

THE IMPACT OF AN ONLINE EDUCATIONAL INTERVENTION FOR NON-VA  
CIVILIAN NURSE PRACTITIONERS: A MEASURE OF COMFORT IN CARING  
FOR VETERANS

By

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## ABSTRACT

KESHIA PETTUS. The impact of an online educational intervention for non-VA civilian nurse practitioners: A measure of comfort in caring for veterans  
(Under the direction of DR. KELLY POWERS)

*Background:* There is a nationwide focus on increasing awareness about veterans' unique healthcare needs. The CHOICE Act allows eligible veterans to receive care from community healthcare providers; however, literature on effective methods to prepare non-VA civilian nurse practitioners (NPs) to care for veterans is lacking.

*Purpose:* To develop an online educational intervention for non-VA civilian NPs and conduct a pilot study to evaluate its impact on comfort level in caring for this veterans.

*Methods:* An online educational module was developed and a 10-item tool was used to assess comfort level before and after completing the module. A link to the online pilot study was emailed to 250 NPs in North Carolina and data was collected over 4 weeks.

*Results:* A total of 11 non-VA civilian NPs participated. Wilcoxon signed rank tests were used to detect statistically significant changes. Mean scores for all 5 items measuring comfort level improved, with 3 reaching statistical significance: comfort level for discussing hazardous exposures ( $p = .038$ ) and understanding and treating TBI ( $p = .046$ ) and PTSD ( $p = .014$ ). In addition, overall comfort level improved ( $p = 0.018$ ).

*Conclusion:* Pilot study findings indicated the online educational module did improve non-VA civilian NPs' comfort level when caring for veterans. Results also indicated non-VA civilian NPs desire for education on caring for veterans and pretest scores showed low levels of comfort and familiarity for veteran-specific care. Continued research on preparing non-VA civilian NPs to care for veterans is essential.

## DEDICATION

I would like to dedicate this project to my mother and guardian angel in heaven, Alease Carden. May you continue to rest in peace and know that everything you spoke into and over my life from a child to an adult continues to come to fruition. This project is also dedicated to my grandfather Lewis Pettus, Sr., who was a Korean War veteran and my stepfather, Cliffier Carden who was a Vietnam war veteran. You all are gone, but not forgotten and truly the reason why I want to ensure that veterans receive the best care possible. I also want to thank my supportive family and friends as I would have not been able to do any of this without you. This project is also dedicated to my daughter who is the love and light of my life.

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## LIST OF ABBREVIATIONS

DNP	Doctor of Nursing Practice
NP	Nurse Practitioner
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OND	Operation New Dawn
PTSD	Posttraumatic stress disorder
SI	Student Investigator
TBI	Traumatic brain injury
US	United States
VA	Veterans Administration

## CHAPTER 1: INTRODUCTION

According to the United States (US) Census Bureau, there are approximately 21 million veterans in the US, and among those are 2 million returning Operation Iraqi Freedom (OIF), Operation Enduring Freedom (OEF) and Operation New Dawn (OND) veterans (US Census Bureau, 2015). These returning veterans, collectively known as the veterans of the Global War on Terrorism, make up about 10 percent of the entire veteran population (Fischer, 2015). Due to the vast number of US veterans, national spotlight has been placed on meeting their healthcare needs, as well as their social and psychological needs. With the growing number of OIF/OEF/OND veterans returning home, the government has pledged to care for those who have cared for the nation through serving in the military (Biggins, Engstrom, Jackson, Sommers, & Thorne-Odeml, 2013).

The national focus on excellence in healthcare for veterans is highlighted by the 2011 Joining Forces initiative started by First Lady Michelle Obama and Dr. Jill Biden. This nationwide initiative seeks to promote awareness of the unique healthcare needs and experiences of America's veterans. Priorities of Joining Forces are education, employment and wellness of veterans and continued education and training for healthcare providers regarding the unique healthcare needs of veterans and their families (Joining Forces, 2015). In 2013, the American Academy of Nursing, in partnership with Joining Forces, began the campaign "Have You Ever Served in the Military?" This campaign seeks to increase awareness about veterans' unique health issues amongst healthcare

providers in order to improve the care rendered to them. A specific focus is improving community healthcare providers' identification of veterans in their patient population so appropriate care can be provided for military conditions such as post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI) (Collins, Wilmoth, & Schwartz, 2013). This campaign proves to be essential as several studies have shown a significant number of veterans do not utilize the Veterans Administration (VA) healthcare system and the sheer volume of veterans requiring healthcare exceeds the VA capacity to manage their care (Quinlan, Gauron, Deschere, & Stephen, 2010). Due to the fact that approximately 44% of veterans utilize non-VA healthcare providers (Convoy & Westphal, 2013), it is essential that civilian healthcare providers are able to identify veterans in their patient population, address their unique needs and provide them with high-quality effective healthcare.

One of the most recent actions taken by the US government to ensure veterans are receiving timely and adequate healthcare was the institution of the Veterans Access, Choice, and Accountability Act (CHOICE Act) in 2014. This law allows all veterans enrolled in the VA healthcare system to receive care from non-VA providers or facilities if they are unable to receive an appointment at a VA facility within 30 days or if the veteran lives more than 40 miles from a VA hospital (US Department of Veterans Affairs, 2014). The institution of the CHOICE Act magnifies the need to ensure that all healthcare providers are educated and trained to provide veterans with high-quality, effective care tailored to their unique healthcare needs. The CHOICE Act has a significant impact on nurse practitioners (NPs) who frequently provide primary care to patients in and out of the VA healthcare system (Fletcher, Copeland, Lowery, & Reeves,

2011). It is imperative that non-VA civilian NPs are educated on caring for our nation's veterans.

The Joining Forces initiative, "Have You Ever Served in the Military" campaign and the CHOICE Act all stress the need for community healthcare providers to be able to identify veterans in their patient population. Further stressed is the need to ensure community healthcare providers are educated and prepared to meet veterans' unique healthcare needs. A focus on educating non-VA civilian healthcare providers, specifically NPs, is vital to ensure they are equipped with the knowledge and skills needed to provide high-quality, effective healthcare care.

### Problem Statement

Since 2001, more than 2.4 million military veterans have been deployed to serve in Iraq and Afghanistan, and over the past decade at least 75% of those veterans have separated from the military (Koenig, Mangun, Monroy, Lindsay, & Seal, 2014). Many of these veterans will seek healthcare through the VA system; however, a large number will seek care from non-VA civilian providers. In fact, it is estimated that 56% of veterans will access the VA for healthcare services while the other 44% will utilize non-VA services post-discharge from the military (Convoy & Westphal, 2013). It is important for civilian healthcare providers to be able to identify veteran patients within their medical practices, specialty clinics, and community hospitals, and be prepared to address their unique healthcare needs.

Providing healthcare to veterans is unique because, not only do they have chronic conditions common to the general public, but they also may have combat related

conditions such as PTSD and TBI. Veterans are also at higher risk for psychological disorders, including suicide (Algire & Martyn, 2013). The 2015 Congressional Research Service report indicated that approximately one out of every five veterans, or approximately 180,000 veterans, returning from the Global War on Terrorism will suffer from a psychological disorder such as PTSD (Fischer, 2015). In addition, another 327,299 Global War on Terrorism veterans have experienced a TBI (Fischer, 2015). These numbers are staggering as there are over 500,000 veterans from the Global War on Terrorism alone suffering from these disorders, in addition to veterans from other war eras. Additionally, PTSD and TBI place veterans at a higher risk for suicide than the general population. According to the 2012 Suicide Data report, suicide amongst veterans had been consistently lower than the civilian population; however, since 2008 this rate has increased and current estimates indicate a higher rate of suicide among veterans than for the general population. It is estimated that about 22 veterans commit suicide each day across the US (Department of Veterans Affairs, 2012).

These unique health conditions experienced by many veterans can be challenging for civilian healthcare providers to recognize and treat. Fredricks and Nakazawa (2015) found that many non-VA civilian physicians did not indicate a high comfort level for caring for military conditions such as PTSD and TBI, nor did they indicate an understanding of military culture. In addition to physicians, there are a significant number of non-VA civilian NPs who provide care to veterans in the community. In 2012 there were approximately 127,000 NPs providing patient care and at least half of them were working in primary care settings (Vleet & Paradise, 2015). With the recent institution of the CHOICE Act, a larger number of veterans will likely seek care from non-VA civilian

NPs in primary and specialty care settings. These NPs must be able to identify veterans in their patient population and must be prepared to address their unique healthcare needs.

The VA has taken strides to educate their physicians, NPs and nurses about veterans' unique healthcare disparities via e-learning activities and through adding ` for preparing non-VA civilian NPs to care for veterans. Furthermore, no research has focused on assessing NPs' comfort level for providing care to veterans, and no studies have evaluated the impact of an online educational intervention to prepare NPs to care for this population. According to Cook et al. (2008), online learning has the potential to reach large numbers of healthcare professionals, including NPs. The broad reaching platform of online education may be pivotal to providing the tools and knowledge NPs need to improve the care of veterans in community settings.

#### Purpose/Significance

The aim of this Doctor of Nursing Practice (DNP) scholarly project was to develop and implement an online educational intervention focused on preparing non-VA civilian NPs to care for veterans in their clinical practice. This project sought to determine the impact of the online educational intervention on NPs' comfort level for providing care to veterans. This project is significant because of the lack of literature on educating and preparing non-VA civilian NPs to care for veterans.

#### Clinical Question

Are non-VA civilian NPs who participate in a pilot online educational intervention more comfortable in their ability to care for veterans in their clinical practice?

### Project Objectives

There were two main objectives of this DNP scholarly project. The first objective was to design and develop a pilot online educational intervention focused on the care of veterans. To accomplish this objective, an educational module was developed using evidence-based literature on topics specific to the veteran population, such as military culture and war related health conditions. This objective was supported by the RANDS study by Tanielian et al. (2014) which concluded that more evidence-based training on caring for veterans is needed for community clinicians. The second project objective was to determine if the online educational intervention improved non-VA civilian NPs' comfort level for caring for veterans. This objective was supported by a recent study by Fredricks and Nakazawa (2015) which indicated civilian clinicians had a low comfort level for certain aspects of veterans' care, such as understanding military culture and referral services.

## CHAPTER 2: LITERATURE REVIEW

A review of the literature was conducted to establish the healthcare needs of veterans in order to design the online educational intervention. In addition, this literature review focuses on the scarce research available on educating healthcare providers to care for veterans, specifically NPs. The literature review was conducted using the databases PubMed and CINAHL, as well as the Cochrane database. The key words or phrases used when searching the databases included “veterans access to care”, “veteran education for NPs and civilian providers”, “PTSD”, “TBI”, “suicide” and “military culture”. Additional literature sources were located through a review of references cited in articles focused on preparing healthcare providers to care for veterans and on the US Department of Veterans Affairs website. Due to the scarcity of research conducted on preparing healthcare providers to care for veterans, no limits were placed on the educational aspect of the literature search; however, literature on the healthcare needs of veterans was included if it was published from the year 2010 to 2016.

### Military Culture

Military culture is unique because there are five military service branches and each has its own traditions, language, value systems, and procedures. Military culture can be described as a set pattern of beliefs, behaviors and cultural values that are learned through military experience (Convoy & Westphal 2013). In recent years, there have been several studies conducted to investigate the impact of military culture on veterans’ care,

as well as evaluating non-VA civilian provider knowledge of military culture. Kuehner (2013) noted that enhancing or improving the understanding of military culture acts as a basic reference point for non-VA providers to utilize when caring for veterans in the community.

A qualitative study by Koenig, Maguen, Monroy, Mayott and Seal (2014) explored the need for cultural awareness and the use of culture-centered communication between healthcare providers and veterans. Researchers focused on post-deployed veterans and defined what “culture” meant in the context of military personnel. Interviews of 31 Iraq and Afghanistan veterans revealed that no veteran returned from war unchanged due to their intense military experiences (Koeing et al, 2014). Participants reported feelings of “reverse culture shock” (Koeing et al., pg. 418) and found it difficult to adjust back to civilian life after being in the military. This result underscores the need for healthcare providers to provide culturally sensitive communication to help veterans adjust and reintegrate smoothly into civilian life again.

Yet, research has demonstrated that civilian providers are not adequately prepared to provide culturally competent care from a military context. In a descriptive study of 141 civilian physicians, comfort level for caring for veterans was evaluated. Study participants were surveyed about their comfort level and familiarity for general knowledge of military terminology and culture, as well as specific diagnoses related to this population. Most participants were found to be uncomfortable with military culture and military health issues such as TBI (Fredricks & Nakazawa, 2015). A moderate comfort level regarding military terminology was noted amongst the physicians surveyed and there were reports of moderate uncomfortableness with understanding the diagnosis

and treatment of a TBI. Overall, study participants reported their lack of knowledge about certain diagnoses, such as PTSD and TBI, led to a low comfort level in caring for veterans. Participants indicated they wanted to learn more about the veteran population so they would be able to treat them more effectively (Fredricks & Nakazawa, 2015).

Tanielian et al. (2014) conducted a monumental study called the RANDS study which aimed to assess the ability of mental health providers in the community to deliver culturally sensitive and high-quality care to veterans and their family members. Over 500 community mental health providers were surveyed to evaluate their competency with military and veteran culture, as well their training and experience with PTSD and depression. A key finding was only about 13% of the surveyed civilian providers met the criteria to be considered prepared to treat this population and a smaller number met the threshold for providing evidence-based care to this population (Tanielian et al., 2014). As a result, recommendations were made for training on cultural awareness and competency in the civilian mental health sector to improve care delivered to the veteran population. Understanding the influence of military culture on health-related behaviors is necessary for healthcare providers to appropriately care for veterans and research indicates interventions to improve understanding are warranted.

### Healthcare Needs of Veterans: The Invisible Wounds of War

The triad of PTSD, TBI and increased suicide rates amongst veterans returning from the war in Iraq and Afghanistan has been termed the “invisible wounds of war” (American Association of Colleges of Nursing, 2014). The term invisible is used as a lay person may assume that wounds of war must be physical, such as an amputation. However, PTSD and TBI are diagnoses that might not have a physical or visible

component that the average person may recognize. The literature reveals that these disorders disproportionately affect the US veteran population and those returning from the Global War on Terrorism have an even higher incidence of these diagnoses. It has been estimated that PTSD and TBI affect one in six troops, or approximately 300,000 veterans, returning from Afghanistan and Iraq (Johnson et al., 2013). In addition, rates of suicide are higher among veterans than for the general population. Younger veterans, between the ages of 18 to 34 years, have the highest incidence of suicide by firearm (Johnson et al., 2013). To provide high-quality and effective care to veterans, non-VA civilian healthcare providers need to be aware of these invisible wounds of war so that they can screen, treat, or refer their veteran patients appropriately.

### Posttraumatic Stress Disorder (PTSD)

PTSD can affect patients in the general population, but veterans have a significantly higher chance of developing this disorder. It has been reported that veterans are diagnosed with PTSD four times more than the general population (Olenick, Flowers, & Diaz, 2015). PTSD has plagued war veterans for many years; however, in past wars this term was not used. Johnson et al. (2013) relates the terms of “shell shock”, combat fatigue, and combat neurosis to prior wars, with the term PTSD not being utilized until the 1980s. It was at that time that mental health providers began to categorize this disorder on the Diagnostic and Statistical Manual of Mental Disorders (Johnson et al., 2013). This was significant because the constellation of symptoms related to PTSD now had formal diagnostic criteria that providers could utilize when diagnosing this disorder.

PTSD is a clinical syndrome that is often described by patients as re-experiencing a traumatic event through intrusive and disturbing thoughts (Quinlan et al., 2010). These

intrusive and disturbing thoughts can be mentally and physically debilitating to the veteran. The U.S Department of Veterans Affairs (2016) has further classified the symptoms of PTSD into four categories: intrusive symptoms or flashbacks, avoidance of reminders of the event, negative thoughts and feelings, and feeling on edge or hyper vigilance. In addition to these symptoms, Richards et al. (2016) noted that common manifestations of PTSD in clinical practice may include reports of sleep disturbances, substance abuse, domestic violence, anger issues, paranoia, depression, anxiety and marital or relationship issues. The symptoms of PTSD can be broad and affect almost every aspect of a veteran's life and non-VA civilian providers must be aware of PTSD symptoms to ensure effective healthcare is provided. Rossiter and Smith (2014) specifically emphasized the importance of the NP role in completing a comprehensive health assessment and examination when caring for veterans with PTSD so that appropriate and timely referrals can be made to qualified healthcare providers to improve patient outcomes.

### Traumatic Brain Injury (TBI)

It is estimated that 10% to 20% of the US veteran population, or approximately 280,000 soldiers, have experienced some form of TBI (Fischer, 2015). The percentage of veterans suffering from TBIs has increased from prior wars, specifically the Vietnam War. Johnson et al. (2013) compared the OEF/OIF war to the Vietnam War and noted that about 22% of OEF/OIF soldiers wounded in combat sustained an injury to the face, head, or neck whereas only 12%-14% of Vietnam veterans sustained head or face injuries. In the most recent war, the majority of TBIs have been related to blast exposure from an improvised explosive device and shrapnel fragments. With the increased use of

explosive devices, Johnson et al. (2013) acknowledged that the advancements in body armor, helmets and technology has increased the likelihood of soldiers surviving head injuries related to these blasts compared to prior wars.

TBI has been described as a traumatically induced structural injury to the normal brain function which is usually the result of a sudden blow or jolt to the head (Spelman, Hunt, Seal, & Burgo-Black, 2012). A TBI is further classified into three categories which are mild, moderate and severe. A mild TBI ranges from a brief change in mental status or a concussion to an extended period of unconsciousness that is accompanied by a change in mental status and amnesia (Olenick, Flowers, & Diaz, 2015). Mild TBI is the most common reported brain injury according to the 2015 Congressional Research Service report. This report noted that as of June 2015, approximately 8,000 veterans had sustained a severe TBI whereas more than 260,000 had sustained a mild TBI (Fischer, 2015). Healthcare providers should be aware of and screen for common cognitive and behavioral symptoms of a mild TBI which include irritability, sleep disturbances, depression, anxiety, trouble concentrating or difficulty in making decisions, fatigue and memory disturbances (Quinlan et al., 2010). These symptoms of a mild TBI may be present at the time of the exposure or they can manifest weeks later. According to Wheeler and Puskar (2015), most symptoms of a mild TBI resolve over a one to three-month period; however, symptoms can persist beyond that time period. Although some veterans have complete resolution of mild TBI symptoms, it is still imperative that healthcare providers screen their veteran population for TBI. Spelman et al. (2012) stressed the need for healthcare providers to be aware of these symptoms so that veterans can be referred to the appropriate mental health provider and receive neuropsychiatric

testing. A moderate to severe TBI is usually diagnosed at the time of exposure as symptoms are more pronounced than those associated with a mild TBI. Nonetheless, healthcare providers should obtain a thorough history and conduct a physical examination paying, particular attention to cranial nerves and vestibular function abnormalities when assessing for a moderate to severe TBI (Quinlan et al., 2010). Regardless of the severity of the TBI, it is essential that healthcare providers are aware of the symptoms and screen appropriately to improve the veteran's chances of recovery and the quality of their daily life.

### Suicide

According to Quinlan et al. (2010), rates of suicide amongst the veteran population had previously been lower than that of the general population; however, there has been a steady increase in suicide rates among Army and Marine Corps veterans returning from war. In the 2012 Suicide Data Report, it was estimated that 18 to 22 US veterans committed suicide per day and veterans now account for 20% of all completed suicides in the country (Kemp & Bossarte, 2012). The increase in suicide rates have been related to increased diagnoses of depression, PTSD and TBI amongst Global War on Terrorism veterans. Veterans that suffer from PTSD and TBI are at a higher risk for suicide due to the frequent presence of other factors, such as untreated depression and substance abuse (Algire & Martyn, 2013).

In order to curb the steady increase in suicide rates amongst the Global War on Terrorism veterans, it is imperative that healthcare providers are aware of the relationship between suicide and PTSD and TBI. Olenick, Flowers and Diaz (2015) stressed that every civilian healthcare professional should be able to identify veterans among their

patient population so they can promptly assess for and recognize suicide risk factors. Risk factors include engaging in risky behaviors such as substance abuse, reports of hopelessness, withdrawal from friends and family and talking about suicide or threatening to commit suicide (Johnson, et al., 2013). The later of these signs would require immediate action by healthcare providers. Non-VA civilian healthcare providers should obtain a veteran-centered health history to improve the identification of signs and symptoms related to suicide risk as evidence has shown that veterans who receive care from non-VA providers have a higher incidence of fatal suicide attempts compared to those who receive care through the VA (Johnson, et al., 2013). Civilian healthcare providers should also be aware of the resources the Department of Veteran Affairs provides for veterans, such as the VA Suicide Prevention Lifeline and Veterans Crisis Line. This information should be readily available to veterans who receive care in community practice settings. Improving civilian providers' knowledge about suicide and available resources can potentially save a veteran's life.

### Hazardous and Occupational Exposures

With each war, veterans have the potential for hazardous and occupational exposures. Some of the most notable exposures from past wars were Agent Orange, exposure to open burn pits, Hepatitis C and Gulf War Syndrome (American Academy of Nursing, 2014). The depth and extent of occupational and hazardous exposures from the Iraq and Afghanistan war have yet to be determined; however, there are concerns for exposures to burn pits and extreme temperatures. Burn pits have been used in many wars to get rid of debris and to dispose of chemicals. Johnson et al. (2013) noted that veterans exposed to burn pits complain of eye and throat irritation, breathing difficulties and

rashes. Soldiers were often also exposed to extreme temperatures of over 100 degrees while carrying over a hundred pounds of equipment which led to increased reports of heat stroke, fungal and bacterial infections and respiratory complaints (Spelman et al., 2012). In addition, the American Academy of Nursing (2014) noted that Iraq and Afghanistan veterans are at higher risk for infectious diseases such as malaria, typhoid fever, tuberculosis and rabies. The concerning increased incidence of rabies amongst these veterans has been related to animal bites, especially from dogs without vaccinations for this disease (Johnson, et al., 2013). Although the full extent of veterans' exposures in Iraq and Afghanistan has not been determined, it is essential for civilian providers to ask veterans about their military and deployment history to be able to identify exposure risks.

#### Education for Healthcare Providers

The literature on invisible wounds of war and understanding military culture reveal the need for educating healthcare providers on caring for veterans. Research by Fredricks and Nakazawa (2015) and Tanielian et al. (2014) demonstrated that civilian healthcare providers lack the knowledge needed to provide effective care to veterans. To address this issue, the Department of Veterans Affairs has instituted several educational programs within their own healthcare system, as well as partnered with several universities to educate nurses and healthcare providers on veterans' care. The VA has utilized workshops, online educational series, and conferences to educate VA and non-VA providers on the importance of veteran-centered care. Lypson, Ross, Zimmerman, Goldrath and Ravindranath (2016) developed and implemented a workshop on caring for veterans, and evaluated the effectiveness of the veteran-centered learning. The live face-to-face workshop consisted of group discussions, videos, and active learning techniques

such as reflective writing. Of the 37 participants, consisting of physicians, nurses, and one psychologist, the vast majority were VA employees. Findings revealed that 78.1% of the participants indicated the workshop improved their knowledge and attitudes towards veterans' care and 64.7% reported a better understanding of how to care for veterans (Lypson et al., 2016). The study concluded there is a continued need for education on veteran-centered care and it was emphasized that non-VA community providers also require knowledge and understanding of the unique needs of the veteran population.

The VA is one of the largest employers of nurses in the US and as a result, numerous nursing organizations have partnered with Joining Forces to help support America's veterans. The biggest endorsement was in 2012 by the American Association of Colleges of Nursing (AACN) which pledged to have over 500 nursing schools make a commitment to educating over 3 million nurses on the unique healthcare needs of veterans and their families (AACN, 2014). The goal of this initiative is to incorporate veteran-centered learning and veteran-centered experiences into nursing curricula. Providing veteran-centered learning experiences will have a positive impact on veterans because nurses will be able to recognize the signs of disorders such as PTSD, TBI, and suicide (AACN, 2014). In addition to Joining Forces, the Department of Veterans Affairs established the VA Nursing Academy. This program consists of partnerships with 18 nursing schools across the US and aims to prepare compassionate, highly educated nurses to care for the nation's veterans (Carlson, 2016). Despite the emergence of several recent initiatives and nursing programs focused on improving the care delivered to veterans, the current literature lacks research findings related to the impact of veteran-focused

education for healthcare providers. In addition, a lack of research investigating the impact of veteran-specific educational interventions on civilian NPs was noted.

NPs play a critical role in caring for veterans and their families. The American Academy of Nurse Practitioners (AANP) has also partnered with Joining Forces due to the crucial role NPs have in caring for veterans and their families (AANP, 2012). The AANP recommends NPs increase their knowledge on caring for veterans by participating in veteran-centered continuing education opportunities, as well as through partnering with other community providers to ensure they are addressing veterans' unique healthcare needs and providing high-quality care. Although there are recent initiatives that stress the importance of education for NPs, no published research to investigate educational interventions specifically for NPs who care for veterans in the community was noted during the literature search. Johnson et al. (2013) confirmed that the current nursing literature regarding evidence-based care that is pertinent to the health concerns of veterans is very limited. Therefore, this DNP scholarly project will address this gap in the evidence by evaluating the impact of an online educational intervention on NPs' comfort level in caring for veterans.

#### Conceptual and Theoretical Framework

Two nursing frameworks were used to design and support this DNP scholarly project. The first is the conceptual framework *Novice to Expert* by Patricia Benner. This framework is relevant because it describes nurses' skill acquisition through education. Benner (1982) explained the development of skills and understanding of patient care occurs over time and results from sound education and a multitude of experiences. The

*Novice to Expert* framework depicts five different levels in which the nurse acquires and develops the skills necessary for effective patient care. The five stages are: novice, advanced beginner, competent, proficient and expert (Benner, 1982). This model defines “novice” as a beginner nurse who has no experience with the patient care situations in which they face (Alber, 2009). It is presumed that with any new task nurses will begin at the novice level, but through sound education and experiences they can advance through the five stages with the ultimate goal of becoming an expert. Benner’s framework is relevant to support the use of an online educational intervention to prepare non-VA civilian NPs to care for veterans. The educational intervention aims to assist non-VA civilian NPs, who are in the novice or advanced beginner stages with respect to the area of veterans’ healthcare, to increase their comfort and familiarity for veterans’ care. The information, resources, and case studies provided as part of the educational intervention aim to promote NPs to advance past the novice and advanced beginner stages so they can effectively meet the needs of veterans in their clinical practice.

The second framework to support this project is the theory of *Culture Care: Diversity and Universality* by Madeleine Leininger. This theory was developed by Leininger after recognizing that nursing clinical experiences and training did not focus sufficiently on culture. In fact, she declared culture centered-care as a crucial missing link in nursing knowledge (Leininger, 1988). This theory underscores the importance of this DNP scholarly project as it aims to provide education on military culture and how it can affect NPs’ caring relationships and decision making when caring for veterans. Lenninger (1988) noted that care and culture were directly linked together and cannot be

separated in nursing actions or decisions. All patients, including veterans, deserve to have healthcare tailored to meet their cultural needs.

## CHAPTER 3: METHODS

### Design and Purpose

A one-group, pretest and posttest, quasi-experimental design was used to evaluate the impact of a pilot online educational intervention on non-VA civilian NPs' comfort level for providing care to veterans.

### Participants

A convenience sample of NPs in North Carolina was obtained. The North Carolina Board of Nursing (NCBON) granted permission to recruit NPs licensed in the state (see Appendix A) and provided a comprehensive list of licensed NPs that included name, email address, specialty area, and county of residence. The provided list indicated there are over 6,000 NPs licensed in North Carolina. Geographical area was used to narrow down the list of potential participants, and recruitment involved NPs in Mecklenburg and Rowan counties. These counties were selected because of the presence of a nearby VA hospital and need for community providers to screen for and refer veterans as appropriate.

According to G\*Power 3 software, a priori sample size calculations indicated a sample size of  $N=34$  was required to detect statistically significant changes in comfort. In G\*Power 3, the settings of paired samples  $t$ -test, medium effect size 0.50, alpha 0.05, and power 0.80 (Cohen, 1992) were inputted to determine the a priori sample size. Therefore, the list of potential participants of approximately 600 NPs in Mecklenburg and Rowan

counties was further narrowed by including only NPs listed as being employed in adult primary care settings which would entail care provision to veterans. Exclusion criteria were employment at the VA or in specialty areas such as women's health, surgery, and pediatrics. Next, every other NP on the list who met these pre-determined inclusion and exclusion criteria were selected for recruitment to participate, and recruitment emails were sent to 250 potential participants.

Recruitment of participants occurred following institutional review board (IRB) approval. (see Appendix B) An email invitation was sent to potential participants and included an explanation of the study, contact information for the DNP student investigator (SI), and the letter of informed consent. Also included in the email was a link to the Qualtrics© online project site which provided the pretest, educational intervention, and posttest. Email reminders were sent out once per week for a total of four weeks in attempt to ensure a sufficient sample size. In addition, potential participants were offered the opportunity to enter their email address into a drawing for one \$20 gift card upon completion of the pretest, educational intervention, and posttest to help facilitate adequate sample size and study completion.

### Setting

This project was implemented online. The internet has not only become a mainstay in people's homes, but its use has also vastly increased in education and research. Perrin and Duggan (2015) from the Pew Research Center noted that in 2015, approximately 84% of Americans used the internet in comparison to 52% in 2000. In addition, individuals with higher education such as graduate degrees were more likely to use the internet than those who did not hold a degree (Perrin & Duggan, 2015).

Continuing medical education (CME) has been extensively offered online for healthcare professionals for many years. Fordis et al. (2005) conducted a randomized controlled trial with 97 primary care physicians in Texas to determine if online CME can produce the same behavioral changes compared to those who attended live educational activities. In this study, online CME produced effective behavioral changes and a sustained knowledge gain over a 12-week period which was comparable to those who attended a live CME activity. In addition, Cook et al. (2008) conducted a meta-analysis of 214 studies from 1990 to 2007 that focused on internet based learning for health professionals. The analysis revealed online learning resulted in a large positive learning effect compared to no intervention at all. In addition, positive results were noted across a wide variety of learners, clinical topics and learning outcomes. This analysis also revealed that internet based learning was just as effective as education that was delivered in person (Cook et al., 2008).

Nurses, including NPs, often complete online learning to meet continuing education requirements for maintaining professional licensure (North Carolina Board of Nursing, 2016). Healthcare professionals, including nurses and NPs, are familiar with online learning and it has the capability of educating larger numbers of NPs than education delivered in classroom settings (Cook et al., 2008). In addition, online learning allows NPs to learn at their own pace and does not require the time and other resources that are associated with classroom education (Denissen, Neumann & Zalk, 2010). Therefore, this project was conducted online as NPs who provided their email address to the board of nursing are likely to have internet access, NPs are likely to be familiar with

online learning, and online learning has the capability of reaching larger numbers of NPs to provide needed education on caring for veterans.

### Variables

The independent variable was the online educational intervention (see Appendix C) created by the SI to educate non-VA civilian NPs on the unique healthcare needs of veterans. The educational intervention was delivered in module format and used evidence-based literature to provide information on military terminology, military culture, and current initiatives to improve veterans' care such as referrals and the CHOICE Act. The educational module also focused on the specific health issues of veterans such as PTSD, TBI, and suicide. Following the provision of information, two case studies were included to assist NPs to apply the knowledge gained to practice situations in an attempt to improve their comfort level for providing care to veterans. The educational module content was reviewed by three NPs experienced in providing physical and mental healthcare services to veterans to ensure content validity.

The dependent variable was self-reported comfort level for providing care to veterans. A 10-item tool (see Appendix D) developed and tested by Fredricks and Nakawaza (2015) was used. Five of the tool items measure comfort level for caring for veterans; specifically communicating with veterans, using military terminology, and addressing healthcare issues (hazardous exposures, TBI, and PTSD). These items employ a 5-point Likert scale with response options ranging from 1 (very uncomfortable) to 5 (very comfortable). In addition, 3 of the tool items measure familiarity with referrals and military culture (of active duty and reservist veterans) with response options ranging from 1 (very unfamiliar) to 5 (very familiar). An additional tool item asks participants to

indicate whether they need more education on veterans' healthcare with rankings from 1 (very much so) to 5 (not at all). Lastly, one tool item determines the percentage of patients seen at the provider's practice who are veterans. Tool validity was previously confirmed and it was utilized in a study of 141 civilian physicians with reported reliability of Cronbach  $\alpha$  0.88. Permission to use this tool was requested and approved (see Appendix E). The tool was administered immediately prior to and following the educational intervention in order to evaluate for statistically significant changes.

#### Data Collection Process

Potential participants were sent an email with study information, SI contact information, and the letter of informed consent. Study information included the study purpose, methods of data collection, and an estimated time requirement of 30-40 minutes for completion of the pretest, educational module, and posttest. Potential participants were also informed that they may enter their email address for a chance to win one \$20 gift card upon completion of the pretest, educational module, and posttest.

In the recruitment email (see Appendix F), potential participants were directed to click on a link to the online project site if they chose to participate. When they clicked on this link, the Qualtrics<sup>©</sup> study site opened to show study information and the letter of informed consent. To indicate their consent, participants selected either "Yes, I consent to participate in this study" or "No, I do not want to participate". If participants did not consent to participate, the Qualtrics<sup>©</sup> site closed. If they did consent to participate, the pretest opened to include a brief demographic questionnaire consisting of five items developed by the SI (Appendix G) and the 10-item tool to measure comfort level

(Fredricks & Nakazawa 2015). After completion of the pretest, the educational module intervention opened and participants clicked through to view information and complete case studies on caring for veterans. Upon completion of the educational module, the posttest opened and consisted of the same 10-item tool to measure comfort level (Fredricks & Nakazawa 2015) as the pretest. At the end of the posttest, participants were asked if they wished to enter their email address for a chance to win a \$20 gift card. If they selected “No, I do not want to enter my email address into the gift card drawing”, they were thanked for their time and the site closed. If they selected “Yes, I want to enter my email address into the gift card drawing”, they were re-directed to a separate Qualtrics© site to enter only their email address. Data and email address information was collected on two separate Qualtrics© sites so no identifying participant information was associated with the data.

Additional measures to protect participants’ confidentiality included the use of Qualtrics© which is password protected, using the Qualtrics© setting of anonymous, and maintenance of the potential participant list in a locked drawer until project completion. Further, the Qualtrics© site was deleted and the list of potential participants was destroyed following project completion. The Qualtrics© site remained open to participants for a total of 4 weeks and after that time, it was closed and data analysis began.

### Data Analysis

Data was transferred from Qualtrics© to SPSS version 23 for data analysis and incomplete data was screened out. Descriptive statistics were used to present information obtained from SI-developed demographic questionnaire, as well as pretest and posttest

mean and median scores for each item measuring comfort level, familiarity, and the need for education. Paired *t*-tests were to be used to determine statistically significant changes from pretest to posttest scores; however, a non-parametric alternative test for use with repeated measures was planned in the instance of small sample size (Dancey C, Reidy J, Rowe R, 2012). Due to the sample size, the Wilcoxon signed rank test was used to evaluate for statistically significant changes in each tool item, with  $p < .05$ . In addition, items measuring comfort were summed and items measuring familiarity were summed to represent overall levels of comfort and familiarity. The Wilcoxon signed rank test was again used to determine statistically significant changes in overall comfort and familiarity, with  $p < .05$ .

## CHAPTER 4: RESULTS

A recruitment email was sent to 250 potential NP participants from the NCBON list. Reminder emails were then sent once per week for a total of 4 weeks. A total of 15 potential participants consented to participate in this pilot study; however, only 11 completed the study for a response rate of 4.4%. In addition, posttest data included 10 total participants because one did not complete the posttest survey. Due to the small sample size, the non-parametric Wilcoxon signed rank test was used to analyze for statistically significant changes.

### Demographic Information

Descriptive analyses revealed all participants were female ( $N = 11$ ). More than half of the sample (54.5%) had less than 5 years of NP experience and another one-third (36.4%) had between 6 to 10 years of experience. The majority of the participants resided in Mecklenburg County ( $n = 9$ ) and their areas of specialty varied across five areas in healthcare. Areas of specialty were: primary care (27.3%), retail health (27.3%), hospital or specialty service (18.2%), psychiatry (9.1%), and other (18.2%). The item from the Fredricks and Nakazawa (2015) tool to measure the percentage of patients who are veterans in their practice site is also included as a descriptor of the sample. More than half (54.5%) of the respondents indicated veterans comprised 0%-20% of their patient population, while two participants reported veterans comprised 80%-100% of their

patient population. This is likely due to the two participants who indicated some employment at the VA. Table 1 displays the demographic information of the participants.

Table 1. Demographic information ( $N=11$ ).

<i>Demographics</i>	<i>n</i>	<i>Percentage % (100)</i>
<b>Gender</b>		
Male	0	0
Female	11	100
<b>Years of Experience</b>		
0-5 years	6	54.5
6-10 years	4	36.4
More than 15 years	1	9.1
<b>VA Employee</b>		
Yes	2	18.2
No	9	81.8
<b>County</b>		
Mecklenburg	9	81.8
Rowan	2	18.2
<b>Area of Specialty</b>		
Primary Care	3	27.3
Hospital/Specialty service	2	18.2
Retail Health	3	27.3
Psychiatry	1	9.1
Other	2	18.2
<b>Veteran patient population</b>		
0-20%	6	54.5
21-40%	2	18.2
41-60%	1	9.1
61-80%	0	0.0
81-100%	2	18.2

### Comfort Level

The primary objective of this DNP scholarly project was to assess the impact of the online educational intervention on NP participants' comfort level for caring for veterans. Five of the 10 items from the tool developed by Fredricks and Nakawaza (2015) measured self-reported comfort level for providing care to veterans. The 5 items measured comfort level for communicating with veterans about service-related conditions, using military terminology, and addressing veteran-specific healthcare issues (hazardous exposures, TBI and PTSD) using a 5-point Likert scale ranging from 1 (very uncomfortable) to 5 (very comfortable). A Wilcoxon signed rank test was used to detect statistically significant changes from the pretest to posttest for each item. Analysis revealed statistically significant improvements in comfort level for discussing hazardous exposures ( $z = -2.070, p = .038$ ) and understanding and treating TBI ( $z = -1.994, p = .046$ ) and PTSD ( $z = -2.460, p = .014$ ). No statistically significant change was found for items to measure comfort level for communicating with veterans about their service-related health conditions ( $z = -1.414, p = .157$ ) or for using military terminology ( $z = -1.414, p = .157$ ). Although there was no statistically significant change detected, mean scores for both of these items increased from pretest to posttest. In fact, mean scores for all 5 items measuring comfort level increased from pretest to posttest. Table 2 presents the mean and median pretest and posttest scores for each of the 5 items measuring comfort level. Next, all 5 items measuring comfort level were summed to reflect overall comfort for caring for veteran and the Wilcoxon signed rank test revealed a statistically significant improvement in overall comfort level ( $z = -2.374, p = 0.018$ ).

Table 2. Mean and median scores for items measuring comfort level.

	Pretest Mean (Median)	Posttest Mean (Median)
Discussing service-related conditions	3.18 (4.00)	3.50 (3.00)
Using military terminology	2.73 (3.00)	3.10 (3.00)
Understanding and treating hazardous exposures	2.18 (2.00)	3.00 (3.00)
Understanding and treating TBI	2.73 (3.00)	3.50 (3.00)
Understanding and treating PTSD	2.91 (3.00)	3.70 (3.50)

### Familiarity

In addition to measuring comfort, the Fredricks and Nakawaza (2015) tool also consisted of 3 items to measure familiarity with military culture for active and reservist veterans, and referral and consultation services for this population. A 5-point Likert scale measured familiarity from 1(very unfamiliar) to 5(very familiar). The Wilcoxon signed rank test was again used to analyze for statistically significant changes from pretest to posttest for each of the 3 items measuring familiarity. Statistically significant improvements were noted for all 3 items. Familiarity with military culture of active veterans ( $z = -2.058, p = .040$ ), military culture of reservist veterans ( $z = -2.251, p = .024$ ), and with referral and consultation services for veterans ( $z = -2.414, p = .016$ ) all significantly improved from pretest to posttest. In addition, mean scores for each of these 3 items increased from pretest to posttest. Table 3 presents the mean and median pretest

and posttest scores for each of the 3 items measuring familiarity. Next, the 3 items measuring familiarity were summed to represent overall familiarity level. The Wilcoxon signed rank test was used and revealed a statistically significant improvement in overall familiarity ( $z = -2.371, p = .018$ ).

Table 3. Mean and median scores for items measuring familiarity.

	Pretest Mean (Median)	Posttest Mean (Median)
Military Culture (active duty)	2.18 (3.00)	3.20 (3.00)
Military Culture (reservist)	2.36 (2.00)	3.30 (3.00)
Understanding referral and consultative services	2.09 (2.00)	3.20 (3.00)

#### Training and Education

A key component of the Fredricks and Nakawaza (2015) tool was an item to determine participants' self-reported need for more training and education on how to care for veterans. A 5-point Likert scale was again used and response options ranged from 1 (very much so) in need of education to 5 (not at all) in need of education. A Wilcoxon signed rank test was used and a statistically significant improvement in NP participants' reported need for education on veterans' care ( $z = -2.251, p = .024$ ) was noted. Mean and median scores for this tool item improved from a mean of 1.91 and median of 1.00 on the pretest to a mean of 2.90 and median of 3.00 on the posttest.

## Discussion of Results

Despite the small sample size of 11 NP participants, statistically significant improvements in comfort resulted. All participants in this pilot study reported that they provide healthcare to veterans in their clinical practice, yet mean pretest scores on the 5 items to measure comfort level were low (range 2.18 to 3.18) indicating participants were not comfortable in caring for veterans. This underscores the importance of educational interventions to improve NPs' comfort level for caring for veterans. Posttest findings showed an increase in mean scores for each of the 5 items measuring comfort level (range 3.00 to 3.70), demonstrating a resultant moderate comfort level. Further, statistically significant improvements were achieved for 3 of the items: comfort level for discussing hazardous exposures ( $p = .038$ ) and understanding and treating TBI ( $p = .046$ ) and PTSD ( $p = .014$ ) all significantly improved. Although changes in comfort level for communicating with veterans about their service-related health conditions ( $p = .157$ ) and using military terminology ( $p = .157$ ) were not statistically significant, improved mean scores have clinical significance for veterans receiving healthcare from the 11 NP participants. Improved mean scores indicate the educational intervention improved comfort for these components of veterans' care and statistical significance may have resulted if the sample size were larger. In addition, overall comfort level for caring for veterans significantly improved following the online educational module ( $p = 0.018$ ), which was the major objective of this project. The online educational module was designed to impart not only knowledge, but also used case studies providing NP participants with opportunities to apply their knowledge and improve their comfort level for caring for veterans. This is the first known pilot study to investigate the impact of

online education on NPs' comfort level for caring for veterans, and additional study on this topic is important.

The measurement tool also contained 3 items to evaluate familiarity, and all 3 items showed statistically significant improvements from pretest to posttest. Familiarity with military culture of active veterans ( $p = .040$ ) and reservist veterans ( $p = .024$ ), as well as with referral and consultation services for veterans ( $p = .016$ ) all significantly improved. Mean scores for each of the 3 items ranged from 2.09 to 2.36 on the pretest indicating the NPs were unfamiliar with these topics, while posttests mean scores improved to a range of 3.20 to 3.30, showing moderate familiarity. Lastly, the participants indicated a strong need for more education and training on veterans' care prior to reviewing the online educational module, with a mean pretest score of 1.91 on this item. This finding is significant and demonstrates that information on caring for veterans was likely lacking in their NP education and training. On the posttest, the mean score for this item improved to 2.90 which was a statistically significant change ( $p = .024$ ) in participants' reported need for education and training. This indicates that the 30 minute online education improved NP participants' perceived need for more education on veterans' care. However, the posttest mean score indicates the civilian NPs in this study continue to have a desire for more education and training. Even after completing the online educational module, none of the NP participants indicated they did not have a continued need for education on the care of veterans. Education about providing care to veterans is important to non-VA civilian NPs, and results of this pilot study indicate online education can be an effective educational option.

## CHAPTER 5: IMPLICATIONS FOR PRACTICE

The findings of this pilot study are relevant to clinical practice because non-VA civilian NPs provide care to veterans and it is essential they are educated and trained on the unique healthcare needs of this population. With the recent institution of the CHOICE Act, veterans are eligible to receive care from providers outside of the VA (US Department of Veterans Affairs, 2014) and a large portion will seek healthcare services from non-VA civilian NPs (Convoy & Westphal, 2013). Two prior studies found civilian providers were not knowledgeable or comfortable in providing care to veterans (Fredricks & Nakazawa 2015; Tanielian et al. 2014), but NPs' comfort for providing care for veterans is not known. Civilian NPs must be prepared to provide veterans with effective care that is tailored to their unique healthcare needs. Recent initiatives aim to ensure NPs and nurses are educated and prepared to care for the nation's veterans (AANP, 2012); however, published research to show effective methods of educating and preparing NPs to care for veterans is lacking (Johnson et al., 2013). This DNP scholarly project was the first known pilot study to examine the impact of an online educational intervention on non-VA civilian NPs' comfort level for caring for veterans. Although the sample size was small, statistically significant improvements in comfort occurred from the pretest to posttest. NP participants' comfort level for discussing hazardous exposures and understanding and treating TBI and PTSD significantly improved. Mean scores in comfort level for communicating with veterans about service-related health conditions

and using military terminology also improved, although not significantly. These findings have clinical significance to the veterans who will receive healthcare from the 11 NP participants in this pilot study. Veterans who receive veteran-centered care have better patient outcomes as their healthcare provider is able to communicate more effectively and recognize veteran specific health issues (Koeing et al, 2014).

In this pilot study, statistically significant improvements in NP participants' comfort and familiarity about caring for veterans were noted following the online educational intervention. It also satisfied NP participants' desires for education and training on caring for veterans to an extent. On the pretest, scores to measure a need for education and training were very low and participants reported a strong need for more education and training on veterans' care. This indicates that information on providing veteran-specific healthcare was likely lacking in their initial NP education and training. This has implications for nurse educators who teach in NP programs. It is important to prepare non-VA civilian NPs to care for veterans and this should begin during their initial NP education. This may be accomplished through integrating veteran-specific concepts throughout the NP curriculum or by having a dedicated class or practicum on veterans' care. The mean posttest score for the item related to education and training shows that although there was an improvement, the civilian NPs in this study continue to have a desire for more education and training even after completing the online educational module. Being educated and trained to provide care to veterans was important to the non-VA civilian NPs in this pilot study. All participants reported caring for veterans in their practice settings and data findings show veteran-specific education is desired. Utilizing online education can be an effective way to improve comfort level among non-VA

civilian NPs' that care for veterans on a daily basis. It is imperative that further research be conducted to investigate civilian NPs comfort level in caring for veterans so interventions such as online education can be designed and implemented.

Although DNP scholarly projects can be limited by the sample size (Brown & Crabtree, 2013), as was the case in this pilot study, they aim to provide a foundation for future scholarship (AACN, 2006). Therefore, it is important to determine a plan to utilize the scholarly work and pilot study findings to improve clinical practice. As a result of this pilot study, the SI plans to utilize the findings to apply for a program grant to develop an online educational module that meets the requirements for continuing medical education (CME) credits in order to reach a larger NP audience. Development of this online educational module will include increasing the evidence-based content on comfort items that did not reach statistical significance in this pilot study; namely communicating with veterans about their service-related health conditions and using military terminology. Interactive components, such as case studies, will again be utilized to allow NPs to apply their knowledge in aims of improving comfort level for caring for veterans. In addition, the program grant will also aim to develop print materials and brochures regarding veteran-specific healthcare issues for dissemination to NPs in Mecklenburg and Rowan Counties in North Carolina. Further, pilot study findings will be used to develop an interactive learning video with additional case studies that can be used during new employee education for civilian providers that begin employment with a VA medical center.

## Recommendations

Due to the fact that this was the first known project to investigate the impact of online education on non-VA civilian NPs' comfort level, it is important for further investigation. In addition, there were limitations to this pilot study that should be addressed in future research. The study is limited by the small sample size of  $N = 11$  participants. Further, the sample was not diverse with respect to gender and information on participant race/ethnicity was not collected. Future research should aim to recruit a large and diverse sample to improve generalizability (Dancey et al., 2012).

There are a multitude of factors that could have contributed to the low response rate. One possible reason may have been the online study design versus live presentation of the information. Curran, Fleet and Kirby (2010) conducted a study on two types of internet learning; scheduled group formats with peer discussion and a facilitator or on demand access. It was found that participants had higher satisfaction with scheduled group formats. Future research on educating NPs about veterans' care may seek to compare different formats for delivering online education to determine the most effective method. In addition, Denissen et al. (2010) noted that one of the potential pitfalls of internet research is the technology generational gap in those who participate in online surveys. In this pilot study, the age of the participants was not obtained; however, years of NP experience revealed that more than half of the sample had less than 5 years of experience. This indicates that participants in this pilot study were likely exposed to technology in their education versus NPs who received their education prior to the wave of digital technology. Although online education is helpful in reaching larger numbers of NPs, use of other formats, such as classroom education, should be investigated especially

for those NPs who do not prefer the online delivery of education. Lastly, the length of the online educational module may have deterred potential participants as some studies reveal that short-concise online surveys tend to have higher response rates (Cook et. al, 2008). Future studies investigating online education on veterans' care may consider offering all participants an incentive to participate such as a continuing education certificate. This may improve response rates and increase the sample size of future research studies on this topic.

The online educational intervention significantly improved comfort level in this pilot study; however other methods of educating NPs on veterans' care may also be effective. Other educational interventions, such as classroom education, should be examined. In addition, the delivery of the online education fusing live interactive training or case-based discussion should be further explored. Further, future studies should seek to compare educational methods to determine the best way to educate non-VA civilian NPs on veterans' care. Researching the educational styles or preferences of NPs should also be explored. It is important to determine the best method of educating NPs so that educational interventions can be designed and implemented. Due to the lack of male NP responses, it might be interesting to explore the difference in male and female NP learning styles or which studies appeal to each gender. It is possible that using words such as "comfort" in the study title may have deterred male participants. Use of focus groups or interviews might be an interesting way to explore this topic further. Lastly, as education on veterans' care is incorporated into NP curricula, investigating and publishing the results would add to the very limited evidence on best methods for preparing NPs to care for veterans. Results pertaining to the current initiatives to

incorporate veteran-specific curriculum in nursing and NP programs is vital to ongoing efforts to improve the care of the nation's veterans. More research is needed on effective methods for educating NPs, and research capable of linking educational interventions to patient outcomes is vital.

### Summary

This DNP scholarly project sought to develop an effective online educational intervention on veteran specific healthcare issues for non-VA NPs' and to evaluate its impact on comfort levels in for caring for this population. Although the sample size was smaller than anticipated, statistically and clinically significant improvements were noted following the online education. Overall comfort level improved and NP participants reported an increased familiarity with military culture and referrals or consultations. A critical finding was the report of need for more education and training by the non-VA civilian NP participants who are caring for veterans on a daily basis their clinical practice, which confirmed the need for continuing study of this topic. More research is needed to investigate ways to prepare non-VA civilian NPs to provide veteran-centered care, as well as their patient outcomes as a result of this education.

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## APPENDIX A: NCBON EMAIL CORRESPONDENCE

Hello,

Thank you for contacting the NC Board of Nursing. Your request has been forwarded to our Education and Practice departments for further review. You should expect to hear from a member of our staff soon.

Lonzell Fogle,

North Carolina Board of Nursing  
P.O. Box 2129  
Raleigh, NC 27602

Phone: (919) 782-3211 ext. 246  
Fax: (919) 781-9461

[lfogle@ncbon.com](mailto:lfogle@ncbon.com)

"Serving the Public Through Regulatory Excellence"



**Lonzell Fogle <[lfogle@ncbon.com](mailto:lfogle@ncbon.com)>**

to me

Hello,

Attached is the Nurse Practitioner data set you've requested.  
Please acknowledge receipt of files

## APPENDIX B: IRB APPROVAL

**To:** Keshia Pettus School of Nursing

**From:** Office of Research Compliance

**Date:** 11/01/2016

**RE:** Notice of Approval of Exemption

**Exemption Category:** 2.Survey, interview, public observation **Study #:** 16-0927

Nov 2!

**Study Title:** The Impact of an Online Educational Intervention for Non-VA Civilian Nurse Practitioners: A Measure of Comfort in Caring for Veterans

This submission has been reviewed by the IRB and was determined to meet the Exempt category cited above under 45 CFR 46.101(b).

This determination will expire one year from the date of this letter. It is the Principal Investigator's responsibility to submit for renewal of this determination.

**Study Description:**

Providing effective and evidence-based healthcare for veterans is a national priority. However, there is scarce information in the academic literature regarding effective interventions for educating non-VA civilian nurse practitioners on caring for veterans. This Doctor of Nursing Practice (DNP) scholarly project will test the effectiveness of an online educational module designed to educate non-VA civilian nurse practitioner about the unique healthcare needs of veterans. A pretest and posttest design will be used to assess participants' comfort level using a 10-item survey.

**Investigator's Responsibilities:**

It is the investigator's responsibility to promptly inform the committee of any changes in the proposed research, and of any adverse events or unanticipated risks to participants or others. You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented.

If applicable, your approved consent forms and other documents are available online at [http://uncc.myresearchonline.org/irb/index.cfm?event=home.dashboard.irbStudyManagement&irb\\_id=16-0927](http://uncc.myresearchonline.org/irb/index.cfm?event=home.dashboard.irbStudyManagement&irb_id=16-0927).

Data security procedures must follow procedures as approved in the protocol and in accordance with ITS Guidelines for Data Handling and the End User Checklist.

Please be aware that approval may still be required from other relevant authorities or "gatekeepers" (e.g., school principals, facility directors, custodians of record).

## APPENDIX C: CONTENT OF ONLINE EDUCATIONAL INTERVENTION

Current Initiatives to improve Veterans Care	Joining Forces, Veterans Choice Act, Have You Ever Served campaign
PTSD, TBI, Suicide	Incidence, signs and symptoms, treatment, referrals
Military culture	Definition, provider communication, best practices, deployment versus reserve
Hazardous exposures	Chemical, burn pits, rabies
Referral information	Provide list of resources such as Veterans Crisis line, Suicide Prevention Hotline, VA information line and several others
Case Studies	Two case study scenarios with veteran specific issues, questions and evidence-based answers

## APPENDIX D: PRETEST AND MEASURMENT TOOL

Please circle the best answer for your practice or your specialty:

1. What percentage of your practice includes veterans as patients?

**0-20%**      **21-40%**      **41-60%**      **61-80%**      **81-100%**

2. How comfortable do you feel discussing medical conditions related to veteran's military service?

<b>Very uncomfortable</b>	<b>moderately comfortable</b>	<b>Very comfortable</b>
1	2	3
		4      5

3. How comfortable are you with military terminology that veteran's use to describe their service?

<b>Very uncomfortable</b>	<b>moderately comfortable</b>	<b>Very comfortable</b>
1	2	3
		4      5

4. How comfortable are you with discussing health related exposures and associated risks (e.g. depleted uranium, smoke, chemical weapons) that veteran's might experience?

<b>Very uncomfortable</b>	<b>moderately comfortable</b>	<b>Very comfortable</b>
1	2	3
		4      5

5. How comfortable are you in understanding the diagnosis and treatment of TBI (Traumatic Brain Injury)?

<b>Very uncomfortable</b>	<b>moderately comfortable</b>	<b>Very comfortable</b>
1	2	3
		4      5

6. How comfortable are you in understanding the diagnosis and treatment of PTSD (Post Traumatic Stress Disorder)?

<b>Very uncomfortable</b>	<b>moderately comfortable</b>	<b>Very comfortable</b>
1	2	3
		4      5

7. How familiar are you with referral and consultation services for veterans (e.g. Military One Source, etc.)

<b>Very unfamiliar</b>	<b>moderately familiar</b>	<b>Very familiar</b>
1	2	3
		4      5

8. How familiar are you with military culture and lifestyle conditions of veteran on active duty?

<b>Very unfamiliar</b>	<b>moderately familiar</b>	<b>Very familiar</b>
1	2	3
		4      5

9. How familiar are you with the military culture and lifestyle conditions of military reservists?

<b>Very unfamiliar</b>	<b>moderately familiar</b>	<b>Very familiar</b>
1	2	3
		4      5

10. Do you feel that you need more training/education/information on how to properly identify, communicate with and treat veterans who have military related health conditions?

<b>Very much so</b>	<b>Somewhat</b>	<b>Not at all</b>
1	2	3
		4      5

## APPENDIX E: PERMISSION TO USE MEASUREMENT TOOL

**Fredricks, Todd <fredrick@ohio.edu>**

Apr 21

to me

Consider this to be my permission to use my survey instrument in your work with the provision that you cite that use appropriately.

Kindly,

Todd

**Todd R. Fredricks, DO**

**COL MC SFS WVARNG**

**Assistant Professor Family Medicine**

**OUHCOM**

Tel: 740-350-5266

fredrick@ohio.edu

**APPENDIX F: PARTICIPANT RECRUITMENT EMAIL**

**Dear Nurse Practitioner Colleagues,**

**You are invited to participate in a research study to test the effect of an online educational module about caring for veterans. Non-VA, civilian nurse practitioners are invited to participate in this study to determine the effect of online education on comfort level for caring for veterans.**

**The pretest and posttest survey takes about 10 minutes to complete, and the online educational module is self-paced and requires approximately 20-30 minutes of time to complete. After completion of the posttest, participants may choose to enter their email address for a chance to win a \$20 Target gift card. Your participation in this study is completely voluntary and the information you provide will be kept confidential.**

**Please email Keshia Pettus with any questions: kpettus2@uncc.edu.**

**Please click the survey link to begin or copy and paste the URL into your internet browser :**

**[https://uncchhs.co1.qualtrics.com/SE/?SID=SV\\_3Fd4JYyWinPmEUR](https://uncchhs.co1.qualtrics.com/SE/?SID=SV_3Fd4JYyWinPmEUR)**

**Thank you for your time and participation!**

**Keshia Pettus, MSN,FNP-BC**

**University of North Carolina at Charlotte**

## APPENDIX G: SI DEVELOPED DEMOGRAPHIC QUESTIONS

1. What is your gender?

A. Male

B. Female

2. How many years of nurse practitioner experience do you have?

A. 0-5 years

B. 6-10 years

C. 11-15 years

D. more than 15 years

3. Do you currently work for the Department of Veterans Affairs?

A. Yes

B. No

4. What County do you work in as a nurse practitioner?

A. Mecklenburg

B. Rowan

C. Other \_\_\_\_\_

5. What is your area of specialty?

A. Primary Care

B. Emergency Medicine

C. Hospital/Specialty i.e. Cardiology, Nephrology

D. Retail Health

E. Pediatrics

F. Women's Health

G. Geriatrics

H. Psychiatry

I. Other \_\_\_\_\_