participants did not sign or give written acknowledgment of receipt of the Informational Letter, again an effort to maintain confidentiality, and anonymity. All questions and concerns were adequately answered by the PIs.

Clinic patients who agreed to participate were screened for eligibility including their veteran status because not all the women who were cared for at the VAMC clinic had served at one time or another in the military; some of them were military spouse beneficiaries of their husbands' VAMC health insurance. Women who were ineligible or decided not to participate were thanked and no further contact was made. Those who met the inclusion criteria and wished to participate were escorted to the private room, usually one of the offices or examination rooms, where the PI explained the study, provided them with the study questionnaires and a blank, sealable nondescript manila envelope. They were then left alone to complete the instruments. The entire process lasted no more than forty minutes while they waited to see the gynecologist, urologist, pharmacist, psychologist or other specialists in the Women's Clinic at the VAMC. Participants were ensured that no identifying information was included on the surveys to maintain

anonymity, privacy and confidentiality. No information that could inadvertently be linked to the participant was entered or collected on the anonymous survey instruments.

Completed surveys were placed in the envelope, and the envelope was sealed by the participant. The participant gave the sealed envelope to the PI or VA-PI, who then placed the sealed envelope into the code-protected, fireproof locked container maintained in the VA-PI's locked office in the clinic. There was also no need for the PIs to follow up with participants because they completed questionnaires at only one time point. The PIs collected no contact information from participants. No participant requested to follow up with the PI, but all of them expressed gratitude that a study focused on them was being conducted. Even so, participants were provided with the PIs' contact information as well as that of the IRB, should they have any questions after the study. A further VAMC IRB requirement, unlike participants in the general community was that VAMC participants were not given a gift certificate of $10 in appreciation for their participation in the study.

Table 1 below shows the major concepts of the study, the specific study measuring instruments, and the reliability and validity of the questionnaires used.

TABLE 1a. Major Concepts and Study Instruments		
MAJOR CONCEPT	**INSTRUMENT**	**RELIABILITY/VALIDITY**
1. Study Participant Screening Form	PI Developed Form to Screen for Participants' Eligibility	N/A
2. Demographics (age, SES, education, race/ethnicity, length of residence in the USA, nationality/country of origin, HIV status)	PI Developed Demographic Questionnaire	N/A
3. Safer Sex Practices	The Safer Sex Behavior Questionnaire (SSBQ,) (DiIorio, Parsons, Lehr, Adame & Carlone,1992)	Cronbach's *Alpha* of .52 to .85; Stability females (r = .63 to .82) than males (r = .35 to .84) Validity: -.34 and .39 for males; -.21 and .27 for females
4. Social Dominance Orientation	Social Dominance Orientation Scale (Pratto, Sidanius, Stallworth & Malle, 1994)	Internal Reliability: .83 (ranging from .31 to .63). Stability: .81 to .72 Validity: r = -.40 to -.53
5. STD Knowledge	STD Knowledge Scale (Jaworski and Carey, 2007)	The STD-KQ demonstrated Internal consistency (*Alpha* = .86) and test–retest reliability (r = .88) over a brief period. Validity: r =.64
6. Abuse in Relationships	The Abuse Assessment Tool – Short Form (AATNP) (McWhinney-Dehaney, 2006).	Cronbach's *alpha* of .93 Item-to-total statistics ranged from .56 to .76; *Alpha*-if-item deleted was .93 or less. Validity: Factor analysis for the AATNP revealed two factors: Factor I: Psychological and Sexual Intimidation and Control; Factor Loadings: 0.46 to 0.82; *Alpha* = .95; Factor 2: Physical abuse and neglect, Factor Loadings: -0.44 to .87; *Alpha* = .92.

Instrumentation

The following instruments were used to collect study data.

1. **Participant Screening Form**

This form (Appendix A) consists of six PI-developed Yes/No questions to ensure that study participants met criteria to participate. Examples of the questions are *I was enrolled at one point or another in a branch of the US Military and I was born a man, but I now identify as a woman and did NOT have a sex change.* There are no reliability or validity indicators available for this instrument.

2. **Demographic Questionnaires**

Each of these instruments (Appendix B & Appendix B1) was a PI-developed questionnaire designed to elicit demographic information such as age, ethnicity, education level, income, HIV status, number of years since diagnosis if HIV-infection, country of origin, immigration status, branch of service and whether or not the respondent had been diagnosed with HIV in the service, among other questions. As indicated earlier, three questions (#29 – Immigration status; #30 – I have never been tested for HIV; and #31 – HIV status) were removed from version B-1 specifically for VAMC participants. The rationale for the special focus on HIV is due to its seriousness, social, psychological and economic burdens associated with this sexually transmitted infection among PLWH.

3. **The Safer Sex Behavior Questionnaire (SSBQ)**

DiIorio et al. (1992) define safer sex practices as sexually related practices that avoid or reduce the risk of exposure to HIV and the transmission of HIV and other STIs. They also revealed that prior to 1980, safer sex was almost exclusively related to condom use and there was rampant deficiency of knowledge about HIV-AIDS. Condoms were difficult to obtain at that time or were irrelevant to women, making it difficult to make meaningful comparisons of behaviors between genders. Researchers advocated for and started the development of broader categorizations and definitions of safer sex behaviors which included assertiveness training, and

avoidance of contact with body fluids, which was supported by the Surgeon General's message to all U.S. households in 1988, at the height of the AIDS epidemic. Kalichman et al. (2001) also studied the relationships among behavioral intentions, self-efficacy, HIV status disclosure decisions and negotiating safer sex practices. The tools available in 1992 were not specific enough to measure the unique concept of safer sex practices or behaviors and so the SSBQ (Appendix C) was developed.

There was no specific theoretical underpinning that guided the development of this instrument. According to DiIorio (1992), the 1988 Surgeon General's (C. Everett Koop, M.D., Sc.D.), message "Understanding AIDS" was the catalyst and blueprint for the development of the SSBQ at a time when condom use was considered safer sex. The Surgeon General (1988) went further in his message to Americans to include other safer sex practices along with condom use, such as avoidance of risky sexual behavior (drinking alcohol, using illegal substances, anal sex, refusing unwanted sex), and interpersonal skills to negotiate unwanted sex. The instrument was first developed with an initial set of 35 items to reflect safer sex practices. After the items had been reviewed by investigators in roundtable sessions (DiIorio et al., 1992), they were later reduced to 27 items, 17 of which were positively worded and 10 negatively worded. Each item was rated on a 4-point scale from 1 to 4 with the terms *never (1) and always (4).* Possible scores ranged from 27 to 108 with higher scores indicating greater frequency of use of safer sex practices (DiIorio et al., 1992). The final version of the instrument was reduced to 24 items after factor analysis revealed three items failed to meet retention criteria, yielding a possible total score of 96.

Psychometric Properties of the SSBQ

Reliability of the SSBQ: There are three major aspects to reliability; internal consistency, stability, and equivalence or percentage of agreement (Waltz et al., 2010). The SSBQ was initially tested with a non-probability, convenience sample of 89 sexually active college freshmen both men and women. The sample was mixed in terms of gender but not ethnically diverse.

Internal consistency was determined by administering the test to both men and women with a Cronbach's *Alpha* ranging from .52 to .84 for men and .52 to .85 for women. The overall Cronbach's *Alpha* was .82, indicating that all the items were important in measuring safer sex practices. According to Waltz et al. (2010), an *alpha* coefficient of .82 is a high *alpha* indicating, "that the test as a whole is measuring just one attribute," (p.150).

Factor analysis was also conducted among male and female samples to explore the underlying dimensions of the instrument in relation to men and women. A second non-probability, convenience sample of 531 sexually active college freshmen was used for factor analyses. Participants were divided into men (330) and women (201) for these analyses. Both samples were generally similar in age and ethnicity. Using maximum likelihood common factor analyses, followed by oblique rotation, the following five factors emerged in both samples:

a. Use of condoms,
b. Avoidance of anal or homosexual sex,
c. Use of assertiveness skills,
d. Avoidance of exposure to body fluids, and
e. Avoidance of risky sexual behaviors.

The highest correlations among men were use of condoms and avoidance of homosexual practices (r = -.20) and use of condoms and avoidance of body fluids (r = -.27). A second-order factor, concern for protection, also emerged after analysis of the inter-factor correlation matrix. Moderate correlations were noted among women between use of condoms and use of assertiveness skills (r = .24) and avoidance of risky behaviors (r = -.39), suggesting that those who were assertive used condoms and avoided exposure to body fluids.

Stability was determined by the test-retest reliability method to evaluate the performance of the instrument over time. This study established stability on two occasions, two weeks apart on an ethnically diverse sample of 100 men (47%) and women (53%) between the ages of 18 and 21. The correlation coefficients were stronger among the women (r = .63 to .82) than men (r = .35 to

.84) among the five resultant factors. Equivalence was completed using three experts to determine inter-rater reliability to evaluate meaning, clarity and uni-dimensionality of the items in the test. A 98% equivalence rate was obtained from each expert and a priori content validity was established because the instrument was based on the Surgeon General's 1988 brochure.

Validity of the SSBQ: Validity refers to the degree to which the instrument measures what it is supposed to measure; hence, the strength of the connection between the concept and the operational definition is the issue to be evaluated (Waltz et al., 2017). DiIorio et al. (1992) used a sample of 174 sexually active, second semester college freshmen to test the construct validity of the total scale. The researchers hypothesized that the SSBQ would negatively correlate with risk-taking behaviors and positively correlate with assertiveness training because previous studies had demonstrated a correlation between certain archetypal personality traits and risk-taking behaviors. These studies were appropriately cited in DiIorio et al. (1992). The SSBQ was also used in tandem with other instruments for comparison, such as The College Self-expression Scale (CSES), and the Risk-taking Questionnaire (RTQ). Separate correlations computed for men and women supported the hypothesis with a total SSBQ predicted at -.34 and .39 for men along with -.21 and .27 for women and each were statistically significant for both groups. This supported the construct validity of the instrument. Men were found to be more assertive with seven factors emerging while women had four factors.

The tool was easy to read, items were clear, unambiguous and easy to understand, requiring less than five minutes to complete the instrument so it was easy to administer, score and analyze. This instrument was appropriate for use in this study because it was directly related to sexual behavior. The study also provided an opportunity to test the instrument on this new population.

Two disadvantages were noted in choosing to use the SSBQ for this study. First, it was originally developed for use among college students. Second, it was difficult to find many studies in which it had been used. Whyte and Dawson (2001) used the SSBQ to measure the sexual

behaviors of AAW living with HIV. This was a comparative study with women who were HIV-negative in which no statistically significant differences were found even though scores were higher in the HIV-positive group.

The SSBQ (1992) was also used in a study to measure the frequency of use of safe sex practices of Indian immigrants living in Australia (Ramanathan & Sitharthan, 2014). The study was part of a larger study of sexuality and sexual health of Indian immigrant men. Among the respondents of the SSBQ (n = 184), 16.8% (n = 31) reported never insisting on condom use during sexual intercourse. One in two men surveyed agreed that it was difficult for them to discuss safe sex issues with their sexual partners. One in two men also reported using alcoholic beverages prior to or during sexual intercourse. The researchers concluded there were no significant differences in SSBQ data among Indian men based on their relationship status.

Another study by Gardner et al. (1998) used the SSBQ to compare the sexual behavior and self-esteem of 81 young women who had positive and negative tests for STDs. Sexually Transmitted Disease-negative respondents consisted of 49 AAWs, while STD-positive respondents consisted of 30 AAWs and two Caucasian women. Findings revealed significant positive correlations between the Rosenberg Self Esteem Scale and the total score of the SSBQ. The STD-negative group exhibited higher self-esteem and practiced safe sex more frequently. Young women with high incomes and a high degree of education also showed a high prevalence of self-esteem. Age was not related to self-esteem or to the practice of safe sexual behavior. The implications of this study in nursing practice include dissemination of information about STDs, discussions with at-risk women related to their susceptibility to infections and assisting women in understanding the adverse consequences of contracting STDs. The current study also compared results of participants who reported an STD with those who did not and the implications for practice remain the same.

Overall, the SSBQ measures the concept of safer sex behavior. The Cronbach *alpha* of the SSBQ in this current study was .60, suggesting that internal consistency was low, which is in keeping with previous research (DiIorio et al., 1992).

4. **The Social Dominance Orientation Scale**

Pratto et al. (1194) developed The Social Dominance Orientation Scale (Appendix D) which was used to assess the level of social dominance orientation (SDO) among participants. As part of a multilevel theory of intergroup relations, SDT posits that an individual's attitude about inequality among social groups in general, or their SDO, interacts with societal and institutional forces to produce and reproduce systems of social inequality (Crawford et al., 2015; Pratto et al., 1994). Individual levels of SDO have been found to predict an array of intergroup attitudes and behaviors over time and across cultures, and that the construct occupies a solid role at the heart of social and political psychology (Lee et al., 2011). The instrument is a 16-item measure of SDO (Pratto et al., 1994) and scoring ranged from -3 *(Very Negative)* to +3 *(Very Positive*). It included items such as, *It's OK if some groups have more of a chance in life than others.* The higher the score, the more one subscribes to group differences and unequal social status in relationships. Most of the research was conducted with the SDO-5 (a 14-point scale) and SDO-6. The SDO-7 scale is the most recent scale measuring SDO and includes two sub-dimensions: dominance (SDO-D) and anti-egalitarianism (SDO-E). These items in this current study were rated on a Likert Scale with scores ranging from *7 = strongly disagree* to *1= strongly disagree*. Items 9 through 16 were reverse-coded.

Psychometric Properties of SDO

Pratto et al. (1994) examined data obtained from thirteen samples to test predictive and discriminant validity, and reliability of the measure because they wanted to elicit statistically significant results that could be applied across a wide range of populations. The participants were 1,952 college students, diverse in gender, ethnicity, and income groups, from both public and private California universities who participated in a study to measure their social attitudes and

personal preferences. Pratto et al. (1994) described SDO in the original study for development of the scale as "an attitudinal orientation," (p. 745) representing negative or positive feelings. The scale item responses were labeled *very positive (7), positive (6), slightly positive (5), neither positive nor negative (4), slightly negative (3), negative (2), and very negative (1).* Questions are asked based on the following instructions, *Which of the following objects or statements do you have a positive or negative feeling towards?* It has been used since 1994 in social and psychological studies (Asbrock et al., 2010; Bratt et al., 2015; Kteily et al., 201; Sibley & Duckitt, 2010; Sibley & Liu, 2010; Sibley et al., 2007a; Thomsen et al., 2010), nationally and internationally in psychology.

Reliability of the SDO

In terms of *uni-dimensionality*, a maximum likelihood estimation test revealed that each of the 16 items was driven by a single construct and had a statistically significant relationship to the latent factor, suggesting that the items appeared to be a unitary construct (Pratto et al., 1994), thereby valid to measure the construct of SDO. With regard to *internal consistency reliability*, all items demonstrated good internal consistency reliability across all samples with an average reliability of .83, with item-to-total reliabilities ranging from .31 to .63. Predictive measures demonstrated that men scored higher on all but two samples than women in SDO scores. SDO strongly and consistently correlated with belief in a number of hierarchy-legitimizing myths (LMs) in the studies completed (Pratto et al., 1994).

Rosenthal et al. (2012) utilized the instrument in their study to measure the level of SDO among men and women with regard to sexual self-efficacy and the decision to take free condoms among a group of undergraduate men and women. The scale demonstrated overall good internal consistency reliability with Cronbach's *Alpha* =.91 for SDO and .78 for sexual self-efficacy. The indirect effect of SDO on sexual self-efficacy for both men and women was significant (women: $p = .03$, men: $p = .01$), suggesting the belief that men should sexually dominate is a mediator of

the relationship between SDO and sexual self-efficacy for both women and men (Rosenthal, et al., 2012).

According to Pratto et al. (1994), the Social Dominance Orientation Scale had a Cronbach's *Alpha* of .83. Rosenthal et al. (2012) reported Cronbach's *Alpha* of .91 for their study, indicating very good internal consistency. The Cronbach's *Alpha* in this study was .94, demonstrating very good internal consistency and reliability, in keeping with previous studies.

Discriminant and Convergent Validity

Discriminant validity is the extent to which the construct being measured is different from other similar constructs (Polit, 1999). Predictive validity relates to how adequately the instrument differentiates between behaviors or performance of participants against a specific future criterion. Sexual dominance orientation correlated with the California Personality Inventory (CPI) Dominance Scale in discriminant validity tests against other personality measures across five samples (Pratto et al., 1994). The researchers found that on average the CPI correlated at .03 with SDO while the Jackson Personality Research Form (JPRF) SDO correlated -.006 (Pratto et al., 1994, p. 751). These results indicated that SDO was independent or different from other personality traits. There was no evidence that SDO was related to other personality dimensions such as extraversion or neuroticism, thereby attaining a discriminant validity. Convergent validity was tested against different varieties of empathy using Davis' (1983) Interpersonal Reactivity Index (IRI). Pratto et al. (1994) found that the Concern for Others subscale was significantly negatively correlated in all samples, with *r* ranging from -.40 to -.53, averaging -.46 (p. 751).

5. **The STD Knowledge Questionnaire**

In developing this scale (Appendix E), Jaworski and Carey (2007) explained that ". . .measuring STD knowledge is important because such knowledge is often identified as a determinant of risk behavior," (p. 558), a finding supported by other social and behavioral theories such as the Theory of Reasoned Action by Fishbein & Ajzen (1975); Health Belief

Model by Becker (1974); and the Information-Motivation-Behavior Skills Model by Fisher & Fisher (1992), which "…assume that internal processes, to one degree or another, determine behavior," (Edberg, 2007, p. 30). Edberg (2007) also contends that such internal processes include calculations, benefit, and expectations related to outcomes. These researchers developed the STD Knowledge Scale as a response to the Healthy People 2010 initiative to decrease STDs in the United States.

Jaworski et al. (2007) concluded that the models available then, whether broadly or narrowly, ". . .did not offer a specific level of STD knowledge to promote protective behavior and reduce risk behavior," (p. 558). They were also concerned that those models implicitly required that individuals possess fundamental STD knowledge to enable them to ". . .estimate their STD risk accurately, understand the modes of transmission, be informed about prevention strategies, identify signs of STDs, appreciate the consequences of infection, and understand STD testing and treatment recommendations" (p. 558).

Existing measures at the time designed for or used with college students did not include the major STD categories and neither were their psychometric and outcome sensitivity properties adequately described (Jaworski et al., 2007). The comprehensive STD Knowledge Questionnaire (STD-KQ) did little to clarify the different STDs, which could have had the effect of minimizing the burden for research participants who had to complete several surveys in the past.

Jaworski et al. (2007) completed a total of five studies for the development and testing of this STD-KQ scale. Study 1. The first was conducted after review of the literature to define, test and develop a pool of items. The researchers recruited 18 men and 22 women to participate in this study and settled on the following STD groups: chlamydia, genital herpes, gonorrhea, hepatitis B, HIV and HPV. Some participants were informed about HIV/AIDS but others were confused about the difference between HIV and AIDS. The focus group data and research review produced 93 items for the STD-KQ.

Study 2. The second study was conducted for expert and known groups evidence review. Participants for the study were three nurse practitioners and three medical doctors who were asked to complete the 93-item STD-KQ and respond to a series of structured questions regarding how well each item matched the test objectives. Items were scored by summing the correct answers. Participants scored between 77-96%. Incorrect responses were scrutinized for scoring errors, level of difficulty, and item construction. Eight items were deleted from the STD-KQ as a result, including six items deemed too technical, and two that could be either true or false. The STD experts' comments and suggestions about item content and construction resulted in additional changes; specifically, twelve other items were reworded to improve the precision of test items. The content of two items were changed to increase the variability of the questionnaire items (Jaworski et al., 2007, p. 560).

The instrument developers conducted a brief pilot (Study 3) study and a fourth larger one to determine the psychometric properties of the instrument. Pilot participants were 50 students (82% women) who ranged in age from 18 to 49 years (M = 27), 52% self-identified as Hispanic and exclusively or predominantly heterosexual. Participants also self-identified as African-American (12%), White (30%), Asian/Pacific Islander (2%), American Indian or Alaska Native (2%), Mixed/Multiracial (16%), or Other (38%). Though small, the sample was diverse. Participants were 391 undergraduate students (84% women) who ranged in age from 18 to 74 years (M = 27) for the large-scale testing. Forty-two percent self-identified as Hispanic. Participants also self-identified as African-American (10%), White (36%), Asian/Pacific Islander (8%), Mixed/Multiracial (14%), or Other (33%). Ninety-six percent described themselves as heterosexual, 3% as homosexual, and 1% as bisexual. Students attended a small group informational session and were then administered the 85-item STD-KQ as well as a brief questionnaire that asked about participants' sex, ethnicity, race, age, year in college, relationship status, and sexual history. A follow up procedure on these two studies was conducted in which questions were deleted, reworded and clarified, based on responses, resulting in 73 items.

Study 4 involved two groups that provided evidence for the sensitivity of the STD-KQ to an STD educational program. The wait-list control group (Group B) served as the test-retest sample and secondary intervention group to measure within-group change. Participants (n = 80) were predominantly women (85%) with a mean age of 26 (*range* = 18 to 74). Thirty-one percent of participants reported their ethnicity as Hispanic. Participants also described themselves as African-American (13%), White (44%), Asian/Pacific Islander (5%), American Indian or Alaska Native (1%), Mixed/Multiracial (8%) or Other (30%). Most participants were exclusively or predominately heterosexual (98%).

Participants were randomly assigned to one of two conditions by group. Group A watched a 30-minute educational videotape that was based on a previously evaluated STD-risk reduction program that had been developed by the researchers, Jaworski and Carey (2001). Group A participants completed the post-test survey that included the STD-KQ immediately following the videotape viewing. Participants in Group B (wait-list control group) then returned to the lab, where they first completed the first post-test survey, and then viewed the 30-minute educational videotape, then completed a second post-test survey.

The test-retest reliability of the 27-item STD-KQ was determined by calculating the Pearson product-moment correlation coefficient. The pre-intervention score (n = 40) of the wait-list control group (Group B) was compared to the first post-test (n = 40) two weeks later. Test-retest reliability was r = .88, $p < .01$. A series of analyses was also performed to assess the sensitivity of the 27-item STD-KQ to the educational program. An analysis of variance (ANOVA) confirmed the equivalency of the groups on the STD-KQ at pre-intervention, F (1, 78) = 2.75, *not significant*. A one-way analysis of covariance (ANCOVA), using the pre-intervention score as the covariate, showed a main effect for group, F (1, 78) = 155.67, $p < .01$. Group A scored higher (M = 23.10) than Group B (M = 15.20). One-tailed t-tests compared the change scores between: (a) the pre-intervention and second post-test, and (b) the first post-test and second post-test assessments to evaluate the effect of the intervention within Group B. Group B

participants scored significantly higher on the second post-test (M = 23.30) compared to the pre-intervention (M = 14.62), t (39) = 11.39, $p < .01$. They also scored significantly higher on the second post-test (M = 23.30) compared to the first post-test (M = 15.20), t (39) = 12.62, $p < .01$.

Study 5 was conducted to obtain evidence of the convergent validity of the STD-KQ through a correlational analysis with an established measure of HIV knowledge. A moderate relationship (r = .30) between the two instruments was expected. The participants were 208 undergraduates (79% women with an age range of 19 to 68, *mean* = 27), 35% of whom reported their ethnicity as Hispanic. They otherwise described themselves as African-American (14%), White (41%), Asian/Pacific Islander (7%), American Indian or Alaska Native (1%), Mixed/Multiracial (11%) or Other (26%). The vast majority (98%) described themselves as heterosexual and 2% as homosexual; 26% reported no sexual partners in the last 6 months, 58% reported one partner, and 16% reported two or more partners.

The researchers reported that interested students attended group survey sessions where they received a detailed explanation of the study and provided written informed consent to participate. This study used the HIV Knowledge Questionnaire (HIV-KQ-18) (Carey & Schroder, 2002), an 18-item inventory that assesses knowledge of HIV transmission, risk reduction, consequences of infection, and testing in addition to the demographic survey and the STD-KQ. The HIV-KQ-18 is internally consistent, stable, and highly correlated with the 45-item version and the treatment outcome sensitivity of the latter is well-established (Carey et al., 1997, 2000, 2004 in Jaworski & Carey, 2007). The convergent validity of the STD-KQ was assessed though a correlational analysis with the HIV-KQ-18. Participants' scores on the instruments correlated using the Pearson product moment correlation coefficient, (r = .64, $p < .01$) (Jaworski & Carey, 2007).

Psychometric Properties of the STD Knowledge Questionnaire

Exploratory and Confirmatory Factor Analyses

Exploratory factor analyses using Pearson correlations resulted in a substantial reduction in the number of items and two factors, (i.e. "General Knowledge" and "Cause/Cure'') which accounted for 18% of the variance. The 2-factor solution was interpretable with 26 items loading ≥ .40 on the designated factors. Approximately 18% of the variance was explained by the two factors and all the loadings were positive with four cross-loadings on the first factor as follows:

Item 4 - Genital Herpes is caused by the same virus as HIV.

Item 6 - Frequent urinary infections can cause chlamydia.

Item 47 - The same virus causes all of the Sexually Transmitted Diseases.

Item 48 - A woman who has HIV can be cured if treated soon after she gets it.

There was one cross-loading on the second factor:

Item – 66 A man who has gonorrhea may have a discharge (pus) from his penis.

The second factor was labeled a cause/cure factor that encompassed cause and cure items and a single consequences item (Item 66), accounted for 18% of the variance.

Twenty-six out of the 73 items were retained in the solution and the factors were moderately correlated. According to Jaworski and Carey (2007), maximum likelihood (ML) factor extraction with direct Oblimin rotation produced a 2-factor solution that represented the best fit and the most succinct explanation of the data, so they replicated the same two factors of the previous solution. The Cause/Cure factor contained items concerning causes of the different STDs and whether or not the STDs could be cured. The General Knowledge factor contained items concerning symptoms, consequences, transmission, prevention and detection and testing. Jaworski and Carey (2007) reported that, as expected, factoring the tetrachoric correlations resulted in a substantial increase in percentage of explained the variance (44%). Twenty-one out of the 26 items were retained in the solution. The factors were internally consistent (Factor 1 α =

.89 and Factor 2 α = .82), were well defined by the items and moderately correlated, suggesting that the factors represented related, yet distinct aspects of STD knowledge.

The confirmatory factor analyses further tested the two-factor model of STD knowledge demonstrating high correlation between the hypothesized model and the final model. These results indicated that the relationships within the model remained and supported the two-factor model of STD knowledge. A final review evaluated the public health value and content coverage. Six items that had performed well in the item analyses but had been eliminated during the factor analyses were returned to the questionnaire ". . .to provide broader coverage of the content area and strengthen the questionnaire's utility. . ." (p. 572). Jaworski and Carey (2007) argued that returning previously rejected items to a questionnaire was not unusual when the rationale was to enhance public health. They cited Kelly, Lawrence, Hood, and Brasfield (1989) who had also retained previously dropped items with the same rationale in the development and testing of the AIDS Risk Behavior Knowledge Scale to support their action.

Reliability

Results of internal consistency and test–retest reliability provided strong support for the reliability of the final 27-item STD-KQ. The STD-KQ demonstrated excellent internal consistency (r = .86), which compared favorably to other HIV-specific measures (Carey, et al., 1997; Carey & Schroeder, 2002; Jaworski & Carey, 2001; Jaworski et al. 2007). The STD-KQ was also stable over a 2-week retest period (r=*.88*) even though this was cited as a limitation to the study.

Validity

Jaworski et al. (2007) reported that construct validity of the STD-KQ was obtained from several sources encompassing input from research, STD experts, and the target population. Items were developed with attention to content and technical quality, reduction in respondent burden, and to increase the internal validity of the questionnaire, a true/false/don't know response format was used. Factor analyses established and validated the questionnaire's two-factor structure.

Both the internal consistency and test–retest reliability of the final 27-item STD-KQ were excellent. The final conclusion is that the STD-KQ demonstrated treatment outcome sensitivity in response to a brief educational program. The convergent validity of the STD-KQ was assessed through correlational analysis with the HIV-KQ-18. Participants' scores on the instruments correlated using the Pearson product-moment correlation coefficient, ($r = .64$, $p < .01$).

According to Jaworski et al. (2007) the STD-KQ Scale has very good internal consistency with a Cronbach's *Alpha* coefficient of between .86 to .88. he Cronbach's *Alpha* coefficient was .95 in the current study.

Scoring

The answer categories for the STD-KQ instrument are *True, False, Don't Know*. Each correct response was awarded one point, while incorrect and *Don't Know* answers were awarded zero points for a total of 0 to 27 points; the higher the score, the more knowledgeable the respondents about STDs and risk reduction strategies related to sexual practices.

6. The Abuse Assessment Tool - Short Form

McWhinney-Dehaney (2006) developed the Abuse Assessment Tool – Short Form (Appendix F) to provide a quick, abuse assessment in clinical settings in Jamaica where anecdotal data suggested that IPV was prevalent, a factor that available empirical data did not substantiate. The tool has a total of eight questions with several sub-sections to completed by participants based on answers provided (see Appendix F). According to McWhinney-Dehaney (2006), the phenomenon was not adequately defined or measured within the island of Jamaica. According to the data collected, 19% of visits to the Accident and Emergency Department (A&E) of the Kingston Public Hospital, Jamaica, for women were directly related to IPV. Thirty percent of the calls to the Crisis Center (CC) in Kingston, Jamaica were directly related to violence against women. These women reported physical and psychological abuse as the main reasons for seeking help (Woman Inc. Summary Report Crisis Center 2006 in McWhinney-Dehaney, 2006). Intimate partner abuse or violence is a precursor to adverse physical and psychological sequelae including

homicide (Njie-Carr, 2014; Iverson et al., 2014). However, women in Jamaica were not being routinely screened for IPV despite anecdotal reports. This particular tool was developed to identify Jamaican women, pregnant or non-pregnant, who were exposed to physical, sexual, psychological, and economic abuse.

McWhinney-Dehaney (2006) first conducted a qualitative study to achieve a better understanding of Jamaican women's experiences of abuse and IPV. McWhinney-Dehaney then constructed the Abuse Assessment Tool (AAT) based, for the most part on the results of the qualitative study and the existing literature on IPV. A pool of items was later developed and those deemed culturally relevant were selected for testing. These items were reviewed by Jamaican IPV experts, followed by a review by three Jamaican women who had experienced abuse to validate the items. The items selected were also reviewed by three judges in the US to determine content validity. The questions were pilot tested in Jamaica, and the questionnaire was field-tested in health and crisis centers in Jamaica.

Two hundred and five non-pregnant or pregnant Jamaican women with or without a history of IPV were recruited to participate in the study. One hundred fifty-five of them were from primary health care facilities in the South East Region of Jamaica; and 50 were from crisis centers in Kingston and Montego Bay. Participants were 18 to 64 years of age with no medical or cognitive diseases to hinder participation. The mean age of the sample was 35.9 with a standard deviation of 11.5 years. The participants' marital status was reported as 38.5% were single; 33.2% were in common law relationships (cohabiting without marriage), and 28.3% were married. Almost 38% of the sample reported less than a high school education, 63% was unemployed, and 91.7% had no insurance coverage. Most (96%) had been in a relationship the year before the study and 66% of them had experienced one or more abusive episodes in their relationship. Participants described their partners as having less than a high school education (25%); 73% had some kind of employment; 40% were unskilled; 20% reported their partners had a history of alcohol use or were described as drunk and another 35.4% reported *ganja*/cocaine use

(35.4%). The short form is the tool of interest and so this section will focus on that form for the purposes of this study.

Scoring

According to McWhinney-Dehaney (2006) the tool may be self-administered or best administered by an interviewer to people of low literacy levels. Total scores on the AAT were determined by summing responses to individual items, with no items reversed scored. The Abuse Assessment Tool scoring was developed to reflect abuse in non-pregnant (AATNP) and pregnant (AATP) women with total possible scores ranging from 0 to 268 on the AATNP and 0 to 264 on the AATP. Higher scores represented serious exposure and a higher frequency or occurrence of the behavior, hence a higher exposure to IPV. A score of two or more on any item suggests exposure to an abusive act for that item. The Likert scale is as follows*: 0 = not applicable; 1 = never occurred; 2 = seldom; 3 = sometimes; 4 = often.*

Psychometric Properties of the Abuse Assessment Tool

Posteriori Content Validity

The content validity index for the AAT was .93. Test-retest reliability of AATNP after 2 weeks was .87, and test-retest reliability of the AATP after 2 weeks was .99 (Factor Loadings: .43 to .94; *alpha* = .98). Factor analyses supported three factors which were *physical, psychological, and economic abuse* with factor loadings of .43 to .94. The first factor accounted for almost 68% of the variance after rotation, *alpha* = .98; the second being *psychological and physical abuse* with factor loadings of .42 to .79; *alpha* = .90; and the third bring *sexual, physical and psychological abuse* with factor loading of .38 to .92; *alpha* = .88 despite a scree plot supporting a two-factor solution.

Internal Consistency Reliability Assessment of the AATNP

Cronbach's Alpha for the AATNP 67-item was .98 and no items were redundant (.80). Corrected item-to-total correlations ranged from .57 to .79 and no items were below the criterion of .30. *Alpha*-if-item deleted ranged from .976 to .977. The tool was revised to remove items that

lowered *alpha* scores (item-to-total statistics were below .50), if they highly skewed endorsements, limited item variance on the AATNP, or did not support the theoretical foundation of the tool.

Internal Consistency of the Revised AATNP

After reduction, 37 items remained on the AATNP. The revised 37-item AATNP had a Cronbach's *Alpha* of .97. Reliability is similar to the original 67-item scale. All remaining analyses were done using the revised 37-item AATNP scale.

Psychometric Properties of the Short Form

A short form of the AAT/AATNP was needed for quick assessment of abuse in the clinical setting. Therefore, 12 items on each scale were selected based on item-to-total statistics; *Alpha*-if-item deleted statistics; and the item's theoretical significance to the construct as originally defined. The AATNP Short Form had a Cronbach's *Alpha* of .93. Item-to-total statistics ranged from .56 to .76; alpha-if-item deleted was .93 or less. Factor analysis for the AATNP revealed two factors: Factor I; Psychological and Sexual Intimidation and Control; Factor Loadings: .46 to .82; *alpha* = .95 and Factor 2; Physical abuse and neglect, Factor Loadings: -0.44 to -0.87; *alpha* = .92.

Overall, the AAT possessed good psychometric properties and a reduction in length did not sacrifice reliability and validity testing (McWhinney-Dehaney, 2006) while remaining culturally reliable and valid and should be of interest to policy makers. The Cronbach's *Alpha* coefficient was .78, a demonstration of good internal consistency of the instrument for this study focused on women veterans in the State of Florida.

Data Management and Analysis Procedures

Data safety and monitoring is a high priority in this study. All quantitative data collected was maintained in a password-protected computer and computerized surveys used Qualtrics, an online survey platform offered through FIU, where indicated. All paper files were maintained in a locked safe, with the combination known only to the research team.

Periodic monitoring was performed randomly, and conclusions of the monitoring reported, as needed, to the dissertation committee and the IRB, where appropriate. Once every month or so, the PI reviewed submitted data to ensure that instruments were being completed. Two amendments were sought from the FIU IRB. The first related to the structure of the electronic surveys which caused participants to go directly to the surveys, bypassing the Informed Consent and the Participant Screening among the first few participants. The matter was immediately corrected and the FIU IRB notified. The second had to do with certain items that were missing from the Demographic Questionnaire at the outset, as marital status, and age discordant relationship questions had been mistakenly omitted from the electronic survey when created by the PI. The omission was reported to the FIU IRB and corrected. No video or videotapes were used in this study. No identifying information was collected from participants.

The FIU IRB recommended that if there were no complaints about this from participants, the study should proceed with the correction. Recommendations that emanated from monitoring activities were adopted by the PI, as appropriate. There was no breach of confidentiality or protocols reported to the FIU/VA IRBs. There was no need to report any adverse events, to the IRBs.

Sexually transmitted diseases exact heavy social, economic, psychological and physical burden on people living with them, so the PI was ready to refer any community participants who suffered any undue trauma related to the study to their PCPs. This was not necessary as there were no reported incidences of trauma. The PI was also ready to call 911 for emergent participant transfer to the nearest hospital to be covered by participants' own insurer in the event of a psychological or physical emergency during interview This also was not necessary. The VAMC participants needing emergent care would have received it from the VAMC; however, there were no reported incidences.

Human Subjects' Consideration

Risks to Human Subjects

Standardized procedures were established in this study and utilized to minimize risks to participants, including risk to confidentiality. The following measures were employed: (1) data was collected anonymously; (2) all paper consents were stored separately from completed instruments to prevent inadvertent identification or linkage; (3) data was stored in locked fireproof, code-protected cabinet file at FIU and at the VAMC; and, (4) only individuals authorized by the IRB (the PIs, and study statistician) were given access to the raw data. All computer databases were password-protected. At the completion of the study, data has been maintained according to the VAMC and FIUs regulations. All publications related to the current study will not name or describe individual participants in an identifiable manner.

Voluntary Participation

Participants were informed that study involvement was strictly voluntary and that they had the right to drop out at any time without any repercussions (see Adult [Online] Consent Forms, Appendix J, J-1). Though this was not a clinical trial, adherence to procedures to ensure the quality of the data and the safety of the participants were maintained. The study was governed by the policies and procedures of both the IRB-FIU and the VAMC.

Informed Consent

After IRB approval from both FIU and the VAMC had been obtained, the PI explained study procedures to participants and obtain informed consent, where appropriate, including all the relevant elements (see Appendices J, J-1). Informed consent included a statement about the purpose of the study, the type of research involved, and the possible risks and benefits to the participants. The PIs ensured that the informed consent process was conducted according to IRB and study guidelines and that informed consent occurred in the format and manner established by the PIs and the approved by the IRBs prior to any data collection or implementation of study

procedures. The eligibility criteria were reviewed, and only eligible participants were enrolled in the study.

Benefits and Risks

The immediate potential risk to participants in the proposed study was minimal. The only potential risk was the possibility of emotional stress that participants might have experienced as they recalled traumatic events while completing study instruments. Should this have happened, participants had the option to withdraw, seek, or be referred for appropriate medical care. The PIs were prepared to read the questions and record their answers if the participants had reading difficulties; however, this was not necessary, thereby averting situations that would have inserted bias into the study. No long range, risks, discomfort, and/or inconvenience were anticipated in the current study. Minimal risk of possible discomfort to the participants was reasonable in relation to the benefits to be obtained in gaining evidence-based information for interventions to reduce STIs among women veterans. No animals were used in this study and no specimens such as blood or other body fluids were collected for analysis as part of the study. There was also no need to access any medical records related to the participants in the study.

It was not foreseen that study participants would experience any harm from the study. However, precautions, as has been explained, were taken as part of the PI's contingency plan. The material being covered was emotionally difficult and, depending on whether or not a participant was in the advanced stage of any STI-related condition, participation in the study could have been physically and psychologically demanding on participants. The consent forms (electronic and paper) included disclosure of potential benefits to participants and society. Participants had the opportunity to express their thoughts and feelings about living with the diagnosis of STD, if applicable, and that they had the opportunity to become advocates if they so desired. They were making a meaningful contribution to society and nursing science, in particular, because findings from the study will be utilized to assist nurses in providing culture- and gender-specific care to this population. Other benefits included emotional satisfaction related

to their contribution to society in a positive and tangible manner, assisting leaders to develop health policies specifically tailored to the needs of women veterans as a result of their participation in this study.

Operationalization of Major Study Variables

Demographic Variables

Age. Age is the participants' self-reported number of years lived since birth. This information will be gathered from one question on the *Demographic Questionnaire*

Age discordant relationship. This is a relationship in which the participant's partner's age is five or more years older than the woman veteran's age. This data point was elicited from one question on the *Demographic Questionnaire*.

Culture. Based on definitions outlined by Merriam-Webster online and Zimmerman (2017), the PI concluded that culture is the sum of the process of how one's beliefs, morals, customs, knowledge and behaviors are learned or acquired by a member of a particular social group. Culture can be influenced by nationality, religion, education, income, race, and occupation. Participants in this study were asked on the *Demographic Questionnaire* to report their cultural identity.

Economic dependence. This is the participants' perception of dependence on a sexual partner to meet their daily living needs, such as food, shelter and clothing and any other basic needs. This was measured based on participants' rating of their level of need from *not at all* to *a great deal* with a question on the *Demographic Questionnaire*.

Education. Education in this study was the reported highest degree or level of education attained by participants. This information was elicited from one question on the *Demographic Questionnaire*. If the participant was home-schooled, that was considered formal education.

Ethnic/racial minority. An ethnic/racial minority is a relatively small part of a population or social group that has a common national or cultural group tradition (*Merriam-Webster Online Dictionary*). This includes belonging to minority groups that do not have a European heritage in

the US. These groups, traditionally, have constituted a numerical minority when compared to the larger, more dominant White population, and include persons of African descent, Hispanic heritage of any race, Asian, or Other Pacific Islanders, native/indigenous American Indian or Alaskan Native, Native Hawaiian and others. A question on the *Demographic Questionnaire* will elicit participants' ethnic/racial minority identity. Participants could have reported multiple races, if they chose. This definition is in keeping with the United States Census Bureau (2018) as mandated by the Office of Management and Budget (OMB, 2018) and both are considered separate concepts. Ethnicity in the US refers to whether or not a person identifies as Hispanic.

Women/Female veteran. According to US Public Law, U.S. Code 38, § 101, "the term "veteran" means a person who served in any branch of active military (Marines, Navy, Army or Air Force) and who was discharged or released therefrom under conditions other than "dishonorable." This includes those who participated or did not participate in war or were in the reserves. Hence, women veterans were those women who identified themselves on the *Demographic Questionnaire* as having served in any branch of the U. S. military or the reserves. This information was elicited and measured based on responses on the *Demographic Questionnaire*. It must be noted that participants were asked whether or not their discharge had been honorable.

History of intimate partner violence/abuse. A woman's self-report of unsolicited, and/or unwelcomed actions against her that are sexual, physical, and/or psychological/emotional, which ended up hurting her constituted a history of IPV/A These actions may include rape, assault or any other act that the woman deems as unwelcomed forced or unsolicited, including adult or childhood sexual abuse. This concept was measured using the *Abuse Assessment Screen* (McWhinney-Delaney, 2006). Intimate partner violence can take a number of forms including physical, verbal, emotional, economic and sexual abuse (Njie-Carr, 2014; Tharp et al., 2014; Terrazas & McWhirter, 2015; Tharp et al., 2016; Tucker et al., 2004). In this study the, Cronbach *Alpha* for this scale was .78.

***Immigrant status*.** The self-reported citizenship US citizenship status of the participants as noted on the *Demographic Questionnaire*.

Income. Income was defined in this study as the reported amount of money earned from working or investment activities. This included money or stipend(s) received from the government or any entity or person on a regular basis for living costs. This was elicited from one question on the *Demographic Questionnaire* in ranges to facilitate response based on the categories outlined by the US Census Bureau for household income 2018.

Level of relationship commitment. Participants' self-reported level of relationship commitment as noted by a range on the *Demographic Questionnaire* from *not at all committed* to *very committed*.

Marital status. Participants' were asked to describe their current legal or common law relationship status. This information was gathered based on responses on the *Demographic Questionnaire.*

Military rank. Participants self-reported highest rank at the time of discharge from the military was elicited from their response to one question on the *Demographic Questionnaire*.

Religious engagement. Participants' self-report of religious engagement was measured on the *Demographic Questionnaire* on a range from *not at all religious* to *very religious*.

Safer sex behaviors. Safer sex behaviors or practices are sexually related behaviors in which individuals engage knowingly or unknowingly, and which prevent the acquisition and/or transmission of STDs. These practices prevent the exchange of semen, blood, vaginal secretions, saliva and other body fluids between intimate partners during sexual activity. These behaviors were measured using the *Safer Sex Behavior Questionnaire* (DiIorio et al., 1992). The Cronbach *Alpha* in this study was .60.

Sexual orientation. According to the *Merriam-Webster Dictionary* (www.Merriam-Webster.com), this is a person's sexual identity or self-identification as well as behaviors related to being bisexual, heterosexual, homosexual, pansexual or transsexual. Participants were asked to

identify their sexual orientation from the following choices on the *Demographic Questionnaire* – heterosexual, lesbian/gay, none, other (specify).

Sexually transmitted disease knowledge. STD knowledge in this study relates to being aware of, internalizing and understanding facts about what constitutes sexually transmitted diseases or infections. This includes behaviors that place people at risk for these infections as well as those behaviors that help to prevent them. This concept was measured by the *STD Knowledge Scale* (STD-KQ) (Jaworski & Carey, 2007). In this study, the Cronbach alpha was .95.

Social dominance orientation. Social Dominance Orientation reflects whether or not one generally subscribes to equal or hierarchical relationships. People who have a higher SDO tend to favor hierarchy-enhancing ideologies and policies, whereas those who are lower on SDO will tend to favor hierarchy-attenuating policies and ideologies (equality). SDO was measured using the *Social Dominance Orientation Scale* (Pratto et al., 1994). Individuals who scored high on this scale would tend to endorse more hierarchy-enhancing ideology and policies and those who scored low would tend to favor more egalitarian relationships. The Cronbach *Alpha* in this study was .94.

Social obligations. Social obligations constitute the participants' self-reported perceived responsibilities in relation to caring for others such as partners, children, parents, friends, other relatives in conjunction with their own responsibilities and obligations in that environment. Social obligations frequently are based on prescribed social expectations, etiquette, tradition or mores (Pratto et al., 1994). The propensity of women to assume responsibility to care for sick family members as well as their own well-being is deemed a social obligation that is generally expected of them. Sometimes these responsibilities cause women to elevate such responsibilities over their own self-care and safety. Failure to respond to such obligations and demands can have negative consequences for the self or significant others. These responsibilities can also derail a person's ability to engage in safe sex. Participants were asked to rate their perceived social

obligation and/or responsibilities on a continuum from *none (0*), no perceived social obligation to *10* (high degree of perceived social obligation) on the *Demographic Questionnaire*.

Data Analysis

The theoretical assumptions of the Social Dominance Theory (SDT) were employed in this study to develop a conceptual framework incorporating SDO and some of the major demographic, cultural and socioeconomic factors of the women in the study. The linkages among study variables were tested using a combination of descriptive statistics, correlations and regression analyses to either support or refute findings. The main focus was to explore the nature of the relationships among variables to test the theory, describe the best predictors of high-risk sexual behaviors and drive future investigations on the topic, as would be consistent with a descriptive correlational study as this is.

The raw data was coded and entered into the Statistical Package for the Social Sciences (SPSS v25. IBM Corp., Armonk, NY). To clean the data, demographic entries for all participants were examined using a combination of descriptive statistics such as frequency distributions, means and standard deviations. Normality of continuous variables was tested using the Kolmogorov-Smirnov and Shapiro-Wilk Tests. Variability was also analyzed to determine the spread or dispersion of the data. This included the computation of frequency distributions, central tendency such as mode, median, and means. Range, and standard deviation, where appropriate, were also computed to reduce, summarize, and describe data obtained from participants. The psychometric properties of each instrument were evaluated, as appropriate. The criterion level for significance was set to an *alpha* of .05. Specific statistical analyses were computed to test the hypotheses outlined below in Aims 1 and 2.

Aim 1 and Hypotheses

Aim 1: Examine how women Veterans' individual and demographic characteristics (age, racial/ethnic background, military experience, and prior experience with abuse); cognitive and

behavioral factors (such as safer sex behaviors and STD knowledge); socioeconomic factors; and, SDO are associated with each other.

Hypothesis 1. Female Veterans (categorical dependent variable) who report a history of IPV (dependent variable) or abuse will have higher SDO scores (dependent variable), and lower SSBQ scores (dependent variable) than those that do not report a history of intimate partner violence or abuse.

a) SDO scores of female Veterans with and without a history of abuse were compared using student independent *t*-tests. Further analyses were conducted to compare the scores of these two groups in terms of their SSBQ scores to determine if there were any differences in their mean behavior scores. The test statistic was the *t*-statistic with a *p*-value <.05 with a moderate or higher effect size (.06 to .14 or higher based on Cohen's d). Power analysis revealed that a sample size of 116 participants could yield significant results.

b) Several stepwise hierarchical multiple logistic regression analyses were conducted among these variables to determine the best predictor of safer sex behaviors among women veterans. The variables with the highest *R*-squared were deemed the most predictive of the behavior. The overall strength of the relationships was determined by the *R*-squared value and whether or not the individual variables made a significant contribution to the predicted relationship. Assumptions of sample size, multicollinearity and singularity, normality, linearity, homoscedasticity and independence of residuals were computed in order to carry out these statistical functions.

Hypothesis 2. There will be a relationship between socioeconomic factors (education, income, economic dependence, minority/racial ethnic status, marital status, rank, immigration status) and women veterans' religious commitment ratings, and social obligations with SSBQ scores, and STD-KQ scores.

Correlation coefficient analyses were conducted to determine the strength and direction of the relationships among these variables. Pearson's Correlation Coefficient was used to test the

strength of the relationships between pairs of continuous variables based on level of measurement for variable pairs, independence of observations, normality, linearity, and homoscedasticity. Analysis of variance was also conducted to test the effect of each independent variable on the dependent variables.

Hypothesis 3. There will be a relationship between SDO scores with SSBQ scores, STD-KQ scores, age at sexual debut and women veterans' current ages. The same statistical approach described above for Hypothesis 2 was used to analyze this Hypothesis.

Hypothesis 4. There will be an inverse relationship between the following variables and SSBQ scores: married or in a committed relationship; perceived economic dependence; perceived religious commitment. A procedure using SPSS 25 bivariate correlations was conducted between these variables to determine the strength and direction of the relationships that exist among each pair of these variables. The same correlational statistics described above for Hypotheses 2 and 3 were used.

Hypothesis 5. There will be a relationship between women veterans' years of active duty and rank at the time of discharge from service with a) SSBQ scores and b) STD-KQ scores; and, c) SDO scores. Procedures using SPSS 25 bivariate correlations were conducted between these variables to determine the strength and direction of the relationships that existed among each pair of these variables, as described above.

Aim 2 and Research Questions

Aim 2: Explore the degree to which women veterans' individual and demographic characteristics (age, racial/ethnic background, military experience, and prior experience with abuse); and, socioeconomic factors predict safer sex behaviors, STD knowledge and SDO.

Research Question 1. To what extent do women veterans' individual and demographic characteristics (age, age discordant relationship, racial/ethnic background, military rank, history of IPV/Abuse, perceived religious commitment and social obligations) predict safer sex behaviors, STD knowledge and SDO?

To determine the best predictor of safer sex behaviors among women veterans, a stepwise hierarchical multiple logistic regression analysis was conducted among these variables. The variables with the highest *R*-squared were deemed the most predictive of the behavior. The overall strength of the relationships was determined by the *R*-squared value and whether or not the individual variables made a significant contribution to the predicted relationship. Assumptions of sample size, multicollinearity and singularity, normality, linearity, homoscedasticity and independence of residuals were met in order to carry out these statistical functions.

Research Question 2. To what extent do women veterans' socioeconomic factors (education, income, rank, minority/racial ethnic status, immigration status, economic dependence), predict safer sex behaviors, STD knowledge and SDO?

A stepwise hierarchical multiple logistic regression analyses were conducted among these variables to determine if socioeconomic factors predicted safer sex behaviors among female Veterans, STD knowledge and SDO. The variables with the highest *R*-squared were deemed the most predictive of the behavior. The overall strength of the relationships was determined by the *R*-squared value and whether or not the individual variables made a significant contribution to the predicted relationship. Assumptions of sample size, multicollinearity and singularity, normality, linearity, homoscedasticity and independence of residuals were met in order to carry out these statistical functions.

Methodological Assumptions and Limitations

There are several assumptions embedded in this current study. The literature has outlined several issues that can limit the generalizability of a research study. First, a small sample size can impact the results, limiting their validity and reliability. Participants, additionally, may not necessarily be representative of women veterans. The fact that the study was focused on women veterans in southern Florida may limit its generalizability to women veterans in other parts of Florida or the United States. Questionnaires are self-reports, so participants may feel the need to exaggerate or under-report behaviors in the hope of appearing favorable to the PI and society

(Leltes et al., 2012). Fisher (2013) demonstrated that ". . . there is something specific to sexual behavior with regard to a differential willingness between men and women to report behavior unless there is pressure to be honest," (p. 401). Questionnaires consequently can introduce bias into the study and render results specious. This is inevitable, as all self-reported surveys come with these inherent flaws. Despite the aforementioned, it is assumed that participants in this study answered study related materials and questionnaires truthfully. Another assumption is that study materials were comprehensible, allowing this sample of women veterans to accurately and truthfully report their sexual behaviors and perceptions to the PIs. There is also an assumption that this group of women has unique sexual practices that will be elucidated through the study's measurement techniques.

The PI designed study processes to diminish bias and increase reliability and validity by utilizing highly tested and reliable instruments as one way of countering bias, along with having a large enough sample. Though only 116 participants were necessary to power the study, it is assumed that the final sample of 221 will enhance reliability and validity of the results. Although participants were volunteers, it is assumed that self-selection would not threaten the validity of the study as a result of the study's research design and methods. It is also assumed that it may not be possible to establish causal relationships due to limitations of the cross-sectional design and a future longitudinal study is needed to clarify temporal and causal relationships.

It is difficult, in summary, to conduct research on human subjects without some bias. It is, therefore, important for research investigators to disclose all possible factors that can be interpreted as impacting the study in one way or another, and control for possible confounding factors with appropriate statistical tests and procedures.

Summary

Despite the high prevalence rates of STIs among women veterans as compared to non-military women, the prevalence of MST and other forms of abuse among military personnel signify that there is a dearth of extant theory-based studies exploring the sexual behaviors of

military women when they transition into civilian life. No study prior to this one has examined the impact, if any, of the military environment on the sexual behaviors of these women. This study theorizes that the male-centered, hierarchical structure of the military can impact the way in women behave sexually when they transition into civilian life, taking into consideration other factors such as age, STD knowledge, education and other variables outlined in this study. Based upon the review of the literature, this study is the first to utilize SDO, an element of SDT, to guide such an inquiry. Women veterans are an understudied population because of their small number. However small the number, women veterans are owed the same importance and priority enjoyed by their male counterparts, especially when it is widely known that women veterans bear the brunt of MST, STIs, adverse reactions to ART, IPV and general disregard for their health.

The study utilized a descriptive correlational design to describe high-risk behaviors and incidence of STIs among women veterans and assess factors that may also predict safer sex practices among them. The study was conducted in the State of Florida, one of two states with the highest number of HIV-infected Veterans in the United States. The IRBs of FIU and the VAMC approved the study. The sample consisted of 221 women veterans, recruited from the State of Florida and a local VAMC. Once participants agreed to participate, they were screened for eligibility. If they met the eligibility criteria, they signed the appropriate consent forms, were provided with study questionnaires that elicited demographic information, safe sex behaviors, STD knowledge, SDO and history of IPV. Statistical analyses included reliability assessments of all instruments and measure to limit threats to internal and external validity. Measures were also implemented to protect participants' privacy, confidentiality and anonymity. Mainly correlations, ANOVA and hierarchical regression analyses were used to determine the ability of the conceptual framework to test for differences and predictors of sexual practices in this sample of women veterans in the State of Florida.

CHAPTER IV

RESULTS

Overview

This study has been designed to describe high risk sexual behaviors and factors, inclusive of socioeconomic factors, that predict such practices as well as the incidence of STIs among a sample of women veterans in the State of Florida. High risk sexual practices are more prevalent among women active duty personnel who experienced military sexual trauma and abuse during childhood. The military spends millions of dollars treating sexually transmitted infections (STIs) and related illnesses that result in functional and cognitive disabilities and unplanned pregnancies for active duty personnel, veterans and those transitioning out of the military. Yet, there is a paucity of theory-based research to explore the factors that would predict safe sex behaviors in women veterans. Despite the high rate of STIs among women veterans, there has also been little research on their safer sex practices to determine possible factors related to the high rates of STIs that exist among them. The results of the data analyses related to this study's hypotheses and research questions are reported in this chapter. A comprehensive report of the demographic characteristics of the sample of 221 women starts the full report of the study's results, followed by related specific aims inclusive of hypotheses and research questions. Significant and non-significant findings related to the study are also discussed with their implications in this chapter and Chapter Five.

Recruitment and Screening of Participants

The State of Florida was the setting for the study recruitment activities. Recruitment sites included universities, colleges, churches, clinics, local businesses, hospitals, women's groups and clubs, as well as conferences and informal gatherings of women and people in general. A variety of techniques, including flyers, email communication, and a snowballing technique were utilized as women referred other women to participate in the study. All women who expressed a desire to participate were screened according to institutional review boards (IRBs) approved study

eligibility criteria. Two hundred and twenty-one women veterans were screened and met eligibility criteria but not all participants completed all the instruments and so results are reported based on the number of people completing those instruments.

Data Analysis Procedures

Study data was analyzed using the Statistical Package for the Social Sciences (SPSS v.25, 2019). Each statistical hypothesis was tested based on a significance level of .05. Calculated reliability statistics for each instrument used in the study were reported in Chapter Three. Normal probability plots and histograms were assessed with skewness and kurtosis to identify outliers and normality of data. Scatterplots were created to identify relationships among study variables. Means, standard deviations, analyses of variance, reliability analyses, linear regression, and Pearson's Product Moment correlations were analyzed based on the nature of the data, specified aims and hypotheses. Missing data occurred randomly, for the most part, and was mainly related to electronic issues in survey design which excluded the Demographic Questionnaire from the online survey package for some participants. Another factor contributing to missing data was the design of the Abuse Assessment Scale (AAS) which seemed difficult for participants to complete correctly or in its entirety. Missing data was, as a result, excluded from the analyses and the number of valid cases reported, when necessary. Despite this, answers for the key variables were sufficient to carry out the necessary statistical analyses for the study. Normality tests, Kolmogorov-Smirnova and Shapiro-Wilk Tests were conducted for selected variables and will be discussed further in this chapter as results are presented.

Description of the Sample

The final sample for the study was 221 women veteran participants. A comprehensive report of the sample's demographic characteristics is presented in Table 1. As is evident from the tables, the total numbers do not add up to the total sample due to missing data. The mean age of the sample was 39.6 with a standard deviation of 12.8 years. Sixty-five of the participants did not disclose their age at last birthday. Women in this sample had attained high levels of formal

education with the majority having attained a college or graduate degree (52.6%). In terms of racial breakdown, most of the women were White (36.6%), followed by Blacks (28.7%), Hispanic/Latino (20.1%) and Other (13.4%). Participants identified themselves as mixed race or did not answer in the category "other." The majority of respondents were also married (37%), had been working full-time, and earned between $25,000 and $74,999 (48.8%). Most (88%) were also US citizens and 50% had served at one time or another in the Army. The sample was diverse in several ways, representing over 19 countries, seven branches of the military, and at least four religious affiliations.

Table 1b.

Study Participant Demographic Characteristics

Variables	**Total (*N* = 221, 100%)**		**M (SD**
	N	%	
Age in years			39.6 (12.8)
Race			
Black	47	28.7	
White	60	36.6	
Native American	1	0.6	
Hispanic/Latino	33	20.1	
Asian	1	0.6	
Other	22	13.4	
Marital status			
Single	40	31.5	
Married	47	37.0	
Divorced	21	16.5	
Widowed	4	4.3	
Living with someone else, not married	12	9.4	
Other	3	2.4	
Highest level of Education			
High School	5	3.0	
Tech School	3	1.8	
Some College	39	23.4	
College	42	25.1	
Graduate	46	27.5	
Postgraduate	32	19.2	
Income per Annum			
<$24,999	43	25.9	
$25,000-$74,999	81	48.8	
≥$75,000	42	25.3	
Country of birth			
Canada	1	0.6	

Variables	Total (*N* = 221, 100%)		M (SD
	N	%	
Colombia	2	1.2	
Costa Rica	1	0.6	
Cuba	1	0.6	
England	1	0.6	
Europe	1	0.6	
Federated States of Micronesia	1	0.6	
France	1	0.6	
Guam	1	0.6	
Haiti	3	1.9	
Honduras	1	0.6	
Ireland	1	0.6	
Jamaica	7	4.3	
Peru	1	0.6	
Puerto Rico	4	2.5	
Switzerland	1	0.6	
USA	129	79.6	
US Virgin Islands	1	0.6	
Venezuela	3	1.9	
West Indies	1	0.6	
Immigration status	1	0.6	
US Citizen	100	88.5	
Naturalized Citizen	12	10.6	
Legal resident	1	0.9	
Employment status			
Working	119	72.1	
Not working	46	27.9	
Amount of time employed			
Full-time	91	73.4	
Part-time	33	26.6	
Branch of Military Served			
Army	82	50.0	
Marine Corps	11	6.7	
Navy	32	19.5	
Air Force	20	12.2	
Coast Guard	9	5.5	
Army National Guard	8	4.9	
Air National Guard	2	1.2	
Active combat			
Yes	66	39.8	
No	100	60.2	
Years served in military			8.6 (7.4)
Dependence for financial needs			
Depend on someone or government	38	23.0	
Partial dependence	57	34.5	
Do not depend	70	42.4	
Caring for family member or someone else			
No	103	61.7	
Yes	64	38.3	

Variables	**Total (*N* = 221, 100%)**		**M (SD**
	N	%	
Social obligation			
No Social Obligation	98	77.8	
Moderate Social obligation	19	15.1	
A lot of social obligation	9	7.1	
Have dependent children			
No	91	54.5	
Yes	76	45.5	
Get care from VA			
No	55	33.1	
Yes	111	66.9	
VA care meets needs			
No	50	32.5	
Yes	104	67.5	
Religious Affiliation			
Christian	116	73.4	
Jewish	8	5.1	
Muslim	3	1.9	
Atheist	2	1.3	
Other	29	18.4	
Level of Religiosity			
Very religious	31	18.9	
Moderately religious	96	98.5	
Not at all religious	37	22.6	
Sexual orientation			
Heterosexual	95	89.6	
Lesbian/gay	5	4.7	
No gender identity	3	2.8	
Other	3	2.8	
Age at first sex in years			17.3 (2.4)
Never been tested for HIV			
Yes	25	21.9	
No	89	78.1	
HIV status			
Positive	7	6.4	
Negative	103	93.6	
Being treated for STD/STI			
Yes	20	12.0	
No	143	85.6	
Not sure	4	2.4	
Age discordance			
Yes	32	37.2	
No	54	24.4	

Note: Total number may not add up to total sample size due to missing data

Sample responses are categorized in themes in relation to to what would make them practice safe sex or high-risk sex (Corbin & Strauss, 2008) and reported in Tables 2-3. The top

four responses regarding safe sex were condom use; Other – not specified; no substance use before, during or after sex; not sharing sex toys; monogamy; and fear of STD/STIs (Table 2). Participants reported in the rank order that the following behaviors could present high risk sexual behaviors for them: "nothing" meaning that nothing would make them practice high risk sex; "trust in relationship," "substance use/abuse," and "don't know."

Table 2

Summary of Participant Themed Responses: Safe Sex Practices

Categories of Responses	**Total (*N*) = 191**	**%**
Missing data	9	4.70
Using condoms	43	22.5
Other	28	14.65
No SU before, during sex	18	9.42
Not sharing sex toys during menstruation/sex	17	8.90
Monogamy	15	7.85
Fear of STD/STI	12	6.28
Birth Control	9	4.70
Abstinence	9	4.70
Asking about sex history	9	4.70
Education	7	3.66
Vagina sex	5	2.61
New Relationship	6	3.14
Being Married	5	2.61

Note: These are categories of the written responses to the question.

Table 3

Summary of Participant Themed Responses: High Risk Sex Practices

Response Categories	**N= 148 (100%)**	
	N	*%*
Nothing	52	34.89
Trust in relationships	22	14.76
Substance Use/Abuse	19	12.75
Don't know	10	6.71
Other	9	6.04
Multiple partners	8	5.36
Mental illness	8	5.36
Monogamy	6	4.02
Engaging in high risk sex without protection	6	4.02

Response Categories	N= 148 (100%)	
Abstinence	2	1.34
Sharing sex toys	2	1.34
Swept up in the passion of the moment	2	1.34
Sexual abuse or rape	2	1.34
Knowledge	1	.67

Note: These are categories of written responses to the question and missing data removed.

Data Analysis and Results

Data analysis results for each of the study hypotheses and research questions for Aims 1 and 2 are presented in this section. Data was examined for violations of any assumptions before performing all statistical analyses. Missing data was excluded pairwise. That is, cases were excluded only if they were missing the data required for specific analyses. Tests of normality were conducted for variables requiring these specific analyses and tests. A Cronbach *alpha* was calculated for each instrument used in this study and they all demonstrated good to very high reliability scores (Table 4).

Table 4

Cronbach's Alphas of Study Questionnaires

Questionnaires	Cronbach's *Alpha*
Safer sex behavior questionnaire	0.603
STD knowledge questionnaire	0.950
Social dominance orientation questionnaire	0.939
IPV	0.780

Findings of study hypotheses are organized and presented according to their associated major aims. Each of the two aims and related hypotheses are restated prior to presenting their associated results to enhance clarity.

Aim 1 and Hypotheses

Aim 1: Examine how women veterans' individual and demographic characteristics (age, racial/ethnic background, military experience, and prior experience with abuse); cognitive and behavioral factors (such as safer sex behaviors and STD knowledge); socioeconomic factors (age,

race, income, education, marital status); and, social dominance orientation are associated with each other.

Hypothesis 1. Women veterans who report a history of (IPV or abuse will have higher SDO scores, and lower Safer Sex Behavior scores than those that do not report a history of IPV or abuse.

General guidelines for the interpretation of independent *t*-tests such as level of measurement, independence of observations, normal distribution and equality of variances were met. The data outlined in Table 5 demonstrates that among this sample of participants the overwhelming majority reported having experienced some kind of abuse (140 versus 78). Independent-samples *t*-tests were conducted to compare the mean SDO and SSBQ scores of women veterans with and without a history of abuse to further understand the phenomenon in relation to SDO and SSBQ scores. Statistics utilized for the analyses were based on cases with no missing data for the variables being explored. SDO and SSBQ scores for each group were compared to each item on the Abuse Assessment Scale (AAS), the measure for IPV. The assumption of homogeneity of variances was tested and satisfied via Levene's *F* Test (F =.24, p =.62) for equality of variances indicating that the variances were assumed equal.

The results partially supported Hypothesis 1. There was no statistically significant difference between the SDO scores of the women who were abused (M = 33.70, SD = 18.19) and those who were never abused (M = 33.87, SD = 23.06), $t(111) = 0.13$, p =.89. There was also no statistically significant difference between SSBQ scores of those who experienced abuse (M = 65.27, SD = 8.59) and those who were never abused (M = 68.25, SD = 10.10), $t(138) = 1.13$, p =.26.

When scores of specific items on the AAS measuring the IPV were compared to SDO scores, there was one statistically significant result. There was a statistically significant difference in the mean SDO scores of participants with a history of abuse in the last year (M = 34.02, SD = 18.79); and those who did not experience abuse in the last year (M = 24.57, SD = 9.93), t (8.96) =

-.2.27, p =.04. There was no difference in SSBQ means scores for women who experienced, or did not experience abuse, but those who experienced abuse had lower scores on the SSBQ than those who did not. (See Tables 5 and 6).

Other items that did not make a significant difference in SDO or SSBQ scores of participants in this sample included:

1. having experienced emotional, or physical abuse by a partner or someone important,
2. having been abused during pregnancy,
3. having been touched, groped, and/or fondled in the private parts as a child,
4. having experienced forced sex in the past year,
5. having endured economic or financial abuse in the last year, and
6. having experienced financial or economic abuse.

These results partially supported the hypothesis because those who reported abuse had higher SDO scores. None of the other variables made a significant difference.

Table 5

Correlations for Mean Scores Between Women Veterans With and Without History of IPV, Social Dominance Orientation, and Safer Sex Behavior Scores

Variables	Ever emotionally or physically abused by partner or someone important		*t* Tests	df	*p* value
	Yes (*n = 91*)	No (*n = 49*)			
Social dominance orientation score, mean (SD)	3.67 (18.20)	30.00 (10.37)	-0.201	123	0.84
Safer Sex Behavior scores, mean (SD)	65.30 (8.56)	69.00 (9.46)	0.429	126	0.66
	In the last year, hit, slapped, or otherwise physically hurt by someone				
	Yes (*n = 22*)	No (*n = 106*)			
Social dominance orientation score, mean (SD)	34.02 (18.79)	24.57 (9.93)	-2.277	8.963	0.04*

Safer Sex Behavior scores, mean (SD)	65.06 (8.64)	65.28 (7.34)	0.067	121	0.94
	Including pregnancy, ever been hit, slapped, kicked, or otherwise physically hurt by someone				
	Yes (*n = 69*)	No (*n = 68*)			
Social dominance orientation score, mean (SD)	33.40 (18.57)	33.06 (15.35)	-0.071	119	0.94
Safer Sex Behavior scores, mean (SD)	65.64 (8.46)	64.11 (8.44)	-0.691	122	0.49
	Ever touched, groped, and/or fondled in your private parts when child				
	Yes (*n = 59*)	No (*n = 70*)			
Social dominance orientation score, mean (SD)	33.69 (18.36)	36.50 (22.64)	0.298	118	0.76
Safer Sex Behavior scores, mean (SD)	65.44 (8.63)	69.75 (7.41)	0.984	119	0.32
	In the past year, anyone forced to have sexual activities				
	Yes (*n =12)*	No (*n = 2*)			
SDO score, mean (SD)	34.11 (19.50)	55.00 (12.72)	1.416	9	0.19
SSBQ scores, mean (SD)	65.20 (11.99)	64.00 (5.65)	-0.134	10	0.89
	In the last year, abused financially or economically				
	Yes (*n = 24)*	No (*n = 90*)			
SDO score, mean (SD)	33.45 (18.90)	34.27 (17.29)	0.138	111	0.89
SSBQ scores, mean (SD)	65.36 (8.73)	63.30 (6.27)	-0.728	113	0.46
	Ever abused you financially or economically				
	Yes *(n = 42)*	No *(n = 73)*			
SDO score, mean (SD)	34.31 (18.78)	36.22 (18.10)	0.293	109	0.77
SSBQ scores, mean (SD)	65 (8.61)	61.75 (4.97)	-1.051	112	0.29
	Overall				
	Yes (*n =140*)	No (*n = 38*)			
SDO score, mean (SD)	33.70 (18.19)	33.87 (23.06)	0.026	130	0.98
SSBQ scores, mean (SD)	65.27 (8.59)	68.25 (10.10)	1.130	138	0.261

Note: P value corresponds to independent samples t-test. Total number may not add up to total sample size due to exclusion of cases that were missing.

Table 6

Total Responses for Abuse Assessment Scale

Variables	Total (*N* = 221, 100%)	
Ever emotionally or physically abused by partner or someone important,	*N*	*%*
Not applicable	1	0.7
Never	49	34.8
Seldom	31	22.0
Sometimes	35	24.8
Often	25	17.7
In the last year, hit, slapped, or otherwise physically hurt by someone		
Not applicable	7	5.2
Never	106	79
Seldom	9	6.7
Sometimes	10	10.7
Often	3	2.2
Including pregnancy, ever been hit, slapped, kicked, or otherwise physically hurt by someone		
Not applicable	19	13.9
Never	68	49.6
Seldom	19	13.9
Sometimes	23	16.8
Often	8	5.8
Ever touched, groped, and/or fondled in your private parts when child		
Not applicable	4	3.0
Never	70	52.6
Seldom	21	15.8
Sometimes	28	21.1
Often	10	7.5
In the past year, anyone forced to have sexual activities		
No	2	14.3
Yes	12	85.7
In the last year, abused financially or economically		
Not applicable	11	8.8
Never	90	72.0
Seldom	7	5.6
Sometimes	16	12.8
Often	1	0.8
Ever abused you financially or economically		
Not applicable	9	7.3
Never	73	58.9
Seldom	14	11.3
Sometimes	21	16.9

Variables		Total (*N* = 221, 100%)	
	Often	7	5.6
Overall			
	No	38 (21.3%)	21.3
	Yes	140 (78.7%)	78.7

Note: p-value corresponds to independent samples t test, chi-square test or Fisher's exact test
Total number may not add up to total sample size due to missing data

There were other findings related to abuse that warrant reporting. Sixty-five percent of the participants reported a history of emotional or physical abuse by a partner or someone important to them compared to thirty-five percent (35%) of the participants who reported never having been emotionally or physically abused by a partner or someone important to them. Even though 78% reported not having been hit, slapped, or otherwise physically hurt by someone in the last year, almost 20% reported having experienced the same in the last year. Although 53% did not experience childhood sexual abuse, 45% reported having been sexually abused as a child. These results demonstrated that women veterans in this sample experienced a high rate of emotional, physical and sexual abuse (79%), compared to those who did not (21%), though these results were not statistically significant.

Hypothesis 2. There will be an association between: a) socioeconomic factors (education, income, economic dependence, minority/racial ethnic status, marital status, rank, immigration status); and b) women veterans' religious commitment ratings, social obligations/responsibilities with SSBQ scores, and STD-KQ scores.

Both correlations and ANOVA were utilized because of the nature of the variables to elucidate the relationships outlined in Hypothesis 2a. Correlations indicate that there is a relationship between variables and it is often used to explore the relationship among a group of variables; they do not, however, indicate that one variable causes the other (Pallant, 2010; Rumsey, 2016). General guidelines exist for the interpretation of correlations for positive and negative relationships: .1 to .29 indicates a weak relationship; 0.30 to .49 indicates a moderate relationship; and 0.5 to 0.69 represents a strong relationship, while 0.70 to 0.9 and 1.0 is a perfect

correlation. Pearson's Product-moment Correlation Coefficient was used to test the relationship between socioeconomic factors (education, income, economic dependence, minority/racial ethnic status, immigration status), women veterans' religious commitment ratings, and social obligations/responsibilities with SSBQ scores, and STD-KQ scores. Equality of variance was tested using Levene's Test.

Statistically significant positive associations were observed between safer sex behavior scores and level of religiosity (r = .25, p <.01). This meant that as level of safer sex behavior scores increased, level of religiosity scores increased also, and vice versa. There was also a statistically significant negative correlation between STD Knowledge scores and level of religiosity (r = -.18, p<.01), indicating that as STD Knowledge scores increased, level of religiosity scores decreased, and vice versa. These results partially supported hypothesis 2a.

Simple bivariate correlation analyses were conducted, demonstrating statistically significant relationships between education and race (r =.16, p =.04); income and education (r =.34, p = <.01) and SSBQ scores and religiosity (r =.25, p =.03). In order to produce a more rigorous analysis, a mixed between subjects analysis of variance (ANOVA) was conducted to further assess the impact of socioeconomic factors (education, race, income, immigration status, economic dependence, marital status, and rank at the time of discharge from service) on STD Knowledge and SSBQ scores. One-way ANOVA was used when there were three or more groups for comparison (rather than two or more groups).

There were statistically significant interactions between and within variables in their association on SSBQ and STD-KQ scores; specifically, education demonstrated a statistically significant association with SSBQ scores (F = 3.89, df = 5, p =.002) as well as on STD knowledge scores (F = 2.43, df = 5, p = .03). Race had a statistically significant association with SSBQ scores (F= 4.89, df = 5, p = <.001). Marital status revealed a statistically significant association with STD knowledge scores (F = 4.15, df =1, p =.04). Income, immigration status, economic dependence and rank did not have a significant impact on STD or SSBQ scores. (See

Table 7). Results indicated a positive relationship between SSBQ scores and STD Knowledge scores. Race was significantly related to SSBQ scores. These results partially supported the hypothesis because education was significantly associated with SSBQ and STD Knowledge scores. The more educated the women, the higher their SSBQ scores. Interestingly, those with high school education had the highest median STD Knowledge scores.

Based on analysis of variance which compared racial groups on SSBQ scores, Native-Americans demonstrated the highest SSBQ scores and this was statistically significant ($p < .001$). Data analysis also revealed significant association between marital status and STD knowledge ($p < .05$). An analysis of variance which compared marital status group on STD knowledge indicated that STD knowledge scores were significantly higher among the women who were married ($p < .05$) (Table 8a).

Table 7

ANOVA F Statistics for Socioeconomic Status on Safer Sex Behavior and STD Knowledge Scores

SES Variable	Sum of Squares	df	Mean Square	F	*p* value
Education					
SSBQ	2.336	5	0.467	3.898	0.002*
STD Knowledge	840.582	5	168.116	2.433	0.03*
Race					
SSBQ	2.864	5	0.573	4.896	<0.00***
STD Knowledge	564.596	5	112.919	1.606	0.162
Income					
SSBQ	0.031	2	0.015	0.115	0.89
STD Knowledge	61.731	2	30.866	0.424	0.65
Immigration status					
SSBQ	0.435	2	0.218	1.598	0.20
STD Knowledge	80.647	2	40.324	0.583	0.56
Economic dependence					
SSBQ	0.07	2	0.035	0.27	0.76
STD Knowledge	329.165	2	164.582	2.314	0.10
Marital status					
SSBQ	0.05	1	0.05	0.361	0.55
STD Knowledge	281.112	1	281.112	4.151	0.04*
Rank					
SSBQ	1.72	8	0.215	1.665	0.11
STD Knowledge	991.13	8	123.891	1.818	0.07

Note: $p = .05$*; $p = .01$**; $p = .001$***; $p = .0001$****

Table 8a.

Safer Sex Behavior Scores and STD Knowledge Scores by Socioeconomic Variable Using ANOVA

Variables	Safer sex behavior scores, mean (SD)	*p* value	STD Knowledge scores, mean (SD)	*p* value
Education		0.002**		0.03*
High School	2.81 (0.12)		16.00 (9.84)	
Tech School	2.29 (0.19)		15.68 (8.14)	
Some College	2.57 (0.31)		11.59 (9.00)	
College	2.84 (0.36)		9.95 (8.09)	
Graduate	2.82 (0.36)		9.89 (7.30)	
Postgraduate	2.67 (0.35)		15.60 (10.26)	
Race		<0.001***		0.16
Black	2.82 (0.31)		10.49 (8.21)	
White	2.55 (0.34)		13.55 (8.49)	
Native American	3.21 (0.34)		20.00 (6.23)	
Hispanic/Latino	2.85 (0.34)		11.73 (9.02)	
Asian	2.67 (0.50)		23.00 (5.88)	
Other	2.83 (0.37)		8.94 (7.08)	
Income		0.891		0.65
<$24,999	2.74 (0.31)		12.23 (8.45)	
$25,000-$74,999	2.73 (0.38)		12.14 (8.94)	
≥$75,000	2.70 (0.37)		10.67 (7.73)	
Immigration status		0.208		0.56
US Citizen	2.65 (0.36)		12.02 (8.21)	
Naturalized Citizen	2.90 (0.40)		11.78 (9.33)	
Legal resident	2.71 (0.34)		21.00 (7.11)	
Economic dependence		0.763		0.10
Depend on someone or govt.	2.71 (0.31)		2.30 (1.15)	
Partial dep.	2.72 (0.33)		2.27 (1.36)	
I do not depend	2.76 (0.41)		1.87 (0.94)	
Marital status		0.550		0.04*
Married	2.62 (0.35)		16.07 (8.23)	
Living with someone, not married	2.69 (0.43)		10.58 (8.20)	
Rank		0.113		0.079
E1-3	2.68 (0.46%)		9.71 (9.91%)	
E4	2.81 (0.24%)		9.49 (7.54%)	
E5	2.74 (0.33%)		12.17 (9.63%)	
E6	2.54 (0.31%)		12.79 (9.46%)	
E7	2.64 (0.46%)		16.64 (9.50%)	
E8	2.68 (0.49%)		11.57 (7.82%)	
E9	2.70 (0.42%)		6.2 (2.95%)	
Other	2.92 (0.40%)		10.32 (7.01%)	

Note: p =.05; p =.01**; p =.001***; p =.0001*****

Hypothesis 2b: There is an association between women veterans' religious commitment ratings and social obligations/responsibilities with SSBQ scores; and STD-KQ scores.

Bivariate correlations were conducted to determine the associations that existed among these variables. Statistically significant positive correlations were observed between SSBQ scores and level of religiosity ($r = .250$, $p < .01$). These results supported the findings from the ANOVA analyses described earlier. Significant negative correlations were observed between STD-KQ scores and level of religiosity ($r = -.175$, $p < .01$). (See Table 8b). Hypothesis 2b was partially supported by a significant positive association between SSBQ scores and level of religiosity, and a significant negative relationship between STD-KQ scores and level of religiosity.

Table 8b.

Correlations for Religiosity, Social Obligation, SSBQ, and STD-KQ Scores

Variable	**1**	**2**	**3**	**4**
1. Level of religiosity	---			
2. Social obligation	.007	---		
3. Safer Sex Behavior scores	.250**	.094	---	
4. STD Knowledge scores	-0.175**	-0.162	-0.163	---

*$p < .05$; **$p < .01$; ***$p < .001$

Hypothesis 3. There will be an inverse relationship between SDO scores with SSBQ scores, STD-KQ scores, age at sexual debut and women veterans' current ages.

Statistically significant positive correlations were observed between SDO scores and age at first sex ($r = .21$, $p < .05$) but significant negative correlations were observed between SSBQ scores and SDO scores *(*$r = -.34$, $p < .01$). A significant positive correlation was also observed between STD-KQ scores and SDO scores ($r = .34$, $p < 0.01$) (See Table 9). The hypothesis was partially supported because as SDO levels increased, SSBQ scores decreased; as age at first sex increased, SDO levels increased; and as Social Dominance Orientation levels increased, STD-KQ scores increased.

Table 9

Correlations for Age, Age at First Sex, SDO, SSBQ, and STD-KQ Scores

Variable	1	2	3	4	5
1. Age	---				
2. Age at first sex	.04*	---			
3 Social dominance orientation scores	-.17	.21*	---		
4. Safer sex behavior scores	-.10	-0.015*	-.343**	---	
5. STD Knowledge scores	-.003**	0.114	.343**	-0.163	---

**p < .05; **p < .01; ***p < .001*

Hypothesis 4. There will be an inverse relationship between the following variables and SSBQ scores: a) marital status; b) perceived economic dependence; and c) perceived religious commitment.

Both ANOVA and simple correlation analyses were conducted to demonstrate the relationships among these variables. There was a positive, statistically significant relationship between SSBQ scores and level of religiosity (r = .25; p = <.001); thus, as SSBQ scores increased, so did the level of religiosity. There was a negative statistically significant relationship between economic dependence and SSBQ scores (r = -.01; p < .01). Economic dependence was more likely to decrease as SSBQ scores increased. Analyses of variance (ANOVA) did not reveal any statistically significant impact of these variables on SSBQ scores (See Tables 10a through10d). These results partially supported Hypothesis 4.

Table 10a.

Correlations for SSBQ Scores by Level of Religiosity

Variables	1	2
1. Level of religiosity	---	
2. Safer sex behavior scores	0.250**	---

**p < .05; **p < .01; ***p < .001*

Table 10b.

Correlations for SSBQ Scores, Marital Status, Religiosity, and Economic Dependence

Variables	1	2	3	4
1. Marital status	---			
2. Level of religiosity	.11	---		
3. Economic dependence	.12	-.10	---	
4. Safer sex behavior scores	.07	.25**	.05	---

*p < .05; **p < .01; ***p < .001

Table 10c.

ANOVA Correlations for SSBQ Scores by Marital Status

Variables	Safer sex behavior scores, mean (SD)	p value
Marital status		.55
Married	2.62 (0.35)	
Living with Someone else, not married	2.69 (0.43)	
Economic dependence		.76
Depend on someone or govt.	2.71 (0.31)	
Partial dep.	2.72 (0.33)	
I do not depend	2.73 (0.35)	

*p < .05; ** p< .01; ***p < .001

Table 10d.

ANOVA Correlations for Marital Status and Economic Dependence on SSBQ Scores

Variables	SSBQ scores, mean (SD)	p value
Marital status		.55
Married	2.62 (0.35)	
Living with Someone else, not married	2.69 (0.43)	
Economic dependence		.76
Depend on someone or govt.	2.71 (0.31)	
Partial dep.	2.72 (0.33)	
I do not depend	2.73 (0.35)	

*p < .05; **p < .01; ***p < .001

Hypothesis 5. There will be a relationship between female Veterans' years of active duty, and rank at the time of discharge from service with a) SSBQ scores, b) STD-KQ scores and c) SDO levels.

Both correlations and ANOVA were conducted to elucidate the impact of these variables on SDO, SSBQ, and STD-KQ scores. A statistically significant negative association was observed between SDO levels and SSBQ scores (r = -.343, $p < .01$) (Table 11a). A significant positive relationship was observed between STD-KQ scores and SDO levels *(r* = .343, $p < .01$). Using ANOVA, the relationship between rank and SDO levels was statistically significant (*F* = 2.44, *df* = 8, $p = .01$); however, rank, years of active duty, and STD-KQ scores were not statistically significant in this analysis. (Table 11b). The Hypothesis was partially supported.

Table 11a.

Correlation for of Years of Active Duty, SSBQ, SDO, and, STD-KQ Scores

Variables	**1**	**2**	**3**	**4**
1. Years of active duty	---			
2. SSBQ scores	-.030	---		
3. SDO scores	-.006	-0.343**	---	
4. STD-KQ scores	.026	-0.163	0.343**	---

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 11b.

SSBQ Scores and STD-KQ Scores by Rank Using ANOVA

Variables	SDO Scores, mean (SD)	*p* value	STD-KQ scores, mean (SD)	*p* value
Rank		0.01*		0.07
E1-3	2.68 (0.46)		9.71 (9.91)	
E4	2.81 (0.24)		9.49 (7.54)	
E5	2.74 (0.33)		12.17 (9.63)	
E6	2.54 (0.31)		12.79 (9.46)	
E7	2.64 (0.46)		16.64 (9.50)	
E8	2.68 (0.49)		11.57 (7.82)	
E9	2.70 (0.42)		6.20 (2.95)	
Other	2.92 (0.40)		10.32 (7.01)	

*$p < .05$; ** $p < .01$; *** $p < .001$

Aim 2 and Research Questions

Research Question #1: To what extent do female Veterans' individual and demographic characteristics (age, age discordant relationship, racial/ethnic background, military rank, history

of IPV/abuse, perceived religious commitment and social obligations/responsibilities predict safer sex behaviors, STD knowledge and SDO?

Findings from multivariate linear logistic regression analyses revealed that, among female Veterans in this sample, there was no statistically significant predictors of safer sex behaviors among the following variables: age, age discordance, race, rank, IPV/abuse or history of abuse, level of religiosity and social obligation. None of these variables significantly predicted STD knowledge. Level, of religious commitment (*Beta* = -.78, *p* = .01) and social obligations (*Beta* = -.57, p = .03) were statistically significant in negatively predicting SDO levels in the adjusted multivariate linear regression model. (See Tables 12a-12c). As religious commitment and social obligations increased, SDO and structured hierarchical social role perceptions decreased.

Table 12a.

Multivariate Logistic Linear Regression Results for Predictors of SSBQ Scores

Independent variables	**Estimates**	**Standard error**	***Beta***	***p* value**
Age	-0.01	0.01	-.12	.43
Age discordance	0.29	0.15	.29	.06
Race	0.03	0.04	.12	.46
Rank	-0.01	0.03	-.02	.85
IPV	-0.18	0.31	-.09	.56
Level of religiosity	0.19	0.11	.26	.09
Social obligation	0.09	0.09	.14	.33
R^2	0.19			
ΔR^2	0.04			

*$p < .05$; **$p < .01$; ***$p < .001$

Table 12b.

Multivariate Logistic Linear Regression Results for Predictors of STD-KQ Scores

Independent variables	Estimates	Standard error	*Beta*	*p* value
Age	-0.03	0.17	-0.03	.85
Age discordance	-3.65	3.52	-0.17	.30
Race	1.31	1.01	0.22	.20
Rank	0.38	0.59	0.10	.52
IPV	-2.31	6.07	-0.06	.70
Level of religiosity	-0.82	2.63	-0.05	075
Social obligation	-3.73	2.25	-0.27	.10
R^2	0.19			
ΔR^2	0.04			

*p < .05; **p < .01; ***p < .001

Table 12c.

Multivariate Logistic Linear Regression Results for Predictors of SDO

Independent variables	Estimates	Standard error	*Beta*	*p* value
Age	-0.03	0.02	-.24	.11
Age discordance	0.41	0.39	.15	.30
Race	0.19	0.13	.24	.12
Rank	-0.06	0.07	-.13	.40
IPV	-0.30	0.80	-.05	.70
Level of religiosity	-0.78	0.31	-.35	.01*
Social obligation	-0.57	0.26	-.32	.03*
R^2	0.21			
ΔR^2	0.05			

*p < .05; **p < .01; ***p < .001

Research Question #2:

To what extent do female Veterans' socioeconomic factors (education, income, rank, minority/racial ethnic status, immigration status, economic dependence), predict SSBQ, STD knowledge and SDO scores?

Multivariate logistic regression analyses were conducted to determine if socioeconomic factors predicted safer sex behaviors among female Veterans' STD knowledge and SDO scores. Education, income per year, rank, race, immigration status, and economic dependence did not significantly predict SSBQ scores. Education, however, was a significant negative predictor of SDO scores (*Beta* = -0.39, p = .01) and STD Knowledge and *Beta* = 1.71, p = .04). Social

dominance orientation scores decreased as education levels were higher and vice versa. STD-KQ scores increased as the levels of education increased. (See Tables 13a-13c).

Table 13a.

Multivariate Logistic Linear Regression for Socioeconomic Predictors of Safer Sex Behaviors Scores

Independent variables	**Estimates**	**Standard Error**	***Beta***	***p* value**
Education	-0.02	0.03	-.07	.55
Income per year	-0.02	0.02	-.13	.31
Rank	0.04	0.02	.28	.11
Immigration status	0.22	0.11	.21	.15
Economic dependence	-0.01	0.06	-.01	.91
Race	0.08	0.02	.36	.10

*$p < .05$; **$p < .01$; ***$p < .001$
Adjusted *R*-squared value = 0.21

Table 13b.

Multivariate Logistic Regression for Socioeconomic Predictors of SDO Scores

Independent variables	**Estimates**	**Standard error**	***Beta***	***p* value**
Education	-0.34	0.16	-.29	.03*
Income per year	0.11	0.07	.23	.11
Rank	0.04	0.07	.07	.58
Immigration status	-0.16	0.37	-.05	.60
Economic dependence	-0.17	0.21	-.11	.42
Race	-0.07	0.09	-.10	042

*$p<.05$; **$p<.01$; ***$p<.001$
Adjusted R-squared value = 0.26

Table 13c.

Multivariate Logistic Regression for Socioeconomic Predictors of STD-KQ Scores

Independent variables	**Estimates**	**Standard error**	***Beta***	***p* value**
Education	1.72	0.88	.25	.04*
Income per year	0.59	0.47	.17	.21
Rank	0.17	0.42	.05	.69
Immigration status	2.58	2.64	.12	.33
Economic dependence	-0.49	1.43	-.05	.73
Race	0.28	0.58	.06	.63

*$p < .05$; **$p < .01$; ***$p < .001$
Adjusted *R*-squared value = 0.22

Missing Data

It was expected that not all the instruments would have been completed because this study involves human participants, hence some data was missing. The PI, therefore, inspected the collected data carefully and ran descriptive analyses to find out what percentage of values was missing for each of the variables studied. The PI also checked to see if the missing data occurred randomly, or whether there was a systematic problem such as a large number of women veterans failing to answer certain questions, such as age or HIV status. The Statistical Package for the Social Sciences v.25 was used to find patterns in any missing data. Some data was missing non-randomly. This resulted from the way in which the electronic portion of the study was structured. The objective was to set up the study instruments so that participants would be guided seamlessly from one survey to the next. The first configuration did not allow for this and so about fifty-six participants could not complete that instrument. All other missing data occurred randomly.

Cases were excluded pairwise for regression analyses for statistical analyses if a variable was missing at least ten percent of its data. This option allowed for the exclusion of cases (persons) only if they were missing the data required for the specific analysis (Mertler & Vannatta, 2010; Pallant, 2010).

Veterans Administration Medical Center Data

Description of the Sample

The sample of women veterans recruited at the VAMC numbered 50 and their data was analyzed as a cohort as well as with the overall sample of 221 participants. They were similar for the most part, except for a few changes highlighted here. The group at the VAMC was younger with a mean age of 36 years and a standard deviation of 15.5 years. This group was also similar in that they were highly educated with either a graduate or college degree (58%); earned $25,000 to $74,999 (59%); comprised mostly of US citizens (75%) and working (61%); at full-time employment (92%). This group was—unlike the overall sample—racially different with the majority (52%) Black or AAW followed by Hispanic or Latino women (25%). Another notable

difference among the VAMC cohort was that most had been in active combat, were single, and two times more likely to note they were not sure if they were being treated for an STI at the time of the survey. A report of the sample's demographic characteristics is presented in Table 14. The total numbers do not add up to the total cohort number due to missing data, as is evident from the table. The sample was also less diverse than the larger sample, representing 11 countries compared to the 19 countries of the larger sample. Most participants in this cohort identified their religious affiliation as Christianity (72%) or Other (28%). Data for the VAMC was not analyzed separately but will be done at a later date and presented to them.

Table 14.

Demographic Characteristics of the Participants at the VAMC

Variables	**Total (*N* = 50, 100%)**
Age in years, mean (SD)	36.4 (10.5)
Race, *n* (%)	
Black	25 (52.08%)
White	7 (14.58%)
Native American	0 (0%)
Hispanic/Latino	12 (25.0%)
Asian	0 (0%)
Other	4 (8.33%)
Marital status, *n* (%)	
Single	20 (41.66%)
Married	7 (14.58%)
Divorced	12 (25.0%)
Widowed	2 (4.16%)
Living with Someone else, not married	5 (10.41%)
Other	2 (4.16%)
Highest level of Education, *n* (%)	
High School	4 (8.0%)
Tech School	1 (2.0%)
Some College	8 (16.0%)
College	13 (26.0%)
Graduate	16 (32.0%)
Postgraduate	8 (16.0%)
Income per Annum, *n* (%)	
<$24,999	14 (28.57%)
$25,000-$74,999	29 (59.18%)
≥$75,000	6 (12.24%)
Country of birth, *n* (%)	
Canada	0 (0%)
Colombia	2 (4.08%)

Variables		Total (N = 50, 100%)
	Costa Rica	0 (0%)
	Cuba	1 (2.04%)
	England	0 (0%)
	Europe	0 (0%)
	Federated States of Micronesia	1 (2.04%)
	France	0 (0%)
	Guam	0 (0%)
	Haiti	1 (2.04%)
	Honduras	0 (0%)
	Ireland	1 (2.04%)
	Jamaica	1 (2.04%)
	Peru	0 (0%)
	Puerto Rico	1 (2.04%)
	Switzerland	1 (2.04%)
	USA	37 (75.51%)
	US Virgin Islands	1 (2.04%)
	Venezuela	2 (4.08%)
	West Indies	0 (0%)
Immigration status, *n* (%)		
	US Citizen	---
	Naturalized Citizen	---
	Legal resident	---
Employment status, *n* (%)		
	Working	30 (61.22%)
	Not working	19 (38.77%)
Amount of time employed		
	Full-time	35 (92.10%)
	Part-time	3 (7.89%)

Total number may not add up to total sample size due to missing data

Summary

Several statistically significant results were demonstrated in this study. Some of them supported the study's theoretical underpinnings, while others did not. These and other findings will be further discussed in Chapter Five. The sample was highly educated, diverse in terms of age, country of origin, educational levels, race, branch of military served, income earned as well in other ways outlined in the Demographics Tables 1 and 14. Ethnic identity was not entered into the analyses because participant responses indicated a lack of understanding of the question with comments such as "what does this mean?" Further analyses in the future will be conducted based on country of origin and other variables.

It was noteworthy that 22% of the sample had never been tested for HIV; however, almost 94% reported that they were HIV negative. The most frequent participant response was regarding what would make them engage in safe sex practices, such as condom use, followed by Other (such as, not being married to a Christian man who loves and respects me; any other human or object, other than my partner), and not using illicit substances before, during, or after sex. In terms of practices participants deemed would prevent high risk sexual behaviors among them, it was again remarkable that the top response was "nothing," signifying that nothing could make them engage in high risk sex. Trust in relationships was the second highest response, indicating that participants would engage in high risk sexual conduct if they trusted their partners.

A summary of the statistically significant positive and negative findings that will be discussed in Chapter Five indicate that there was a statistically significant positive difference in the mean SDO scores of participants with and without a history of abuse in the last year. There were also statistically significant positive associations observed between SSBQ scores and level of religiosity. A statistically significant negative correlation was highlighted between STD-KQ scores and level of religiosity. Statistically significant positive relationships were revealed between education and race; income and education; and between SSBQ scores and religiosity.

There were statistically significant interactions between and within variables in their impact on SSBQ and STD-KQ scores. A statistically significant impact of education on SSBQ scores was evident. Education had a statistically significant positive impact on STD-KQ scores, and race had a statistically significant positive impact on SSBQ scores. Marital status also demonstrated a statistically significant positive impact on STD-KQ scores. Statistically significant positive correlations were observed between SSBQ scores and level of religiosity. Significant negative correlations were observed between STD-KQ scores and level of religiosity.

Statistically significant positive correlations were observed between SDO scores and age at first sex, but significant negative correlations were observed between SSBQ scores and SDO

scores. A statistically significant positive correlation was also observed between STD-KQ scores and SDO.

There was a statistically significant relationship between economic dependence and SSBQ scores. A statistically significant negative association was also observed between SDO levels and SSBQ scores. A significant positive relationship was observed between STD-KQ scores and SDO scores; and the relationship between rank and SDO levels was statistically significant and positive.

The level of religious commitment and social obligations were statistically significant in negatively predicting SDO levels in the adjusted multivariate linear regression model. Education, however, was a significant negative predictor of SDO levels and STD-KQ scores and *Beta*.

CHAPTER V

DISCUSSION

Overview of the Problem

Risky sexual behaviors, intentional or unintentional, result in sexually transmitted infections (STIs). Sexually transmitted infections continue to be a serious health concern in the United States with approximately 20 million new cases reported, and billions of dollars spent yearly, on direct medical costs (Evans et al., 2017). These infections are a serious public health challenge because they result in physical, emotional and socioeconomic consequences to society as well as to afflicted individuals. Public health efforts to reduce STIs have been mainly focused on women because of the ". . . serious reproductive consequences of these infections in women," (Evans et al., p. 791).

Studies have demonstrated that among women military personnel these women engage more frequently in high risk sexual practices compared to the general population (Bolan, 2013; Foreman, 2006; Goyal et al., 2012; Lehavot, et al., 2013; Lehavot, et al., 2014; Workowski & Bolan, 2015; Workowski, 2015). Such behaviors include multiple sex partners; lack of or inconsistent condom use; using alcohol or illicit drugs before, during or after sex; and having multiple concurrent sex partners. Studies have also highlighted that risk factors differ by gender among veterans (Combellick et al., 2019), and the rates among women in the military surpass those of non-veteran women in the general population (American Sexual Health Association, 2016; Bolan, 2013; Cohen, et al., 2012; Harbertson, at al., 2015; Workowski, 2015; Workowski et al., 2015). A review of available literature has revealed that despite this fact few studies have explored gender-specific STI risk factors among military personnel, (Goyal, et al., 2012; Korzeniewski, 2012; Stahlman, et al., 2014).

Research inquiries (Bolan, 2013; Combellick, et al, 2019; Evans, et al., 2017; Goyal, et al., 2012; Lehavot et al., 2014) have revealed certain contributions to high risk sexual behavior in this population, such as reported younger age of first sexual encounter, greater number of lifetime

sexual partners, and higher rates of binge drinking compared to civilians (Hoggatt et al., 2017). Studies have also shown that women veterans are more likely to have been the victims of adult sexual assault with greater severity than civilian women who experienced adult sexual assault (Schultz et al., 2006). Childhood sexual abuse by a parent and for longer periods of time as frequently reported by women veterans (Schultz, et al., 2006), was also noted as antecedent to high risk sexual behaviors. These findings raise concerns about other dangerous STIs such as HIV which can suppress immune function, and HPV which can cause cancer and miscarriages in women.

Little is known about the gender-specific factors that drive women veterans' sexual behaviors despite previous research. Even though theories abound that could help to explain this phenomenon, there is no theory-based study that has attempted to explore the link between the male-centered military environment and its influence or impact on the sexual behaviors of women veterans. The lack of research on women veterans is directly related to the fact that men veterans comprise over 90% of the population of veterans, hence the focus on them. This study is the first to use Social Dominance Theory (SDT) to attempt to explain factors that may predict women veterans' high-risk sexual behaviors and the resultant high rate of STIs among them. Social Dominance Theory (Sidanius & Pratto, 1999) guides the researcher to focus on hierarchical structures concordant with group-based inequities and how they influence behavior.

This study explored sexual behaviors and STIs in women veterans and assessed factors that predicted high risk sex practices among them. The study employed a descriptive correlational research design to address the study aims. Data was collected from October 2018 through December 2019.

The specific aims of this study were to:

1. Examine how women veterans' individual and demographic characteristics (such as age, race, military experience, and prior experience with abuse); cognitive and behavioral

factors (such as Safer Sex Behaviors and STD knowledge); socioeconomic factors; and, SDO were associated with each other.

2. Explore the degree to which women veterans' individual and demographic characteristics (such as age, race, military experience, and prior experience with abuse); and, socioeconomic factors predict safer sex behaviors, STD knowledge and SDO.

Summary of the Research

This study described behaviors and factors, inclusive of socioeconomic factors that predicted high risk sexual such as well as the incidence of STIs among a sample of women veterans in the State of Florida. High risk sexual practices are more prevalent among active duty women and veterans who experienced sexual trauma and abuse in the military and during childhood. This results in a high financial burden to the military which spends millions of dollars treating the STI-related illnesses, functional and cognitive disabilities, and unplanned pregnancies during women's military service and as veterans when active duty personnel transition into civilian society. This study was undertaken to begin to address the gap in the research and lay the foundation for future related studies.

The results of the data analyses related to this study's hypotheses and research questions were reported in Chapter Four. This chapter provides a discussion of the study's findings against the backdrop of the conceptual framework, SDT, and examines the significance, limitations, implications for nursing, and the study's implications for research.

A convenience sample of 221 diverse women veterans was recruited throughout the State of Florida, from veterans' and general clinics, universities, colleges, hospitals and the general population, to participate in this study. The major variables in the study were SDO, STD Knowledge, Safer Sex Behaviors, and IPV/abuse. Other variables such as age, race, immigration status, marital status, education, and economic dependence were also examined in terms of their association to the phenomena interest. Significant findings are summarized in Table 14 along with additional findings from the qualitative responses. Non-significant findings emanating from

the study are summarized in Table 15 and will be also discussed with their implications in this section of this dissertation.

Table 15

Summary of Findings

Hypotheses / Research Questions	Findings
AIM 1 Hypotheses	
Hypothesis 1: Women veterans who report a history of IPV/abuse will have higher levels of SDO, and lower SSBQ scores than those who do not report a history of IPV/abuse.	There was no overall statistically significant difference between the SDO scores of the women who were abused (*M* = 33.70, *SD* = 18.19) and those who were never abused (M = 33.87, *SD* = 23.06), *t* (111) = 0.13, *p* = .89. There was no statistically significant difference between SSBQ scores of those who experienced abuse (*M* = 65.27, *SD* = 8.59) and those who were never abused (*M* = 68.25, *SD* = 10.10), *t* (138) = 1.13, *p* =.26. There was a statistically significant difference in the mean SDO levels of participants with and without a history of abuse in the last year (*M* = 34.02, *SD* = 18.79); and those who did not experience abuse in the last year (*M* = 24.57, *SD* = 9.93), *t* (8.96) = -.2.27, *p* =.04. There was no difference in SSBQ mean scores for women who experienced, or did not experience abuse, but those who experienced abuse had lower scores than those who did not. Having experienced emotional, or physical abuse by a partner or someone important; ever been abused during pregnancy; ever been touched, groped, and/or fondled in the private parts as a child; having experienced forced sex in the past year; economic or financial abuse in the last year; or ever having experienced financial or economic abuse, did not make a significant

Hypotheses / Research Questions	Findings
	difference in SDO or SSBQ scores of participants in this sample.
Hypothesis 2a: There will be an association between socioeconomic factors (education, income, economic dependence, minority/racial ethnic status, marital status, rank, immigration status) and SSBQ and STD-KQ scores.	Statistically significant positive associations were observed between SSBQ scores and level of religiosity (r = .25, p <.01).
	There was a statistically significant negative correlation between STD-KQ scores and level of religiosity (r = -.18, p < .01).
	Statistically significant positive relationships were observed between education and race (r = .16, p =.04); income and education (r = .34, p = <.01); and SSBQ scores and religiosity (r = .25, p = .03).
	Specifically, there was a statistically significant positive association between education and SSBQ scores (F = 3.89, df = 5, p =.002).
	Education had a statistically significant positive association with STD-KQ scores (F = 2.43, df = 5, p = .03).
	Race had a statistically significant impact on SSBQ scores (F = 4.89, df = 5, p = <.001).
	Marital status demonstrated a statistically significant positive association with STD-KQ scores (F = 4.15, df =1, p =.04).
	Income, immigration status, economic dependence and rank did not have a significant association with STD-KQ or SSBQ scores.
Hypothesis 2b: There is an association between women veterans' religious commitment ratings; and social	Statistically significant positive correlations were observed between SSBQ scores

Hypotheses / Research Questions	Findings
obligations/responsibilities with SSBQ and STD-KQ scores.	and level of religiosity (r = .250, p <0.01). Statistically significant negative correlations were observed between STD-KQ scores and level of religiosity (r = -.175, p < 0.01).
Hypothesis 3: There will be an inverse relationship between SDO levels with SSBQ, STD-KQ scores, age at sexual debut, and women veterans' current ages.	Statistically significant positive correlations were observed between SDO levels and age at first sex (r = .21, p < 0.05). Statistically significant negative correlations were observed between SSBQ scores and SDO levels (r = -.34, p < 0.01). A significant positive correlation was observed between STD-KQ scores and SDO levels (r = .34, p < 0.01).
Hypothesis 4. There will be an inverse relationship between the following variables and SSBQ scores: a) marital status; b) married or in a committed relationship, c) perceived economic dependence; and d) perceived religious commitment**.**	There was a positive, statistically significant relationship between SSBQ scores and level of religiosity (r = .25; p = < .001). There was a statistically significant negative relationship between economic dependence and SSBQ scores (r = -.01; p <.01). ANOVA did not reveal any statistically significant association of these variables on SSBQ scores
Hypothesis 5. There will be a positive relationship between women veterans' years of active duty, and rank at the time of discharge from service with SSBQ, STD-KQ scores; and, a negative relationship with levels of SDO.	A statistically significant negative association was observed between SDO levels and SSBQ scores (r = -.34, p <0.01). A statistically significant positive relationship was observed between STD-KQ scores and SDO levels (r = .34, p < 0.01).

Hypotheses / Research Questions	Findings
	Using ANOVA, the relationship between rank and SDO levels was statistically significant (F = 2.44, df = 8, p = .01).
AIM 2	
Research Question #1: To what extent do women veterans' individual and demographic characteristics (such as age, age discordant relationship, racial/ethnic background, military rank, history of IPV/abuse, perceived religious commitment and social obligations/responsibilities) predict SSBQ, STD-KQ and SDO scores?	Religious commitment (Beta = -0.78, p = .01) and social obligations (Beta = -0.57, p = .03) were statistically significant in negatively predicting Social Dominance Orientation scores.
	There was no statistically significant predictor of SSBQ scores among the following variables: age, age discordance, race, rank, history of IPV/abuse, level of religiosity and social obligation.
	None of the above variables significantly predicted STD-KQ scores.
Research Question #2: To what extent do women veterans' socioeconomic factors (education, income, rank, minority/racial ethnic status, immigration status, economic dependence), predict SSBQ, STD-KQ scores and levels of SDO?	Education was a significant negative predictor of SDO levels (*Beta* = -0.39, p = .01) and STD-KQ scores (*Beta* = 1.71, p = .04).
	Education, income per year, rank, race, immigration status, and economic dependence did not significantly predict SSBQ scores.

Discussion of Findings

Intimate Partner Violence or Abuse and Social Dominance Orientation

There was no statistically significant difference between the SDO levels of the women who were abused (M = 33.70, SD = 18.19) and those who were never abused (M = 33.87, SD = 23.06), $t(111) = 0.13$, p = .89. There was a statistically significant difference in the mean SDO levels of participants with a history of abuse in the last year (M = 34.02, SD = 18.79); and those who did not experience abuse in the last year (M = 24.57, SD = 9.93), $t(8.96)$ = -.2.27, p =.04.

These findings partially supported the study's theoretical framework, SDT, which postulates that the higher the level of SDO, the more one is likely to ascribe to unequal relationships. Research has borne out that abuse in intimate relationships is about power dynamics which lay the foundation for abuse (Machel, 2001; CDC, 2016; Nije-Carr, 2014; Tomaszewski, 2012). It is consistent that the women in this sample who experienced abuse in the last year would have higher levels of SDO.

Social Dominance Theory was developed to help researchers and investigators understand how group-based social hierarchies are structured and maintained (Pratto et al., 2006). This study's principal investigator aimed to examine how women veterans' individual characteristics—including IPV—interact with SDO, an attitudinal variable and the main variable of SDT, to predict high risk sexual behaviors. A major underlying rationale for the study was that women with a history of IPV of any type (physical, sexual, emotional, and economic) would support hierarchical structures and engage in high risk sexual behaviors. Social Dominance Theory focuses on power within hierarchical structures, hence its relevance to this study on women veterans. It is structured around the four foundations of gendered power: force, resource control; social obligations; and consensual ideologies (Pratto & Walker, 2001).

Proponents of SDT posit that social hierarchies are grounded in arbitrary categories such as age, religion, gender, class, sexuality and that marginalized groups sustain or maintain them. Rosenthal and Levy (2010) and Rosenthal et al. (2012) demonstrated that SDT guided studies may help to explain women's risk for HIV and other STIs when the relationship is unequal in terms of power dynamics. Utilizing SDT to guide this current study is supported considering that the military is a highly stratified environment, with men holding disproportionately high social, military and economic power compared to women. Women who enroll in the military have a history of abuse, a factor known to be associated with high risk sexual behaviors among women veterans (Bolan, 2013; Schultz, et al., 2006). Sixty-four percent of the women in this study reported having experienced emotional and/or physical abuse. The rate of abuse is probably

higher than what has been reported in the literature and in this study because the military is a culture wherein under-reporting of unwanted sexual aggression persists.

There were overall no significant relationships between women who experienced or did not experience abuse, but the results indicated that 45% of the sample experienced emotional, physical or sexual abuse as a child, demonstrating the need for more studies. A study is needed to explore the relationships between abuse and SDO among women veterans, especially as there was a statistically significant relationship between recent abuse and SDO levels. The non-significant finding could be attributed to lack of variability in the mean SDO scores of both groups. It could also indicate that even though these women experienced abuse they did not subscribe to the tenets of SDT, hence the lack of significant results. The following experiences of:

1. emotional/physical abuse by a partner or someone important,
2. ever been abused during pregnancy,
3. ever been touched, groped, and/or fondled in the private parts as a child,
4. having experienced forced sex in the past year,
5. economic or financial abuse in the last year, and
6. ever having experienced financial or economic abuse,

did not make a significant difference in SDO levels or SSBQ scores of participants in this sample, a finding contrary to previous studies (Njie-Carr, 2014; Gradus, 2016). These findings suggest that SDT does not fully explain the link between abuse and gender roles, but the results partially supported the hypothesis because those who reported abuse had higher levels of SDO. More studies are needed to explore the impact of SDT in abusive relationships.

Pregnancy, Abuse or Intimate Partner Violence, and Social Dominance Orientation

There were no statistically significant SDO levels among study participants who experienced abuse during pregnancy. This is in keeping with SDT which has not revealed any direct links between SDO and pregnancy. Despite the lack of statistically significant results between IPV and SDO in this study, the link is supported by the research. Intimate partner

violence/abuse affects one in three US women and is significantly more hazardous to pregnant women and the unborn child (Herbell et al., 2020). Herbell et al. enumerated social inequities, such as poverty among economically disadvantaged women, structural violence, and power imbalance in relationships, as factors contributing to IPV. Studies have also affirmed the prevalence of IPV among women veterans (ACOG, 2012; Black, 2011; Gerber et al., 2014; Turchik, et al., 2012) contributing to diminished physical health status among them compared with their civilian counterparts (Lehavot et al, 2013).

Intimate Partner Violence among women veterans is related to PTSD, returning to civilian life, and having been sexually harassed during their military tenure (Gielen, 2006; Murdoch, Kristin & Nichol, 1995). Results in in this study did not support prior studies because some of the traditional factors associated with abuse or IPV among veterans, such as PTSD, and recency of transition back to civilian life, were not examined in this study. This sample of women was highly educated, mostly economically independent Christians, factors not historically associated with abuse. More research is needed to assess the impact of SDO on IPV during pregnancy to confirm the results of this study; specifically, one future study could explore the relationships among SDO, PTSD, recency of transition to civilian life and IPV/abuse.

Socioeconomic Factors, Safer Sex Behaviors, and STD Knowledge

This sample of women veterans was very well educated, and this was noted in the statistically significant impact of education on SSBQ scores ($F = 3.89$, $df = 5$, $p = .002$). Education also had a statistically positive significant impact on STD-KQ scores ($F = 2.43$, $df = 5$, $p = .03$). Findings revealed significant positive associations among women of different educational levels in relation to SSBQ scores and STD-KQ scores. The statistically significant associations between the SSBQ and STD-KQ scores were positive, indicating that as educational levels increased so did these scores. The mean STD-KQ scores were highest among high school graduates, followed by those with a technical education and then by those with postgraduate education. The high score among high school graduates could be related to the focus placed on STI prevention

education during high school which tapers off as students enter the adult world of trade schools and college when they are on their own.

The mean SSBQ scores were highest among college graduates, followed by graduates and then high school graduates. These results could mean that more formal education often involves exposure to a wider array of facts including risky and safer sex practices. These finding corresponded with results from other research investigations (Bakhoun et al., 2016). Kalichman found that, as early as 2005, higher education was a significant predictor of decreased sexual risk behaviors because education results in increased knowledge about risk reduction strategies, as educated women challenge norms to gain access to resources and power within relationships (Gregson, et al., 2005). Education within the context of STD knowledge does not always translate into safe sex practices (Castora, 2005; Lee et al., 2016) because sexual behavior is complex and other factors, such as spontaneity and emotionality intersect to result in sexual behavior change. This finding was not inconsistent with evidence provided in other studies.

Rank was noted to have a statistically significant positive relationship with SDO levels. This was not an unexpected finding because the military is a highly structured environment based on rank and so it was consistent that the higher the rank, the higher the SDO levels in this sample; clearly gender did not make a difference.

Statistically significant positive correlations were observed between STD-KQ scores and SDO levels (r =.34, p = <.01), suggesting that as women in the study demonstrated more knowledge about STD, their SDO levels also increased. This finding was not supported by the theoretical framework nor by previous research (Asbrock, et al., 2010). In fact, the opposite has been elucidated by previous research and the theoretical underpinning of this study. That is, as women become more assertive, it has been found to be a protective factor against risky sex practices and STD (Annang et al., 2010; CDC, 2016). This finding suggests that women in this study who were more knowledgeable about STIs were more likely to subscribe to the tenets of SDO, or to believe in unequal sexual relationships. This finding can be explained based on some

of the characteristics of the study participants. The majority of the women in this sample were Florida residents, White, Christian, highly educated, and identified themselves as moderately religious.

Gillespie-Johnson (2008) researched HIV/AIDS prevention practices among immigrant Jamaican women who had come to the US in the previous 12 years. She found that ". . . even though women were knowledgeable about HIV/AIDS prevention, their religious beliefs and cultural practices were deeply embedded in their health practices," (p. S2-175) which could have placed them at risk for STIs. Christianity, like most religions, has strict gender role expectations which impact sexual practices and these roles consistently assign more power to men. The majority of the women in this sample subscribed to Christian principles and teachings. It is, therefore, understandable that they would align directly with SDO. More research is necessary to elicit direct linkages between Christianity, sexual behavior and levels of SDO.

Race and Safer Sex Behaviors

Race had a statistically significant association with SSBQ scores (F= 3.89, df = 5, p = < .002). There was a significant positive relationship between race and SSBQ scores in this study. This finding is inconsistent with results from other studies (Amoateng, et al., 2015; Edeleman, et al., 2007; Hoffman, 2008; Mishra et al., 2008) which demonstrated that Blacks or ethnic minorities tend to engage in riskier sexual activities. Studies have also demonstrated that higher rates of STIs exist among ethnic minorities compared to Whites (Hogben & Leichliter, 2008; Laumann & Youm, 1999). A possible explanatory factor in this study could be related to the fact that the majority of these study participants were White, Southern, Christian women.

Safer Sex Behaviors and Religiosity

Significant positive associations were observed between SSBQ scores and level of religiosity (r =.25, p < .01). This finding suggests that level of religiosity is a protective factor against high risk sexual behaviors. Past research has both supported and refuted this finding. Religiosity was a protective factor among a sample of Black African adolescents in a poor

community in the North West Province of South Africa (Amoateng, et al., 2014); among a group of Jamaican-born adolescents who were steeped in religious teachings (Archibald, 2007); and among young women students at a university in the "Bible belt" of the United States (Poulson et al., 2010). Women with strong religious beliefs in the latter study drank less alcohol and were less likely to engage in risky sexual behaviors than those women who were less religiously committed. The results of this study were consistent with these prior studies on the relationship of religiosity with sexual behavior and attitudes.

Other studies have demonstrated that religion was not always a protective factor and could place women at risk for STIs (Rosenthal et al., 2012; Stulhofer, et al., 2007) because of power imbalance, and strict gender roles, characterized by defining gendered obligations in religions like Christianity. Though the sample of 374 young people in the study by Dunne et al. (1994) were different from the 221 women veterans in this study found, 32% of their sample perceived religion to be important in their lives and were less likely to have had intercourse. Despite their beliefs, among the sexually active sample, religious youth did not differ from their peers in recent condom use, the age at which they first used condoms, or the rate of partner change. Dunne et al. (1994) concluded that, contrary to several assertions at the time of their study, religious youth were less likely than non-religious youth to take precautions during sex.

At the time of the study, there was a 17% prevalence rate of infection between those who were not sure if they were being treated for an STI/STD and those who were being treated for an STI/STD, despite the majority being identified as Christians. This is supported by the fact that there was also a statistically significant negative correlation between STD-KQ scores and level of religiosity among women veterans in this study (r = -18, p <.01), a finding that indicated that as STD-KQ scores increased, levels of religiosity decreased and vice versa. The finding also suggested that the more religiously committed the participant, the lower their STD-KQ scores. This finding has implications for highly religious women veterans who may be less knowledge about STDs and more at risk for infection.

Economic Dependence, Immigration Status, and Safer Sex Behaviors

There was a statistically significant negative relationship between economic dependence and SSBQ scores of the women in this sample (r = -.01; p <.01), supporting Hypothesis #4. This finding was supported by the theoretical framework which stipulated that women who are economically dependent (resources controlled by someone else) are more likely to engage in high risk sexual behaviors. According to SDT resources are usually controlled by men (Rosenthal & Levy, 2010). Pratto and Malle (1994) and Rosenthal et al. (2012) discussed women's STI risk and their economic dependence on male partners, as an association typically seen in poverty, sex work, lower educational levels and hierarchical institutions that place women at risk for abuse and STIs. It becomes dangerous and difficult for women to negotiate condom use or discuss monogamy as a result of these situations in which they are economically dependent or have resources controlled by men (Gutierrez et al.,, 2000; Machel, 2001; Webber, 2007; Wingwood & DiClemente, 1997; Wingwood & DiClemente, 2000; Wood, 2007), placing themselves at risk for STIs in such situations.

Despite the research findings noted above, income, immigration status, and rank at the time of discharge from military service did not demonstrate a statistically significant association with SSBQ scores in a more rigorous analysis utilizing ANOVA in the current study. This finding is not consistent with previous research and requires further examination to understand this phenomenon. It must also be noted that at least fifty participants could not answer the question related to immigration status because they were VAMC participants; the VAMC IRB did not approve the inclusion of this question on the Demographic Questionnaire for its participant. This could have decreased the variability in the sample leading to a non-significant finding.

Individual and Demographic Predictors of SSB, STD-KQ, and SDO

Statistically significant positive correlations were observed between SDO levels and age at first sex. This finding suggests that, in this sample, women who experienced first sex at an

older age were more likely to ascribe to the tenets of SDO. This is not far-fetched because the sample of women was mostly Christian, White and had moderate to high levels of religiosity.

Age discordance in relationships, race, rank, IPV/abuse, level of religiosity and social obligation factors predicted Safer Sex Behaviors, STD knowledge and SDO levels but, none of these variables were statistically significant predictors in this study with regard to participants' age. These results fall outside the realm of previous research as lower age at first sex has been long associated with high risk sexual behavior in the general population (Mishra et al., 2014) and among women veterans (Combellick, et al., 2019). Further exploration of this finding is required to clarify and comprehend the relationships between age at first sex, SDO, STD-KQ and SSBQ scores among women veterans.

Study findings suggested that, in this model, levels of religious commitment and social obligations were significantly negative predictors of SDO (*Beta* = -0.78, $p = .01$) and social obligations (*Beta* = -0.57, $p = .03$). These findings did not support the theoretical propositions that as levels of religiosity and social obligations increased among study participants, their SDO levels would also increase. Previous research evidence demonstrated that religious affinity could be either a protective factor (Amoateng, et al., 2014; Archibald, 2008; Combellick, et al., 2010; Francis, et al., 2019; Poulson, et al., 2010); or a risk factor for unsafe sexual behaviors, (Dunne, et al., 1994; Rosenthal & Levy, 2010; Sidanius & Pratto, 1999). It is unclear which factors may contribute to religiosity or religious affinity as protective or as a risk factor, and this study did not shed further light on this issue because this was not the focus of the study. More research is needed to understand the rationale for this finding in this group of women veterans, and to assess mediators in the relationship of religiosity and unsafe sexual behaviors.

Previous research demonstrated that women with more social obligations (that is, responsibilities dictated by social and cultural norms that women have in relation to men, such as caring for loved ones, children, and being more committed in relationships) are at risk for STIs. Rosenthal and Levy (2010) pointed out that because of women's commitment to their male

counterparts in sexual relationships, they are less likely to use, or negotiate condom use if they perceive that the relationship is a committed one, even if they know their partners have been unfaithful (Amaro & Raj, 2000; Kershaw et al., 2006). This extends to other types of sexual relationships in which someone takes on the role of the man such as in homosexual/lesbian relationships. Sometimes women elevate their relationship obligations over their own safety, especially in marriage or in other trusted, long-term relationships deemed safe, again placing themselves at risk for STIs and other infections (Clark et al., 2006; Decker, et al., 2009; Ritchwood, et al., 2016; Figueroa, 2014).

Education as Predictor of SDO and STD Knowledge

Among the socioeconomic factors entered into the model (education, income, rank, race, immigration status, economic dependence) education was found to be a significant negative predictor of SDO levels (*Beta* = -.39, p = .01) and a statistically significant positive predictor of STD knowledge (*Beta* = 1.71, p = .04). These findings supported the SDT by suggesting that people with high educational levels were less likely to subscribe to hierarchical structures and those with lower education were more likely to subscribe to systems in which hierarchies are maintained or are dominant. These findings partially supported the theoretical framework and other studies (Whitt, & Gore, 2019).

Education was also found to be the best positive predictor of STD knowledge. Based on SDT, this finding is reasonable as it is logical to expect that the higher the educational level, the higher the STD knowledge, and vice versa. Despite this, however, a high educational level does not necessarily translate into safer sex practices and may even place women at risk for STIs especially when viewed in the context of other influencing variables such as marital status and religiosity. High levels of religiosity or being steeped in religious culture and teachings often means subscribing and adhering to strict gender sex roles such as the woman being submissive to the man who is the dominant partner of the relationship and practicing unsafe sex to facilitate pregnancy and multiplication of one's race or lineage.

Summary of Non-significant Findings

The findings of this study as outlined below were not statistically significant, suggesting that future research is needed to further clarify relationships between the concepts studied. Such findings suggest that other statistical analyses might have, if utilized, elucidated predictive values of variables to highlight significant associations, such as more predictive analyses. These were not utilized because of the how the hypotheses and research questions were stated. These findings might have been outside the realm of significance because some variables were added later in the study (such as age discordance) and others were left out because of the population and setting utilized for data collection; consequently, a large number of data was missing for some of the variables of interest. There was no statistically significant difference between the SSBQ scores of those who experienced and who had not experienced abuse. There was no difference in SSBQ mean scores for women who experienced, or did not experience abuse, but those who experienced abuse had lower scores than those who did not.

The following factors did not make a statistically significant difference in SDO or SSBQ scores of participants in this sample:

a. having experienced emotional, or physical abuse by a partner or someone important,

b. having ever been abused during pregnancy,

c. having ever been touched, groped, and/or fondled in the private parts as a child,

d. having experienced forced sex in the past year, and

e. having experienced economic or financial abuse in the last year.

The following variables were not statistically significant in predicting STD-KQ or SSBQ scores:

a. age, age discordance, race, rank, IPV or history of abuse, level of religiosity, and social obligation; and

b. education, income per year, rank, race, immigration status, and economic dependence.

Conclusions

The conclusions of this study include the following:

1. Researchers concerned with women veterans should consider the history of recent IPV (such as within the past year). Too often the focus is on past MST and not recent experience with violence or abuse. Though the findings related to pregnancy and abuse were not significant, several women reported having experienced abuse during pregnancy. It must be noted that power dynamics change in relationships when women are pregnant, placing them in more vulnerable situations that can increase their risk for STIs.
2. Women veterans have different levels of education, and higher education may be a protective factor against risky sexual practices. Despite, this, researchers must also be aware that low education can be a risk factor for sexual risk behaviors because formal education does not necessarily translate into STD prevention knowledge.
3. Researchers must bear in mind that race continues to be linked to sexual behaviors with Whites more positively associated with safe sex behaviors. Cultural factors, therefore, need to be more carefully studied as contributing to safer sex behaviors.
4. Safer sex behaviors were positively associated with level of religiosity, meaning that high levels of religiosity may not be related to risky sex behaviors. Religion often is greatly influenced by culture and may lead to different behaviors in different cultures based on the dominant religion in the culture. The level of religiosity appears to be protective in this case and those veterans who are more steeped in their religion may not be at risk for STIs.

5. Women veterans who are highly religious may not be knowledgeable about STIs, placing them at risk for STIs, a finding of this study which is also in keeping with the previous conclusion.

   Researchers and health care providers should be mindful and screen for religious commitment levels in this population. The need to develop such tools is highlighted in this study even though some religious organizations may object to sexual teachings. Any objection has to be respected but education is necessary.

6. Social Dominance Orientation levels and age at first sex were positively related in this sample of women veterans. This means that women who engaged in sex at an older age were more likely to subscribe to more structured traditional hierarchical gender relationships. Though this finding is inconsistent with previous research, anyone studying women veterans in the State of Florida should bear in mind that the higher the age at first sex, the higher the affinity for hierarchical or unequal relationships.

7. Knowledge of STDs and SDO were positively associated, implying that women who had more knowledge of STDs were also more likely to subscribe to hierarchical gender and social roles. This finding suggests that researchers and caregivers should be aware that, even though women veterans may be knowledgeable about STIs, they may still subscribe to traditional hierarchical gender relationships that negatively influence safer sex behaviors, thereby placing them at risk for STIs, a phenomenon that could be related to the influence of having been in the military.

8. Women veterans in this study, for the most part, were economically independent and not poor, a factor that is sometimes protective against risky sex practices. Studies have demonstrated that poverty is a leading factor associated with risky sexual behavior (Biney et al., 2020; El-Basel, 2009; Gillespie-Johnsons, 2008; Hewage, 2020; Silas, 2013), and in this study, the women were more economically independent. Despite these research findings,

healthcare providers must also be mindful that economic dependence is not an absolute protective factor against STIs as women of all social strata contract STIs.

9. Social Dominance Orientation was negatively associated with SSBQ scores, suggesting that among this sample of women veterans, those who had a tendency towards hierarchical, religious, and social, gender role positions, were at higher risk for STIs.
10. High STD-KQ scores were positively related to high SDO levels, even though an inverse negative relationship was expected. This sample was a highly educated, Christian group of women, with an average of almost 40 years of age, factors that could explain this unexpected finding.
11. This study did not demonstrate a statistically significant relationship between social obligations, race, rank, age, age discordance in relationships; however, health care providers for this population should be aware that based on this study's results women veterans who are steeped in religion and report high levels of social responsibilities may be at risk for STIs due to the possibility that they are more likely to be in unequal relationships, dependent and in need of help and support.
12. Education was a negative predictor of SDO suggesting that high education levels meant low SDO and vice versa. SDT does not postulate that education is either a protective or facilitating factor for SDO but there is a relationship between education and other SDT variables of interest such as economic independence. The PI for this study hypothesized that lower education levels would result in higher SDO levels, as supported by these results. This is logical because this sample of more highly educated women did not appear to subscribe to hierarchical relationships, which is a protective factor against STIs. Education was also a positive predictor of STD-KQ scores. Health caregivers and researchers must know that based on this study, education does not necessarily translate into safer sex behaviors for women veterans.

Significance of the Study

Scientific knowledge can only be advanced through research, hence there is a necessity to question, investigate, and understand phenomena that have never been studied. The curiosity for the PI of this study regarding women veterans lay in their STI rates that were so many times higher than those among women in the general population. Almost 79% of the sample experienced physical, sexual, emotional, or childhood sexual abuse, even though MST was not specifically measured in this study. Approximately 14% of the sample participants were being treated for an STI with 2% of those not sure if they were being treated for an STI in terms of high-risk sexual behaviors. Six percent reported being HIV-positive, 12% were being treated for an STI/STD, 2% were not sure if they were being treated for an STD/STI, and almost a quarter of respondents (22%) reported never having been tested for HIV. It is clear that healthcare providers need to spend more time exploring these discrepancies that can result in more devastating effects for the women. The researcher desired to know whether or not being in the military environment, a highly structured, hierarchical, male dominated environment, contributed to sexual behaviors that place these women at risk for such high rates of STIs, and whether or not such behaviors, continued once they transitioned out of the military as veterans.

Significance for the Social Dominance Theory

This study tested key propositions of the SDT in relation to women veterans. The study was the first to explore women veterans' sexual behaviors utilizing SDT to attempt to explain the phenomenon of interest among women veterans. Some propositions of SDT were supported while others were not. This study laid the foundation for a theoretical understanding of the predictors of sexual behaviors among women veterans and is now among very few studies that have utilized SDT to understand and elucidate women veterans' sexual behaviors and risks of STIs. Testing this theory by way of this study has highlighted the need for instrument refinement specifically for use in this population. Many participants found it difficult to complete the Abuse Assessment Scale (AAS) as evidenced by such comments as "What does this mean?" or they left certain

sections blank, resulting in missing data related to sub-sections of the tool. It is necessary to repeat the study with a refined, or revised, and clearer version of the tool to compare results.

Significance of the Study for Healthcare Practice

This study has significant practice implications especially because the VA recognizes that it has to do much more when it comes to women's health. Of the 221participants, 50 were from a particular VA clinic but that data was not analyzed separately for the purposes of this study. It is anticipated, however, that they will be analyzed at a future date and shared with the VA. This is important because the literature on women veterans' health needs has concluded that, "Women's military experiences and responses to their military experiences are often distinct from those of men, and these differences can affect both their health status and their health care needs as active duty personnel and as veterans (VA, 2011, p. 6).

Findings from this study can assist in the development of gender-specific safer sex interventions for women veterans, such as ensuring that women understand what they are being treated for, especially when it pertains to STIs; educating women about the need to know their HIV status and bring about awareness of how to prevent transmission of the disease, while being respectful of their religious leanings.

Findings of this study can also contribute to the understanding of STD risk behaviors and begin a trajectory of research to address women veterans' specific sexual behavior concerns in terms of individualized care, treatment responses, and identification of strategies to mitigate unsafe sexual behaviors and improve safe sex behavior among them. This study has developed a foundation for comparative research between women and men veterans, as well as with civilian groups to provide empirically based findings that can shape practice changes and instigate health policies and interventions to meet their needs. The State of Florida is a rich reservoir of veteran women with cultural and ethnic diversity and is ripe for more population-specific research within the veteran population in the near future.

The population of women veterans is rising and is expected to reach 15% by 2036 (Goyal et al., 2012) and this has significant implications for healthcare. Women veterans are at higher risk for STIs demonstrated by findings from the few studies conducted among active duty personnel compared to the general population of US women. Women veterans who tend to be younger, unmarried and belonging to racial ethnic minorities (ACOG, 2012; Golub & Bennett, 2014; Sadler et al., 2011; Murdoch & Nichol, 1995; Williams & Bernstein, 2011) are at even higher risk. Each of these demographic factors is associated with increased risk of STIs among women, in general (CDC, 2016; WHO, 2014) and this study has elucidated some of the demographic and individual factors that can mitigate sexual risk behaviors, such as religiosity, marital status, education, and race.

Yano and Frayne (2011) conducted a review of the literature on the health and health care of women veterans and women active in the military. These researchers discovered that up to that time, the majority of the eighteen peer-reviewed studies analyzed were focused on mental health with emphasis on PTSD and the psychological sequelae of MST. They concluded that there was a need to ". . . better understand the characteristics and experiences of women Veterans," (p. 565). This study has begun to unfold some of the characteristics of women veterans that can be associated with high risk sex practices among this group of women, such as low HIV/STI testing rates, providing a greater understanding of the need for more education and innovative strategies that can result in more practical interventions to increase safe sex behaviors in this population. There were also no studies that had explored whether or not risky behaviors that women veterans engaged in while in the service followed them into civilian life when they transitioned to veteran status. This study is the first to focus solely on women veterans' sexual risk behaviors in the context of SDO, examine such phenomena, and recommend practice changes such as including a level of religiosity screening for women veterans under VA care.

Significance of the Study for Healthcare Policy and Procedures

This study also has implications for policy development and policies and procedures for healthcare. No study has previously focused exclusively on women veterans and the factors that predict high risk sexual practices among them, against the backdrop of SDO. Specific recommendations from this study can assist the VA and other healthcare organizations in guiding and providing appropriate, relevant, gender-specific sexual healthcare for women veterans. This study is, from a policy perspective, significant because government officials have argued, and have now agreed, that research related to women veterans' health at all stages, has been ignored for too long (Department of Veterans Affairs Report, 2014). Health policy needs to focus on more resources to screen and develop interventions to mitigate STI risk among women veterans.

The following recommendations from this study are relevant for practice. Education may be protective against risky sexual behaviors among women veterans, especially when considered along a continuum with high levels of religiosity. Another finding that may have implications for practice is that age at first sex and SDO levels were positively related in this study. This implies that as age at first sex increased, SDO levels were also higher, a finding that has implications for STI risk. This finding was not supported by previous research but was a statistically significant finding in this group of women who participated in this study. Women veterans who are economically dependent are also at high risk for STIs. Caregivers should focus on women veterans who report economic dependence because they, too, may also be at high risk for STIs.

Limitations and Strengths of the Study

This study has several limitations that must be highlighted. First, though the sample size was fairly large, participants were volunteers and the sample may not be representative of all women veterans in the State of Florida or the USA. Second, because most of the participants came from South Florida, study results may be limited in its generalizability to women veterans in other parts of the US. Study results therefore should be extrapolated to all veteran women with caution. Third, a descriptive correlational, cross-sectional design was utilized, limiting the researcher from making any causal conclusions from the results. It is not possible to establish

temporal relationships due to the study's data collection at a single time point. A longitudinal study is needed to clarify temporal relationships among variables.

Fourth, study instruments were all self-reported questionnaires either completed electronically or on paper. Participants might have felt the need to exaggerate or under-report behaviors in the hope of appearing favorable to the PI and society (Leltes et al., 2012). Fisher, (2013) demonstrated that ". . . there is something specific to sexual behavior with regard to a differential willingness between men and women to report behavior unless there is pressure to be honest," (p. 401). Questionnaires used could have introduced bias into the study and rendered results specious. However, this is inevitable as all self-reported surveys come with these inherent flaws. The researcher built processes into the study to diminish bias and increase reliability and validity of methods, such as using highly tested and reliable instruments to counter bias along with having a large enough sample. The final limitation had to with the fact that some demographic questions were deliberately removed from the survey questionnaires administered to the VA participants, due to IRB requirements of the VA. This led to missing data from about 50 study participants for the analyses of several research hypotheses and questions, which could have influenced the results.

It is difficult to conduct research on human subjects without some bias. It, therefore, becomes important for research investigators to disclose all possible factors that can be interpreted as impacting the study in one way or another, and control for possible confounding factors with appropriate statistical tests and procedures.

The strengths of the study, overall, far outweigh its limitations. Even with these noted limitations in mind, the findings of the study are timely, and can be useful in identifying women veterans at risk for STIs by including the associated and predictive variables discussed earlier in their clinic or hospital screening tools.

Study Implications

Implications of the Study for Nursing and Education

Findings from this research have distinct implications for nursing and education because there is no prior study related to the factors that predict high risk sexual behaviors among women veterans in the context of SDO. Findings from this study could have appreciable influence on how nurses care for, and screen women veterans in the health care setting. Religiosity, pregnancy, educational level, economic dependence, social obligations, age at first sex, and STD knowledge, all play significant roles in safer sex behaviors and STI risk reduction and should be included as part of the screening of women veterans who seek health care.

Implications of the Study for Research

This study has several implications for research because it has generated new information about women veterans' sexual behavior risks in the context of SDO and is the first of its kind to utilize a theoretical framework to examine the issue in such depth. Future research on this topic is necessary and should begin with replicating the study in other parts of the US to see if the results are consistent with this study's findings.

Future research is necessary to test psychometric tools within the women veteran population and ensure more accurate means of collecting data. It is necessary to refine the PI-developed Demographic Questionnaire, utilize a more easily understood abuse or IPV scale and, further perfect the electronic survey process to determine if the study's results can be replicated under these conditions with an even larger sample of women. It is possible that additional research focused on racial/ethnic minorities of women veterans may yield similar or different results, bearing in mind that the group of women veterans in this study were mostly White, educated and Christian.

Summary

This descriptive correlation cross-sectional study was conducted with two aims in mind. First, it aimed to examine how women veterans' individual and demographic characteristics (age, racial/ethnic background, military experience, and prior experiences with abuse), cognitive and behavioral factors (safer sex behaviors and knowledge of STDs); socioeconomic factors (age,

race, income, education, rank at the time of discharge, economic dependence and marital status) and SDO levels are all associated with each other. The findings in this study are partially supported the first aim and provided insights into the relationships among these variables.

The second aim of the study was to explore the extent to which women veterans' individual and demographic characteristics (age, age discordant relationship, racial/ethnic background, military rank, history of abuse, perceived religious commitment and social obligations or responsibilities predicted safer sex behaviors, knowledge of STDs and SDO levels. The findings in the study partially supported this aim and provided useful information that can help to guide practice and plan care for women veterans. New and interesting statistically significant findings were elucidated: statistically significant associations between those who experienced abuse in the last year but not overall abuse; and religiosity and its significant associations with major variables in this sample were highlighted

The prevalence rate of STIs among the sample was 12%, with 2.4% reporting they were not sure if they had an STI at the time of the study. Almost 15% of the sample reported they previously had an STI. Considering that 45% of new cases or 9 million women are diagnosed with STIs each year (Office of Minority Health Fact Sheet, 2015), 15% in a sample of 221 women is a high rate and should be a call for action.

Social Dominance Orientation partially explained the relationships among variables in this study which was the first of its kind to utilize SDO—the main variable of SDT, to guide such an inquiry. The study was conducted in the State of Florida, one of two states with the highest number of HIV-infected veterans in the US and growing numbers of new cases of chlamydia, gonorrhea, and syphilis. Women veterans have been an understudied population because of their small number; even so, they are owed the same importance and priority enjoyed by their male counterparts, especially when it is widely known that women veterans bear the brunt of MST, STIs, adverse reactions to ART, IPV and general disregard for their health. This study has begun

a trajectory to redirect research focus on women veterans and their health care needs despite the challenges.

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APPENDICES

1.	Appendix A	-	Study Participant Screening Form
2.	Appendix B	-	Updated Demographic Questionnaire, June 11, 2019
3.	Appendix B-1	-	Demographic Questionnaire Revised for VAMC, July 2 2019
4.	Appendix C	-	Safer Sex Behavior Questionnaire (SSBQ)
5.	Appendix D	-	Social Dominance Orientation (SDO) Scale
6.	Appendix E	-	STD Knowledge Questionnaire (STD-KQ)
7.	Appendix F	-	Abuse Assessment Tool – Short Form
8.	Appendix G	-	Flyer to Advertise Study
9.	Appendix H	-	FIU IRB Protocol Approval
10.	Appendix H-1	-	FIU IRB Document
11.	Appendix I	-	Fray Informational Letter for VAMC Participants
12.	Appendix J	-	Updated English Consent Form
13.	Appendix J-1	-	Revised Online Consent Form
14.	Appendix K	-	VA IRB Approval Document
15.	Appendix K-1	-	VA IRB Approval Notice

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PUBLICATIONS AND PRESENTATIONS

Denker, A. & Fray, B. M. (March, 2009). *A fresh start for nursing.* Podium presentation at the. Barry University Lambda Chi Research Conference, Davie, Florida.

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Denker, A. & Fray, B. M. (February, 2010). *Unit practice councils utilize evidence-based practice to improve care in a shared governance environment*. Poster presented at Florida Magnet Conference, Naples, Florida.

Fray, B. M. (April, 2010). *The UPC functionality measuring tool: An instrument for measuring UPC functionality at the point of care*. Poster presented at the 5 thAnnual Baptist Health Research Conference – It's a Jungle Out There: Making Sense of Evidence-based Practice, Miami, Florida.

Fray, B. M. (April, 2010). *Unit practice councils utilize evidence-based practice to improve care in a shared governance environment.* Podium presentation at the 5 thAnnual Baptist Health Research Conference – It's a Jungle Out There: Making Sense of Evidence-based Practice, Miami, Florida.

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