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Identification and PTSD Screening of Military Veteran Patients in Community Healthcare: A Quality Improvement Project

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Table of Contents

Dedication……4

Acknowledgements……..5

Abstract……7

Introduction and Background……...8

Problem Statement…….....9

Review of the Literature…….. 9

Primary Prevention……..... 10

Secondary Prevention with the PC-PTSD Screening Tool……11

Comorbid Consequences of PTSD……..…...12

Evaluation of PTSD Screening Tools …….…….....13

Theoretical Framework……..15

Project Design and Methods…….. 17

Settings and Resources ……...……..18

Description of the Population……..……18

Organizational Analysis of Project Site…….……..19

Goals and Objectives…… 20

Implementation …...…….. 21

Ethics and Human Subjects Protection……..23

Results……24

Facilitators and Barriers……..…28

Limitations…….29

Discussion……..30

Interpretation……..31

Conclusion…..……..…….. 32

Nursing Practice Implications……32

References…….……36

Appendix A.…….……..41

Appendix B…… 42

Appendix C…… 46

Dedication

This project is dedicated to the men and women who have served or are currently serving in the United States military. Knowing that this duty is not without consequences, it takes an exceptional person to dedicate his or her life and liberty to sacrifice for the freedom and safety of others. These brave men and women suffer from visible and invisible wounds and scars. My purpose is to shed light on these complicated injuries so that veterans can get the time and attention they deserve.

To the active duty airmen I lived and worked with at the Wright Patterson Air Force Base Medical Center in Dayton, Ohio and to those who served along side me in Kandahar, Afghanistan: this dedication reaches out to you and hopes to find you well. To those 895 wounded warriors of whom my deployed unit cared for and safely evacuated from the combat zone: this dedication was built with thoughts of you and hopes for your full recovery. To those service members who gave the ultimate sacrifice for our country: you will never be forgotten.

This dedication is further extended to all of my family members who are currently serving and whom have completed their honorable service commitment to our country: Dad, Jacob, Uncle Jonathan, Uncle Glenn, and all of my cousins: Dennis, Shaun, Lloyd, Erin, Jacob, Dylan and Jenna Rose. Our family represents a service to every branch of the military. I am so proud of you all and have the highest respect for each one of you. Thank you for your service.

As a separate entity of service and sacrifice to our nation, the members of our local police, fire, and ambulance departments are exposed to similar conditions of our military. PTSD similarly affects these noble individuals and further effort should be placed on their mental and physical wellness. To my husband, Tim, and father, Norman: I am so proud of the service you have provided for our safety and security here on the home front. Thank you.

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have all played an essential role in my success and helped Tim, our boys, or me when we needed it the most. Moreover, to my family members Auntie Linda, Auntie Barbara, Aunt Suzanne, Deb, Lora, Tim and Janet, you have all reached out in unique ways to show your love and support, for which I am grateful. Thank you.

To all of my supportive friends, you know who you are; I would like to thank you for the constant encouragement, support, and bursts of energy and fun. You have all helped me balance out the stress, struggles, late nights, and time spent working on this project. A special thanks to Dr. Corinne Marie Sadlowski, my childhood friend turned lifelong confidante. I am so proud of your accomplishments and admire your work ethic, dedication, and sweet heart. You're an inspiration in my endeavors and I am thankful for your love and support throughout the years no matter the distance between us.

To my late Nana Helen, I love you and will think of you always. I will forever have your kind words, smile, and laugh warmly wrapped around me. To Grandpa Arthur, Grandpa Jacob, and Grandma Chris, I love and miss you all dearly. You have all influenced a special piece of my heart and are a part of everything I do in this world. I hope to make you all proud.

Abstract

Background: Military veterans are at an increased risk for post-traumatic stress disorder (PTSD) related to their prior military service. Establishing veteran status of patients cared for in civilian healthcare and screening for PTSD will increase the likelihood of identifying symptoms and prompt appropriate treatment. *Purpose:* The focus of this project is to increase practitioner awareness and knowledge of PTSD in veteran patients as well as to identify and screen veteran patients for PTSD symptoms utilizing the primary care PTSD screen (PC-PTSD). *Method:* To determine veteran status, patients over the age of 18 years in an internal medicine clinic will be asked during their appointment check-in if they have ever served in the military. Identified veteran patients will be handed a questionnaire with the PC-PTSD screen to fill out and bring into their exam. Analysis and discussion of the PC-PTSD results by providers will reveal risk for PTSD and identify if further treatment or intervention is warranted. *Results:* Fifteen providers and staff attended the education presentation and eight completed the pre/post-presentation questionnaire. Post-presentation, the questionnaires revealed an increase in knowledge from 90% to 100%. After the intervention was completed, 34 veterans were identified from the total 1434 patients seen during the 30-day implementation timeframe, with one veteran screening positive for PTSD. This reveals 1-2 veteran patients are coming to the clinic per day. *Clinical Implication:* Identifying patient veteran status will reveal PTSD symptomology that may have otherwise gone unrecognized or overlooked. Identifying even one veteran suffering from PTSD can lead to positive patient outcomes. A sustainable systemic approach to identifying and screening veterans for PTSD in civilian primary care is necessary to thoroughly and holistically care for this vulnerable population.

Keywords: primary care, post-traumatic stress disorder, PC-PTSD, military, veteran

Introduction and Background

United States (U.S.) military veterans are at an increased risk for multiple adverse health problems (Olenick, Flowers, & Diaz, 2015; Sayer et al., 2014) that may go unrecognized by civilian heath care providers if patients' prior military service is not identified. PTSD affects 20% of Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) veterans as compared to 7% of the general population (VA, 2015). This vulnerable population is also adversely afflicted by anxiety, depression, substance disorders, and tragically 22 veterans a day commit suicide (Kemp & Bossarte, 2012).

The Department of Veterans Affairs (VA) (2014) calculated that in the fiscal year 2014, 6,397 veterans resided in Franklin County, Massachusetts (MA), 1,681 of which were enrolled in health care at the VA. Therefore, 4,716 veterans (74%) were being treated in the local community and are in need of comprehensive health assessments to address their specific risk factors for adverse health conditions related to their military service. Since the majority of veterans in Franklin County do not receive health care through the Veterans Health Administration (VHA), civilian providers need to be aware, educated, ready, and armed with resources to address veterans' unique needs.

Research has shown that military service increases mental health complications that can directly influence other health factors (Sareen, 2015). Possemato, Wade, Andersen, and Ouimette (2010) found that PTSD is associated with poorer health status including more disease diagnoses, physical symptoms and sick visits. Similarly, research by Outcalt et al. (2014) revealed that PTSD could also increase complications with perceived pain and cause the individual more distress. Pukay-Martin et al. (2012) further relate PTSD to an increased

likelihood of suicidal ideation (SI) when it is compounded with sleep disturbance, anger, financial and relationship hardship.

Of special concern, veterans often do not admit to SI or other PTSD symptoms (Dobscha et al., 2014; Sareen, 2015), which makes building rapport with the individual all the more important to thoroughly and accurately assess symptoms. This needed in-depth patient-provider relationship can help determine associated health risks or needed screenings to prevent further harm to this population. Given the handful of common and often interrelated problems veterans face, civilian providers need to be provided with awareness and education in order to effectively care for this population, especially when it comes to identification, diagnosis, treatment and management of PTSD.

Problem Statement

Lack of knowledge and awareness by health professionals contributes to the under diagnosis of PTSD in veteran patients as indicated by an inadequate systematic approach to identifying veteran status, assessing associated risk factors, and implementing the PC-PTSD screen in civilian primary care. Identification of veteran patients and intervening with implementation of the PC-PTSD at the moment of intake to a primary care appointment is a proactive approach to ensuring that this problem is addressed.

Review of the Literature

A comprehensive search of literature related to PTSD screening and veteran status yielded 41 articles. The search was conducted using the Cumulative Index of Nursing and Allied Health Literature (CINAHL) Complete, and PubMed of the National Library of Medicine. Using the National Library of Medicine's website for medical subject headings (MeSH) browser resulted in the following MeSH terms: *PTSD and combat disorders*. Inclusion criteria consisted

of publications within the last ten years that were peer-reviewed research articles of adult populations, written in the English language and had a linked full text.

Of the 41 articles found, six were utilized for review; a randomized controlled trial (RCT), an experimental, a non-experimental cross-sectional, a validation research study, one systematic review, along with a clinical practice guideline (CPG) were chosen based on their use of the PC-PTSD screening tool, verification of its effectiveness and usefulness in identifying PTSD symptoms in vulnerable populations. All articles demonstrated a high rating of evidence as determined by the Johns Hopkins Nursing Evidence-based Practice Rating Scale (JHNEBP) (Newhouse, Dearholt, Poe, Pugh, & White, 2005).

Primary Prevention

Primary prevention should begin with awareness; therefore, practitioners need to be educated on the overlapping symptoms of PTSD and other clinical symptoms presenting in their veteran patients. The veteran population has a higher risk for PTSD than the general population; 18.7% and 7.8%, respectively, and therefore needs extra time and attention for assessment of risk factors and identification of related symptomatology (Tiet, Schutte, & Leyva, 2013). The VA (2010) disclosed in their PTSD CPG that patients often do not admit to or are unaware they are suffering from PTSD.

Veteran patients often may have unrecognized symptoms hiding within a poor patient/provider connection. Some of the unrecognized symptoms may be anger, distrust, somatic conditions, and other trauma-related problems presented on the forefront of the office visit (Ramaswamy et al., 2005). These factors could distract from the possible root of patient complaints stemming from undiagnosed PTSD. There needs to be an increase in the level of provider awareness related to the common presenting symptoms of an underlying PTSD.

Secondary Prevention with the PC-PTSD Screening Tool

A simple and brief PC-PTSD screening tool has been shown to be effective and efficient in identifying patients suffering with PTSD symptoms (Campbell et al., 2007; VA, 2016). Incorporating use of the evidence-based PC-PTSD during patient visits with veterans will prompt identification and diagnosis of those suffering with PTSD, initiate needed treatment, and increase wellness in this population who seek care in civilian primary care. Research supports the utility of brief screening tools, such as the PC-PTSD, for identifying these undiagnosed cases of PTSD (VA, 2010).

The secondary prevention method of utilizing screening tools for PTSD should be implemented with all veteran patients. The U.S. Department of Defense (DoD) and the VA have mandated that the PC-PTSD be used during routine primary care visits (Tiet et al., 2013), thus displaying its significance and value for implementation in the community. This screening tool uses four yes/no questions assessing the presence of nightmares, avoidance, being on guard, and feeling numb with total scores ranging from zero to four (Tiet, 2013) with a positive result occurring when any three or more questions are answered 'yes.' A positive screen yields a further structured interview for official PTSD diagnosis or a referral to a mental health clinic.

Tiet, Schutte, and Leyva (2013) revealed the success of the PC-PTSD in identifying PTSD in a study of 411 U.S. veterans receiving treatment for substance use disorder (SUD) or mental health issues. Tiet and her research team found the measure had demonstrated good test-retest reliability and confirmed its validity. The sensitivity levels were discovered to be comparable to previous studies, yet the specificity levels were lower, yielding a possible higher rate of false positives (Tiet, 2013). However, the VA (2010) found the PC-PTSD to have good internal consistency (KR20=0.79) and test-retest reliability (r=.84; Prins et al., 1999). Similarly,

142 civilian SUD patients were screened with the PC-PTSD in a cross-validation study by vanDam, Ehring, Vedel, and Emmelkamp (2010) in which the PC-PTSD was found to be as effective in diagnosis of PTSD when compared to the extended eight-item Dutch version of the PC-PTSD and the Posttraumatic Diagnostic Scale (PDS).

Comorbid Consequences of PTSD

Individuals with SUD and those suffering from MH complications, most notably depression, are more at risk for PTSD (Tiet, Schutte, & Lyva, 2013; Campbell et al., 2007). Results of a randomized controlled trial (RCT) by Campbell et al. (2007) in which the PC-PTSD screen was conducted on 677 depressed patients concluded that PTSD was significant amongst the depressed population. The comorbidity of depression and PTSD, found to be associated with increased illness burden, poorer prognosis, suicidal ideation, and delayed response to treatment (Campbell, 2007), further illustrates the need of prompt and widespread PTSD screening and treatment among those at risk.

Morbid consequences of undiagnosed PTSD can result in worsened mental health, substance abuse, decreased quality of life, and an increased risk for suicide (American Psychiatric Association (APA), 2013; Tiet, Schutte, & Leyva, 2013). Campbell and associates (2007) utilized a multivariate analysis in their research to determine the relationship of PTSD between variables; examples include the presence of anxiety (83%) and panic attacks (45%) that were significantly higher in those with comorbid depression and PTSD (Campbell, 2007). In a non-experimental cross-sectional research study of 536 veterans screened with the PC-PTSD, Duax, Bohnert, Rauch and Defever (2014) found PTSD in veterans is concomitant with marital distress, social difficulties, and parenting difficulties which over time can lead to emotional hiding, numbing, irritability and anxiety that compromise health and wellness. Campbell (2007)

revealed that 36% of the depressed primary care sample had probable concurrent PTSD and warranted further interventions and possible referral for mental health treatment as this comorbidity presented suicide risk factors in 43% of the sample. Given that Campbell's study may not apply to the general population since it was conducted on 96% male veteran patients with depression, the evidence and results will still be beneficial to women and possibly life-saving when implemented in all medical practices. Other limitations in addition to lack of generalizability (Tiet et al., 2013) include the brevity of the PC-PTSD, the unreliable self-disclosing patient feature of the screening questionnaire, and slight modification of the tool by one study.

Evaluation of PTSD Screening Tools

Validity of the discussed studies could be compromised as the participants may have been influenced in some way with their PC-PTSD symptom reporting and thereby over or under-reported symptoms. Given the confirmed comorbidity of PTSD with other psychometric symptoms and negative health factors, the possible compromised validity of the self-reported PC-PTSD holds minimal relevance, as provider instinct and further investigation into possible diagnosis and treatment of PTSD is essential. Strengths of the discussed studies included high quality level of evidence and affirm an increase in positive PTSD screens amongst sample populations, concluding that PTSD may go undiagnosed if screening does not take place. Further strengths include the brevity, simplicity, and ease of implementation of the PC-PTSD, which should encourage compliance with recommended screening (VA, 2010). Screening prompts diagnosis, diagnosis prompts treatment, and treatment precedes healing. The effectiveness of the PC-PTSD in patients with known risk factors for PTSD is clearly evident in the outcomes of each research study and clinical practice guideline reviewed (Campbell et al.,

2007; Duax, Bohnert, Rauch, & Defever, 2014; Tiet, Schutte, & Leyva, 2013; VA, 2010; vanDam, Ehring, Vedel, & Emmelkamp, 2010).

Spoont, Arbisi, Fu, Greer, Kehle-Forbes, Meis, and Rutks (2013) conducted a systematic review of screens used to identify PTSD in primary care clinics. The screens included Breslau's Short Screening Scale, PC-PTSD, Single-item PTSD Screener (SIPS), Startle, Physiological arousal to reminders, Anger, and Numbness (SPAN), and the PTSD Checklist (PCL) (Spoont et al., 2013). The Breslau Scale has seven items with a yes/no response referencing avoidance, numbing, and arousal, which received a 0.84 retest reliability result with a sensitivity and specificity of 80 and 97%, respectively (Spoont et al.). The PC-PTSD has four items assessing re-experiencing, emotional numbing, avoidance, and hyper arousal with a yes/no response, showing a 0.83 retest reliability, sensitivity ranging from 77-91% and specificity ranging from 82-84% based on multiple studies. SIPS asks respondents a single item to indicate what degree they are recently bothered by a past traumatic event, showing a 0.63 retest reliability, 76% sensitivity and 79% specificity. SPAN has four items assessing startle, physiological arousal to reminders, anger, and numbness with a sensitivity ranging from 72-76% and specificity ranging from 71-82% based on different studies. The PCL is a 17-item self-report measure of PTSD symptoms, revealing a retest reliability of 0.96, sensitivity ranging from 60-94% and specificity ranging from 68-90% based on different studies (Spoont et al.).

Spoont et al. (2013) disclose how PTSD screening tools can improve detection of PTSD in primary care patients and that with the lack of sufficient studies examining each separate screening tool, one cannot be indisputably suggested for use over the other. However, the researchers do reveal that the VA uses the PC-PTSD as it is short, easy to administer, and has good psychometric properties but can be considered over- or under-sensitive when compared to

the PCL based on its cut-scores (Spoont et al.). The negative attribute of the PCL is that it contains many items non-specific to PTSD and may skew results and corresponding referrals or treatment. Given that each screening tool is generally comparable in effectiveness in accurately identifying PTSD symptomology in patients, providers cannot go wrong with utilizing one over the other.

However, as an evidence-based screening tool, the PC-PTSD is formatted specifically for use in the primary care setting and has been implemented, evaluated, and validated in numerous studies. It has been shown to be effective when utilized in the veteran population suffering with depression, substance abuse, lack of social support and emotional hiding (Campbell et al., 2007; Duax, Bohnert, Rauch, & Defever, 2014; Tiet, Schutte, & Leyva, 2013; VA, 2010; vanDam, Ehring, Vedel, & Emmelkamp, 2010). The PC-PTSD is also the screening tool of choice by the VA (Spoont et al., 2013). Campbell and colleagues (2007) assert the importance of educating non-VA practitioners of these facts and statistics of veteran healthcare given that 45% of their study sample received non-VA medical care and had psychiatric comorbidities with PTSD and depression. More concerning, this population is on the rise as Iraq and Afghanistan war veterans seek health care in the community. Given that the majority of veterans in Massachusetts do not seek healthcare at the VA (VA, 2014), civilian practitioners should be utilizing the PC-PTSD, as it has proven merit, is vital for identifying risk, postulating diagnosis, and initiating treatment of PTSD in an effort to achieve and secure wellness in this honorable population.

Theoretical Framework

Utilizing a theoretical framework will assist with development and implementation of a desired change (Zacgnini & White, 2012). Adding a theory to the foundation of change will make the process easier, as well as provide a plan and improve the likelihood of success

(Zaccagnini & White, 2012). Kurt Lewin was the first person to develop a model for the process of change that involves three stages described as, 1-*unfreezing* the current process, 2-*movement* into the new change of practice, and 3-*refreezing* the new practice as the expected routine (Lewin, 1951; Zaccagnini & White, 2012). Lewin's Change Theory will guide the DNP Project in its efforts to generate change in a primary care practice. It will be utilized to address the stated clinical practice problem, to include recognizing the need to identify veteran patients and implement the PC-PTSD screen in this population to assess the need for a mental health referral and/or treatment.

McGarry, Cashin, and Fowler (2012) explain details of the three stages in the Change Theory and elucidate how the need for an emotional influence may assist with unfreezing current practice. An example of this could be incorporating educating the change agents, such as practitioners and medical staff of the alarming suicide statistics on veterans coping with PTSD. Shirey (2013) further describes the unfreezing stage as recognizing the need for change, preparing, and prompting those involved to embrace the change. Conducting a gap analysis and presenting barriers hindering the desired outcome may also be utilized in this stage to further prompt urgency of this mission (Shirey, 2013). The second stage of movement or transitioning can include a cyclical aspect of trial and error (McGarry et al., 2012) when the new change is being learned and implemented. This can be a positive aspect of change as it identifies what works or doesn't in order to fit the unique environment where change is transpiring.

Additionally, Shirey (2013) states that the movement stage incorporates creating a plan, utilizing communication to engage people to carry out the change and overcome resistance. Encouragement and reiteration of the purpose of change can assist with ensuring compliance or willingness to change. Once the movement stage is underway, further education, follow-up and

monitoring will need to be continually assessed, ensuring effective implementation and achievement of refreezing change at the group level as evidenced by policy modifications and practitioner intention for continued action (McGarry et al., 2012 & Shirey, 2013).

Utilization and application of Lewin's Change Theory to this Doctor of Nursing Practice (DNP) quality improvement (QI) project was a beneficial guide to desired outcomes. The aspects of unfreezing, changing, and refreezing, can be firstly described as unfreezing the current method, or lack thereof identifying veteran patients and implementing this process into a standardized protocol. Secondly, the identification process was changed to add the subsequent PTSD screening, which uncovered potential hidden detriments of patient health and wellness previously undetected. Refreezing this new process into standard procedures enhanced the quality of comprehensive care given to veteran patients at the identified clinic.

Project Design and Methods

The DNP Project was of a QI design utilizing mixed methods of both qualitative and quantitative data analysis. Outcome evaluation was important as it provided accountability to the stakeholders, demonstrated quality improvement and effectiveness in improving wellness in the identified patient population, as well as affirmed the need of the project (Zaccagnini & White, 2014).

Quantitative data evaluation consisted of comparing the number of identified veteran patients to the number of PC-PTSD screens implemented. The sample size goal was 50 identified veteran patients, with an additional goal of screening 100% of those identified. Further evaluation compared the number of positive screens to the number of interventions performed, which also had a goal of 100%. All quantitative data evaluation was completed

through patient PC-PTSD form reviews. Descriptive statistics was used to analyze the quantitative data (Issel, 2014).

A focus group of participating providers and staff were given an introduction to the project idea, with the background and project need identified. Screening tools and the intervention plan were discussed and a detailed plan of action was laid out with the intended start date. Implementation strategies were outlined and intricately discussed with implementation of closed-loop communication and the teach-back method (Farris, 2015) to ensure understanding of expectations. A pre/post-presentation questionnaire was conducted to assess prior education and knowledge of the project topics and ensure acquisition of such during the presentation was effective (Table 1 Appendix B). Questions, concerns, and all other input were openly discussed. Qualitative evaluation methods were utilized to analyze and synthesize questionnaire data.

Post-project implementation census of provider belief of success and usefulness of the project was conducted via a widespread e-mail and hand-delivered summary sheet to all key stakeholders. This summary included a synopsis of all results, clinical implementations, and an attached post-intervention electronic questionnaire (Table 2 Appendix B). The post-intervention questionnaire aimed to collect information to assess practitioner beliefs of project effectiveness, their intentions to further implement the project methods, identify veteran patients, and implement a screen for PTSD.

Setting and Resources

The DNP Project took place in an outpatient internal medicine office in Western MA that provides comprehensive health care to adult patients to include diagnosis and treatment of illnesses as well as preventative medicine and screening methods.

Description of the population

The project population is military veteran patients of any gender that are over 18 years of age that have appointments in the office during the time of project implementation. Aside from the military veteran population, other primary demographic populations that seek health care at this facility include Caucasian adults from various socioeconomic backgrounds with differing insurance coverage. The patients that visit this location mostly live in Franklin County, MA. In 2015, the census revealed Franklin County's estimated population to be 70,601, which is the least populated county in MA (U.S. Census Bureau, 2015).

According to the U.S. Census Bureau (2015), this county's population consists of 4.5% under the age of 5 years, 18.2% over the age of 65 years, 94.6% Caucasian, 1.4% African American or Black, 3.8% Hispanic or Latino, 8% military veterans, 91.9% graduated high school, and 34.4% have a Bachelor's degree or higher. The median income is $54,072 and 12% live in poverty. The sampling method for this project was of the convenience design since all patients coming to the office for an appointment within the project timeline were screened at check-in for veteran status and resultantly handed the PC-PTSD screen.

Key stakeholders included the reception staff, medical assistants, nurses, and practitioners. The reception staff asked each patient at check-in if he or she has ever served in the military. If the patient said 'yes' to serving in the military, a PC-PTSD questionnaire form was given to fill out in the waiting room. The medical assistant or licensed practical nurse (LPN) ensured the screen was completed and ready to be evaluated by the practitioner. The practitioner then assessed the screening tool during the visit and identified further intervention for those with a positive screen.

Organizational Analysis of Project Site

The internal medicine office is located in a comprehensive health center offering ancillary services to include laboratory services, mammography, bone density, pulmonary function tests, an anticoagulation clinic, and care coordination services to the adult patient population. There are seven practitioners, including four Doctors of Medicine (MD), one Doctor of Nursing Practice (DNP), one Adult and Women's Health Nurse Practitioners (NP), and one Physician Assistant (PA). There are an abundance of staff including medical assistants, licensed practical nurses, registered nurses, lab technicians, technology and billing staff, and an office manager. At the time of project implementation there was no process in place to strategically identify and document patient veteran status as well as no standing protocol to screen veterans for PTSD. As a result, this gap in care and a need for improvement at this facility was identified. The need to screen patients for veteran status and implement the PC-PTSD in this at-risk population was identified and the goal of the DNP Project was formulated.

Goals and Objectives.

Goals provide direction to future desired outcomes, whereas objectives are the clearly defined, measurable actions that move the project toward its goal (Zaccagnini & White, 2014).

Table 1

Goals and Objectives

	Goals	Objectives
1	Educated the project's stakeholders prior to implementation.	Provided education in a scheduled group meeting during practice hours, on the importance of identifying veteran patients given that they are considered a high-risk population. Measured impact of education with pre/post questionnaire analysis of knowledge.

2	Advised stakeholders of the PC-PTSD screen and its effectiveness in identifying veterans with PTSD symptoms.	Provided education and teaching during a scheduled group meeting on the importance of identifying PTSD symptoms in veteran patients and the need for the PC-PTSD screen. Confirmed understanding utilizing teach-back method.
3	Identify veteran patients and implement the PC-PTSD screen.	Identify veteran patients over 18 years of age of any gender, visiting the office for a scheduled appointment will be given the PC-PTSD questionnaire form (Figure 1, Appendix B) and Veteran Resource Sheet (Figure 2, Appendix B) during check-in by the reception staff for one month. Nurses or medical assistants ensured the screening tool results were completed prior to the practitioner entering the exam room.
4	Ensured that patients who scored ≥ 3 or on the PC-PTSD were provided with an intervention or referral.	Patients scoring ≥ 3 on the PC-PTSD received an appropriate intervention listed on the PC-PTSD patient questionnaire.

Implementation

Goal 1. Educate

Current methods of identifying veteran status of patients were analyzed prior to project implementation to pinpoint areas of change and improvement. Methods of documenting the veteran status of patients were determined. No organized method was currently in place to

identify and document veteran status, and therefore, was initiated. During the focus group, education of stakeholders took place about the need to identify veteran patients. Lewin's first stage of change, *unfreezing*, occurred at this point in the QI project. A pre and post-presentation questionnaire was implemented to evaluate knowledge and understanding of presented material (Table 1, Appendix B). The process of identifying veteran status consisted of educating the reception staff to ask each patient, regardless of gender, over 18 years of age, visiting the office for a scheduled visit if he or she has ever served in the military. If the patient answers "yes," a PC-PTSD questionnaire form was to be filled out and brought into the exam room.

Goal 2. Advise

Stakeholders were informed of the PC-PTSD's effectiveness in identifying veterans with PTSD symptoms. Education about the need for the PC-PTSD screen took place, and the teach-back method was implemented to ensure understanding (Farris, 2015). Stakeholders were informed about the specific use of the PC-PTSD patient questionnaire form and its indicated purpose. A copy of the form was shown to all stakeholders for recognition and familiarization of the material as well as to provide education and answer questions. A hard copy of all forms and resource material was available in the facility. Lewin's first stage of change, *unfreezing*, further occurred at this time.

Goal 3. Identify

A start date was identified and the process of implementing the methods of identifying and screening veteran patients took place during the focus group. Lewin's second stage of change, *movement*, transpired at this time. Questions and concerns were answered and identified barriers were addressed to ensure a streamlined approach to the QI project. A reiteration of the direct instructions was given to all stakeholders.

Goal 4. Ensure

Prior to the practitioner entering exam room, communication and awareness of the patient's veteran status and PC-PTSD score took place between the medical assistant and practitioner. Practitioners ensured that patients who scored ≥ 3 on the PC-PTSD were provided with an indicated and appropriate intervention or referral. Additional interventions for positive screens included a referral for mental health, pharmacological or non-pharmacological intervention, follow-up visit to address the problem, or another intervention listed on the questionnaire form. After the timeframe of the project was complete, a post-intervention census (Table 2, Appendix B) was conducted via email to all stakeholders. Stakeholders were thanked for their participation and given a brief summary of the project results. An electronic survey was attached to the email for a post-project analysis. The DNP student emphasized the strong recommendation of implementing and maintaining the process, or similar process, of the QI project to all stakeholders in the medical group. Lewin's third stage of change, *refreezing*, took place at this time.

Ethics and Human Subjects Protection

Ethical concerns of the DNP Project were taken in to consideration and an application to the Institutional Review Board (IRB) for determination of human subject research was completed. The final IRB Determination concluded that the DNP Project is not considered research under the human subjects regulation and therefore did not require IRB review and approval. All participants were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA), which protects the privacy of patients' health information (Health and Human Services Department, 2013). Additionally, the DNP student and practice personnel who carefully conducted this project followed the *Standards of Care* for practice in a primary care

office. All information and data collected, as part of evaluating the impact of this project, was gathered from the project participants' questionnaire forms and did not include any potential patient identifiers. Furthermore, the patient's input of initials was optional on the PC-PTSD questionnaire form. The risks to patients participating in this project were no different from the risks of receiving standard annual physical health appraisal or other general health care. Participant confidentiality was assured by the use of coding with individual identification numbers. The list of participants and their identifying numbers were kept in confidential filing cabinets at the practice office, only accessible to the project coordinators.

Results

Goal 1. Educate and Goal 2. Advise

Results of the DNP Project included outcomes from an educational presentation conducted by the DNP Student and outcomes of a 30-day PTSD screening QI intervention. The educational presentation assessed for and aimed to increase knowledge and awareness of veteran patients and PTSD in a community health care facility. A total of 15 practitioners and staff attended the pre-intervention presentation at the project site. A total of eight participants completed and returned the pre- and post-intervention questionnaire, which was composed of five questions.

Using statistical analysis via the SPSS Statistical Software, the paired sample of the pretest questionnaire had a mean of 4.5 (N=8, Standard Deviation (SD) = 0.756, Standard Error Mean = 0.267) and the posttest questionnaire had a mean of 5 (N=8, SD = 0.00, Standard Error Mean = 0.00). Given the small sample size and low power, a 1-tail paired samples test was used with alpha $p = 0.104/2 = 0.052$. Therefore, the increase in knowledge gained from the presentation was shown not to be statistically significant (N=8, SD = 0.755, Standard Error Mean

= 0.267, t = -1.871, p = 0.104). However, the post-presentation questionnaire did result in 100% (5 of 5 questions) correct scoring of all questions from all participants (an increase from the mean of 4 out of 5 questions correct or 90%), which was the overall goal.

On the pre-presentation questionnaire, a total of five of the eight (62.5%) participants in the educational presentation indicated that they were not familiar with the percentage of OIF/OEF veterans versus the general population who suffer from PTSD. Seven (87.5%) were aware that veterans are not likely to admit to suffering from symptoms of PTSD without being asked. Eight (100%) were aware that veterans are at an increased risk for suicide if they were suffering from PTSD. Eight (100%) were aware of how many 'yes' answers on the PC-PTSD screen indicated a positive screen for PTSD. Eight (100%) were aware that veterans may not be aware that they are eligible for free services through the VA. Post-presentation, all participants were fully educated and aware of all topics presented.

Goal 3. Identify and Goal 4. Ensure

During the implementation portion of the DNP Project, veteran patients were identified at check-in and screened for PTSD symptomatology utilizing the PC-PTSD screening form given to them by reception upon check-in for their appointments. The provider assessed for positive or negative results of PTSD symptoms identified by the DNP Student's devised demographic veteran screening form containing the PC-PTSD screen. The outcome of the PC-PTSD aimed to reveal a risk stratification of PTSD suffering and the need for possible further intervention as determined by the provider. At the time of intervention, no tool was being utilized to identify veteran patients or screen for PTSD in this population.

The 30-day implementation of the DNP Project's QI intervention resulted in 34 samples of identified veteran patients. There were 1434 total patients seen at the clinic within this

timeframe. This denotes that during the month, 2.37% of the total clinic population was identified as military veterans. The intervention timeframe consisted of 21 workdays and 10 weekend days. Since the project implementation site does not work on the weekends, 34 of the 1434 patients seen within 21 workdays results in an average of 1.6 patients per day (or 1-2 patients per day) as being military veterans.

Descriptive statistics were used for analysis of sample age resulting in a minimum age of 53 years and a maximum age of 93 with a mean of 74 years (Standard Deviation = 11.264 years). Additional analysis of the sample PTSD symptoms resulted in a minimum of zero symptoms and maximum of four symptoms with a mean of 0.455 symptoms (Standard Deviation = 0.905 symptoms).

There were seven veteran patients (21.9%) who reported being in combat. In regards to branches of service, 14 (41.2%) served in the Army, 11 (32.4%) served in the Navy, one (2.9%) served in the Coast Guard, eight (23.5%) served in the Air Force. A total of 13 (38.2%) veterans reported being enrolled in healthcare at the VA. Of the 34 veteran patients, 25 (73.5%) reported no PTSD symptoms on the PC-PTSD, five (14.7%) reported one symptom, three (8.8%) reported two symptoms, 0 (0.0%) reported three symptoms, and one (2.9%) reported four symptoms. Given that the PC-PTSD denotes a positive screen with three or more symptoms, only one patient of the 34 veterans had a positive screen.

Cross tabulation analysis of branch of service versus PTSD symptoms as indicated on the PC-PTSD results are indicated below.

	Army (N=14)	**Navy (N=11)**	**Air Force (N=8)**	**Coast Guard (N=1)**
No Symptoms	8	8	8	1
One Symptom	4	1	0	0
Two Symptoms	2	1	0	0
Three Symptoms	0	0	0	0

Four Symptoms	0	1	0	0

Utilizing the Pearson Chi-Square test with a value of 8.119 resulted in a non-significant ($p = 0.522$) correlation of the branch of service when cross tabulated with PTSD symptoms. This can be due to a low sample number. However, this data analysis revealed that the majority of the sample that had symptoms was in the Army or Navy. The Coast Guard and Air Force veterans reported no symptoms of PTSD.

Cross tabulation of Combat Veteran (CV) status (N=7) and PTSD symptoms resulted in 5 CV (71.4%) with no symptoms, 0 CVs (0%) with 1 symptoms, 2 CV (28.6%) with 2 symptoms, 0 CVs (0%) with 3 symptoms, and 0 CV (0%) with 4 symptoms. Utilizing the Pearson Chi-Square test with a value of 5.202 resulted in a non-significant ($p = 0.158$) correlation of the CV status when cross tabulated with PTSD symptoms. Therefore, it cannot be concluded that combat exposure increases symptoms of PTSD in this sample.

Cross tabulation of CV status and branch of service resulted in 4 of the 7 CVs (57.1%) serving in the Army and 3 of the 7 CVs (42.9%) serving in the Navy. The Coast Guard and Air Force veteran samples were not CVs. Utilizing the Pearson Chi-Square test with a value of 2.994 resulted in a non-significant ($p = 0.393$) correlation of the CV status and branch of service.

Lastly, post-intervention information, results, summary and survey were hand delivered to each provider (N=7) and staff member, as well as electronically via e-mails with an attached link for an online questionnaire. This method of information distribution was utilized for the intention a more widespread dissemination, as well as trial of different delivery methods to optimistically obtain more feedback when information is delivered by multiple modes. Pre-intervention feedback was about 53% when utilizing in-person information delivery via verbal presentation and paper questionnaire forms, hence the different delivery methods post-

intervention. Unfortunately, the post-intervention provider feedback was 43% (3 of 7 providers), even less than the pre-intervention. However, the post-intervention feedback offered excellent input regarding provider thoughts on usefulness and success of the project as well as provider intent on continuation of identifying and screening veteran patients for PTSD.

The post-intervention survey revealed that providers (N=3) said they thought the project was useful (100%) and commented how it increased their awareness of the veterans and PTSD. When asked if they thought this project was a success, all 3 respondents reported, "Yes," 66.67% (N=2) stated they will continue to identify veteran status in their patients and 33.33% (N=1) reported they will not continue as there are already too many things to incorporate into a patient visit. None of the providers (N=0) have previously used the PC-PTSD or similar to screen patients for PTSD.

Facilitators and Barriers

Identified facilitators to effectively implement change included open communication and discussion between DNP Student and Key stakeholders, frequent opportunities for collaboration, adequate staffing, support services, designated project leaders with readily available contact information, published guidelines, hard-copy of project outlines, goals, and information, as well as outlined expectations (White & Dudley-Brown, 2012).

Missing questionnaires of the pre-/post-presentation and incomplete or missing data on screening forms was a significant barrier in the DNP Project. Seven of the 15 providers and staff (46.67%) did not complete or return their pre- and posttest presentation questionnaires, which significantly reduced the availability of data to analyze to fully interpret knowledge gained from the DNP Student's presentation. Additional barriers to implementing a successful QI project included patients not willing to participate, overwhelming workload of practitioners and staff,

lack of practitioner time, inadequate staffing, misunderstanding of purpose and actions, emotional exhaustion, lack of passion for the subject matter, lack of required tools, lack of communication, incomplete screening forms, and inadequate monitoring and follow-up. Missing data was found on three of the 34 (8.82%) veteran samples. The missing data would have been useful for conducting a more thorough analysis and synthesis of the DNP Project data regarding the veteran patients. However, all acquired data was utilized to its full potential to provide the most relevant associations and outcomes.

Limitations

Limits to the generalizability of the DNP Project include a small sample size, lack of control group, and implementation time constraints. The pre-intervention education session was given during the lunchtime hour. Not all key stakeholders were available for the entire presentation related to long patient visits, time away finishing documentation, or out of the office during presentation day. Furthermore, the implementation time constraint of 30 days played a major role in the small sample size and limited data collection. Post-intervention feedback was limited, possibly related to lack of free time from the providers or an overwhelming workload.

Possible reasons for the difference in the anticipated outcome of more positive PTSD screening results versus the outcome of the project could be related to lack of patient accuracy in reporting symptoms, unwillingness to identify or underreporting symptoms, and ages of the patients in the sample. The mean age of the sample was 74 years and the minimum age was 53, which can take into account that the sample did not include many, if any, OEF/OIF veterans to which PTSD is on the rise. Therefore, the lack of a younger population in the sample places a limit on the project.

Factors that might have limited internal validity may have included confounding, bias, or imprecision in the design of the project screening form. Additionally, methods, measurement, or analysis included lack of stratification by gender, limited time frame of implementation, and lack of DNP student constant oversight for guidance and management may have further contributed to limited validity.

Further information regarding a veteran's current healthcare needs sought at the VA would be helpful to gain a thorough picture of the patient's overall needs. This information would be additionally useful in maintaining continuity and collaboration of care when having multiple providers involved.

Discussion

The DNP Project findings showed that an educational intervention did not have a statistical significant ($p = 0.104$) impact on improving the key stakeholders' knowledge about PTSD in veterans. However, there was an overall improvement in awareness of key stakeholders in addition, all questions on the post-presentation questionnaire were answered completely correct. The increase in knowledge and awareness of veteran patients' risk for PTSD in accordance with the identified veteran population of the patient panel will hopefully increase the likelihood of the continuation of the DNP Project methods at the site of implementation.

The educational aspect of the DNP Project utilized several strategies to improve key stakeholder's knowledge. This included a verbal presentation and visual tool via easel and easel paper, questionnaires, handouts, resource binder, and a photograph. The presentation of DNP student background, overview of statistics of PTSD in veterans, reason for DNP Project, project goals, screening logistics, and follow-up increased key stakeholder knowledge and awareness of the prevalence of PTSD in veterans and the harm it can cause.

Key findings of the DNP Project included that about 1-2 veterans a day are seen at the project site. Therefore, there is a potential opportunity each day at this intervention site to help a veteran who is possibly in need of support, referrals or mental health treatment.

Strengths of this DNP Project included the positive acceptance and participation of patients, providers and staff. Furthermore, providers reported an increase in awareness of PTSD in veterans and have reported interest in continuing to identify veterans in their patient population.

Interpretation

The observed outcomes in the DNP Project were different than anticipated by the DNP Student. An expectation of a higher percentage of positive PTSD screens was anticipated given the statistics of higher rates of PTSD in veteran patients versus the general population (VA, 2015). However, this anticipatory thought was not captured in the sample data acquired at the implementation location during the timeframe completed. A systematic impact of this DNP Project included a newfound education and an increase in awareness of the key stakeholders regarding the prevalence of PTSD in veterans in addition to the identified number of veterans present in the clinic's patient population.

Olenick, Flowers, and Diaz (2015) revealed that it is essential for all practitioners (civilian and VA) to be aware of their veteran patients and their unique issues so that holistic care can be given. The researchers present ideas for strategies to integrate veteran content into health care with an example being presentations in clinical areas to expand and improve faculty knowledge on veteran issues. This DNP Project provided precisely that criterion.

This DNP Project provided patients and providers with a sheet of local resources, which proved to be a popular tool amongst identified veterans at the reception check-in. One

receptionist said that veterans would come back to the desk and ask for a few more resource sheets to share with others.

The DNP Project impacted key stakeholders independently and as a whole. One provider stated that individual patients shared a new story of their life with the provider and that the DNP Project was a gateway to this occurrence. This provider was unaware of the patient's veteran status and the DNP Project allowed for a further patient-provider connection and an understanding of the patient's personal history and experience in the military. The DNP Project served as a tool to open a window into the patient's history that would have otherwise been left closed if not for beginning the conversation through the use of this DNP Project's veteran status identification and PTSD screening tool.

Conclusion

PTSD decreases the quality and quantity of life in veterans as it puts individuals at an increased risk for sleep disturbances, anxiety, depression, social isolation, and suicide (Olenick, Flowers, & Diaz (2015). The DNP Project was valuable in providing awareness and education to 15 practitioners and staff regarding military veteran patients seeking healthcare in the facility and the veteran's risk for suffering from PTSD. As a quality improvement project, the DNP Project provided an evidence-based screening tool to identify PTSD in these veteran patients being cared for and simultaneously collected their demographic information regarding their military history and current VA utilization. Intervention options including available community and VA services for at-risk patients were provided to assist with patient-provider discussed treatment options if necessary. The results revealed 34 identified veteran patients of the total 1434 seen within the 30-day timeframe of project implementation. When compared to the total patients seen in that timeframe, veterans make up 2.37% of the population. The results further

showed there was an improvement, albeit not statistically significant, in knowledge amongst key stakeholders regarding veterans, PTSD, and available resources. The key stakeholders expressed interest in their future intention to adopt a systematic and routine screening for veteran status and PTSD in their patients.

Sustainability and continuation of this DNP Project is possible. The DNP student left the resources and tools for the key stakeholders to utilize if they wish to proceed with utilizing the PTSD screening tool and veteran identification form from this quality improvement process. The DNP student shared the results of the project with key stakeholders at the project implementation site through a widespread e-mail and hand-delivered summary sheet as well as the utilization of an online post-project survey and questionnaire.

Nursing Practice Implications

Increasing practitioner knowledge of PTSD in veteran patients, identifying veteran patients in a practitioner's patient panel, and improving awareness of treatment or intervention options in the community or through the VA can improve patient outcomes. Providing education regarding resources for veterans suffering from PTSD will increase practitioner comfort and confidence in caring for veteran patients. The continuation of PTSD symptom analysis through utilization of the PC-PTSD in community healthcare can monitor and track symptomatology. Olenick, Flowers, and Diaz (2015) state that PTSD is an amalgam of symptoms, severity, and duration. The researchers further explain that PTSD is often associated with sleep problems, substance use, pain, and other psychiatric disorders, and requires comprehensive assessment. Screening tools have the ability to recognize these symptoms, accurately and expeditiously assess and treat veterans. Practitioner awareness in the community regarding PTSD symptom presentation in veteran patients will allow for a more thorough evaluation and expedited

connection between presenting issues and risk for PTSD suffering. This will, in turn, increase access to appropriate treatment and decrease negative patient outcomes.

Implications for practice and for further study in the field of PTSD in military veterans include the continuation for veteran patient identification in community healthcare to identify the additional risk factors for patients suffering from associated symptoms of PTSD. Additionally, research regarding the quantity and severity of identified symptoms in the PC-PTSD screening tool can potentially further add to awareness of future risk for diagnostic factors of PTSD and increase the necessity for a standardized approach to PTSD screening intervals throughout the lifetime of veterans in the VA and in the community.

Future work aimed at increasing knowledge and awareness of veterans suffering from PTSD is needed for practitioners that are providing their primary health care in the community setting. Improving awareness of the tools available to civilian providers regarding caring for these veterans is also needed. This DNP Project provided education on the resources available for veterans as well as providers. Education on the PTSD Consultation Program (2017) was provided regarding the availability of this program not only to VA providers but also community providers caring for veterans. This will increase provider support, education, and awareness of resources available to them and their veteran patients in regards to PTSD.

Suggested next steps include an updated version of the DNP Project's screening tool to include a gender section for a more thorough data collection if this DNP Project is utilized in the future. Recommendations for future DNP Projects related to this topic would include: utilizing a longer implementation time frame, including gender on screening forms, and including more detailed questions of military service history (i.e. deployment locations, military occupation, trauma exposure, etc.).

The impact and results of this project can be spread to other healthcare practitioners and clinics to identify and address at-risk veteran patients in community healthcare. Dissemination of project purpose and methods can be conducted by information sharing amongst providers and staff. Ongoing education of providers and staff regarding caring for veterans in the community, with a focus on PTSD, is an essential intervention for preventing unnecessary silent suffering, improving outcomes, and reducing negative outcomes and harm from untreated or unidentified mental health complications. Given the recent surge in awareness of veteran mental health complications and the current wartime status of the U.S., it is essential to screen patients and prevent unnecessary suffering in the veteran population.

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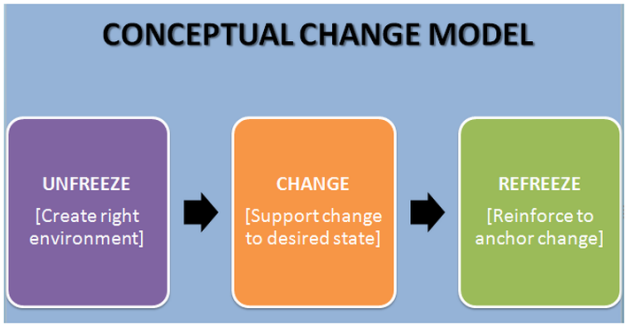
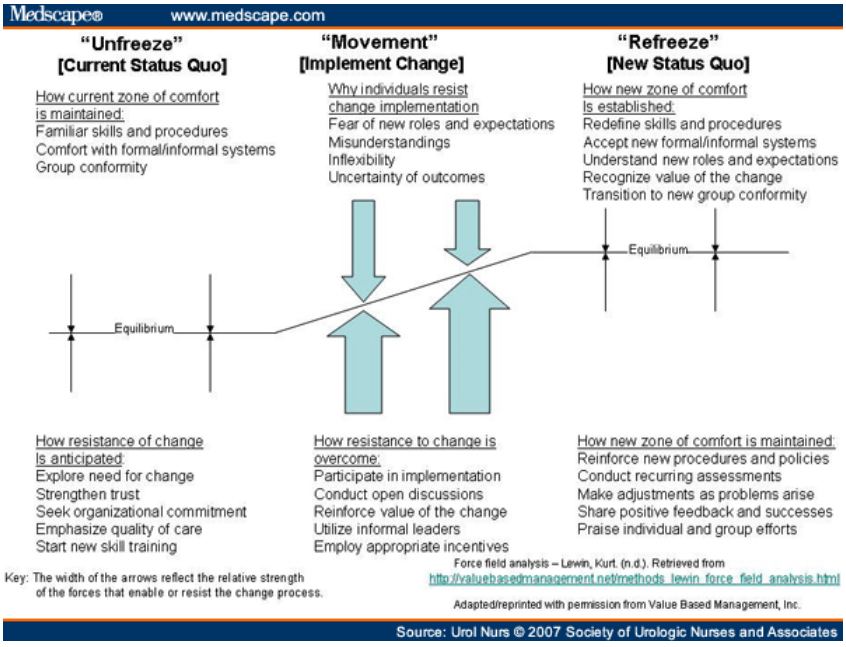
Appendix A

Figure 1 Kurt Lewin's Change Theory Model



(Retrieved from avertingworkplaceconflicts.weebly.com on April 2, 2016)

Figure 2 Kurt Lewin's Change Theory Model



(Retrieved from www.medscape.com on April 2, 2016)

Appendix B

Table 1 Pre-Presentation Questionnaire

Question	Pre-Presentation Answer
1.Post-traumatic stress disorder affects up to ___ of Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) veterans as compared to up to ___ of the general population. a. 80% and 50% b. 10% and 40% c. 20% and 7% d. 1% and 10%	
2. Veterans are likely to admit to suffering from symptoms of PTSD without being asked? True or False	
3. Veterans are at an increased risk for suicide if they are suffering from PTSD. True or False	
4. If a patient answers "yes" to three or more questions on the PC-PTSD screen, they are highly likely to be suffering from PTSD and need further intervention. True or False	
5. Veterans may be unaware that they are eligible for free services through the VA. True or False	

Comments:

Table 2 Post Intervention Questionnaire

Question	Response		
	YES	NO	N/A
Do you think this project was useful?			
Do you think this intervention was a success?			
Will you continue to identify veteran status in your patients?			
Have you ever used the PC-PTSD or similar to screen patients for PTSD?			
Will you continue to use the PC-PTSD in veteran patients?			

Comments:

Figure 1 PC-PTSD Questionnaire Form

Veteran Patient Identification & PTSD Screening

Connecticut River Internists
Turners Falls, MA

University of Massachusetts
DNP Capstone Project

Name (optional)_____ Age_____ Date_____

Have you ever served in the United States military?
(Please circle one) YES NO

Are you a combat veteran? (Please circle one) YES NO

Have you ever received health care through
the Veterans Health Administration (VA)?
(Please circle one) YES NO

If you are a veteran, please fill out the following questionnaire:

In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, in the past month, you:

1. Have had nightmares about it or thought about it when you did not want to? YES NO
2. Tried hard not to think about it or went out of your way to avoid situations that reminded you of it? YES NO
3. Were constantly on guard, watchful, or easily startled? YES NO
4. Felt numb or detached from others, activities, or your surroundings? YES NO

Please return this questionnaire to your health care provider.

Provider Data Entry Only

PC-PTSD Results: ☐ ≥ 3 (Positive) ☐ < 3 (Negative)

Plan:

- ☐ Already in MH treatment at VA
- ☐ Refer to VA enrollment/eligibility (all)
- ☐ Refer to Vet Center (combat vet only)
- ☐ Refer to VA Urgent Care 24/7
- ☐ Pt to attend VA MH walk-in clinic hours
- ☐ Refer to OEF/OIF/OND office at VA
- ☐ Refer to local Veteran Service Officer
- ☐ Already in MH treatment in community
- ☐ Refer to MH facility in community
- ☐ PTSD Diagnostic interview provided
- ☐ F/u visit scheduled for diagnosis
- ☐ Refuses treatment
- ☐ SI/risk, Section 12
- ☐ Negative screen, f/u PR

Figure 2 Veteran Resource Sheet

Veteran Resources

Local Veteran Service Officer (413)-772-1571
Timothy Niejadlik, (M-F 8:30-5:00)
Director of Resource and Referral Center
294 Main Street
Greenfield, MA 01301

VA Central Western Massachusetts (413)-584-4040
Healthcare System 1-800-893-1522 (24/7)
421 N Main St
Leeds, MA 01053
**Visit the eligibility office for health care enrollment ** (413)-582-3091
OEF/OIF/OND services (413)-584-4040 x2027

Greenfield Community-Based Outpatient Clinic (CBOC) (413)- 773-8428
143 Munson Street, Greenfield

Vet Center (413)-737-5167 or (877)-927-8387
Speak with a fellow veteran in a confidential setting and have same-day access to a counselor (Combat Vets Only)
95 Ashley Ave, Suite A
West Springfield, MA 01089

Veterans Crisis Line 1-800-273-8255
(confidential) and Press 1 or text 838255 (24/7)

Soldier On 413-236-5644
www.wesoldieron.org
Provides homeless veterans with shelter and support.

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Appendix C

SPSS Statistical Analysis of DNP Project Data

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pre_total	4.5000	8	.75593	.26726
	post_total	5.0000	8	.00000	.00000

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pre_total - post_total	-.50000	.75593	.26726	-1.13197	.13197	-1.871	7	.104

Frequencies

PTSD_SYMPTOM					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	25	73.5	73.5	73.5
	1.00	5	14.7	14.7	88.2
	2.00	3	8.8	8.8	97.1
	4.00	1	2.9	2.9	100.0
	Total	34	100.0	100.0	

ptsd_dx					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	33	97.1	97.1	97.1
	1.00	1	2.9	2.9	100.0
	Total	34	100.0	100.0	

Combat_Veteran					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	25	73.5	78.1	78.1
	1	7	20.6	21.9	100.0
	Total	32	94.1	100.0	
Missing	9	2	5.9		
Total		34	100.0		

Branch of Service Branch of Service					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Army	14	41.2	41.2	41.2
	2 Navy	11	32.4	32.4	73.5
	3 Coast Guard	1	2.9	2.9	76.5
	4 Air Force	8	23.5	23.5	100.0
	Total	34	100.0	100.0	

VA_healthcare					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	21	61.8	61.8	61.8
	1	13	38.2	38.2	100.0
	Total	34	100.0	100.0	

Descriptives

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Age	33	53	93	74.00	11.264
PTSD_SYMPTOM	33	.00	4.00	.4545	.90453
Valid N (listwise)	33				

Descriptive Statistics				
Dependent Variable: PTSD_SYMPTOM				
Combat_Veteran	BranchofService Branch of Service	Mean	Std. Deviation	N
0	1 Army	.6000	.69921	10
	2 Navy	.7143	1.49603	7
	4 Air Force	.0000	.00000	7
	Total	.4583	.93153	24
1	1 Army	.5000	1.00000	4
	2 Navy	.6667	1.15470	3
	Total	.5714	.97590	7
Total	1 Army	.5714	.75593	14
	2 Navy	.7000	1.33749	10
	4 Air Force	.0000	.00000	7
	Total	.4839	.92632	31

Crosstabs

Branch of Service Branch of Service * PTSD_SYMPTOM Cross tabulation							
			PTSD_SYMPTOM				
			.00	1.00	2.00	4.00	Total
BranchofService Branch of Service	1 Army	Count	8	4	2	0	14
		% within BranchofService Branch of Service	57.1%	28.6%	14.3%	0.0%	100.0%
		% within PTSD_SYMPTOM	32.0%	80.0%	66.7%	0.0%	41.2%
		% of Total	23.5%	11.8%	5.9%	0.0%	41.2%
	2 Navy	Count	8	1	1	1	11
		% within BranchofService Branch of Service	72.7%	9.1%	9.1%	9.1%	100.0%
		% within PTSD_SYMPTOM	32.0%	20.0%	33.3%	100.0%	32.4%
		% of Total	23.5%	2.9%	2.9%	2.9%	32.4%
	3 Coast Guard	Count	1	0	0	0	1
		% within BranchofService Branch of Service	100.0%	0.0%	0.0%	0.0%	100.0%
		% within PTSD_SYMPTOM	4.0%	0.0%	0.0%	0.0%	2.9%
		% of Total	2.9%	0.0%	0.0%	0.0%	2.9%
	4 Air Force	Count	8	0	0	0	8
		% within BranchofService Branch of Service	100.0%	0.0%	0.0%	0.0%	100.0%
		% within PTSD_SYMPTOM	32.0%	0.0%	0.0%	0.0%	23.5%
		% of Total	23.5%	0.0%	0.0%	0.0%	23.5%
Total		Count	25	5	3	1	34
		% within BranchofService Branch of Service	73.5%	14.7%	8.8%	2.9%	100.0%
		% within PTSD_SYMPTOM	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	73.5%	14.7%	8.8%	2.9%	100.0%

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.119[a]	9	.522
Likelihood Ratio	9.920	9	.357
Linear-by-Linear Association	2.327	1	.127
N of Valid Cases	34		
a. 13 cells (81.3%) have expected count less than 5. The minimum expected count is .03.			

Crosstabs

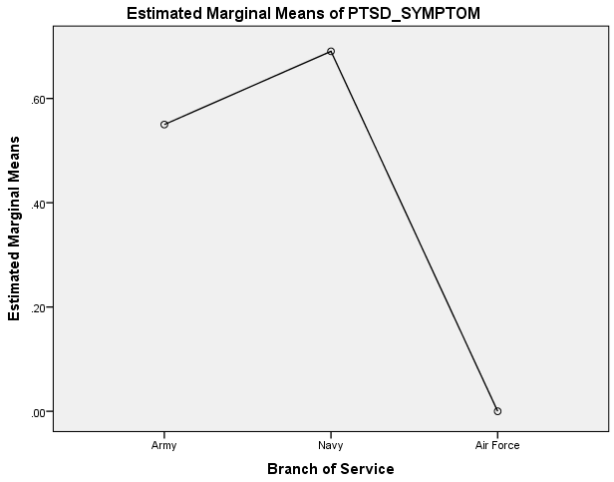
Combat_Veteran * PTSD_SYMPTOM Cross tabulation							
			PTSD_SYMPTOM				Total
			.00	1.00	2.00	4.00	
Combat_ Veteran	0	Count	18	5	1	1	25
		% within Combat_Veteran	72.0%	20.0%	4.0%	4.0%	100.0%
		% within PTSD_SYMPTOM	78.3%	100.0%	33.3%	100.0%	78.1%
		% of Total	56.3%	15.6%	3.1%	3.1%	78.1%
	1	Count	5	0	2	0	7
		% within Combat_Veteran	71.4%	0.0%	28.6%	0.0%	100.0%
		% within PTSD_SYMPTOM	21.7%	0.0%	66.7%	0.0%	21.9%
		% of Total	15.6%	0.0%	6.3%	0.0%	21.9%
Total		Count	23	5	3	1	32
		% within Combat_Veteran	71.9%	15.6%	9.4%	3.1%	100.0%
		% within PTSD_SYMPTOM	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	71.9%	15.6%	9.4%	3.1%	100.0%

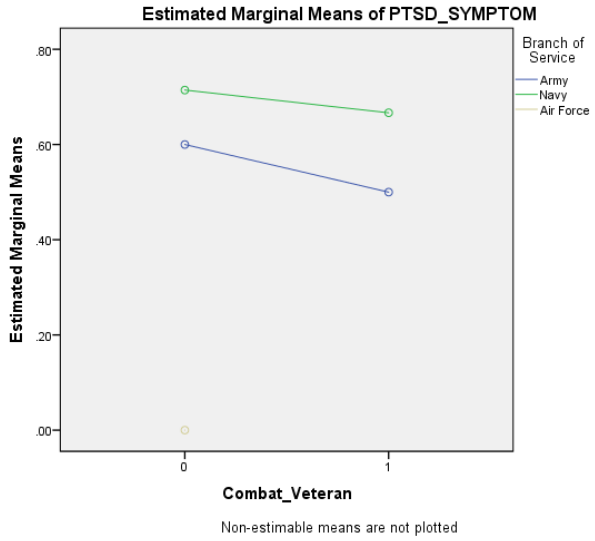
Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.202[a]	3	.158
Likelihood Ratio	5.717	3	.126
Linear-by-Linear Association	.113	1	.737
N of Valid Cases	32		
a. 6 cells (75.0%) have expected count less than 5. The minimum expected count is .22.			

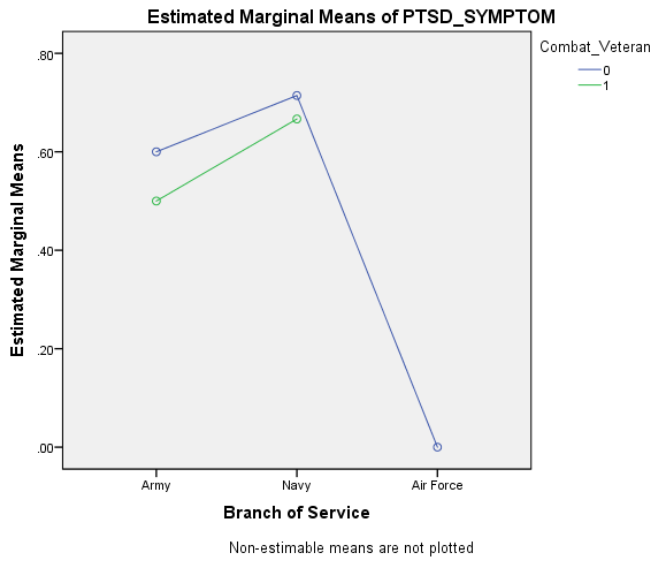
Crosstabs

Combat_Veteran * BranchofService Branch of Service Crosstabulation							
			BranchofService Branch of Service				
			1 Army	2 Navy	3 Coast Guard	4 Air Force	Total
Combat_Veteran	0	Count	10	7	1	7	25
		% within Combat_Veteran	40.0%	28.0%	4.0%	28.0%	100.0%
		% within BranchofService Branch of Service	71.4%	70.0%	100.0%	100.0%	78.1%
		% of Total	31.3%	21.9%	3.1%	21.9%	78.1%
	1	Count	4	3	0	0	7
		% within Combat_Veteran	57.1%	42.9%	0.0%	0.0%	100.0%
		% within BranchofService Branch of Service	28.6%	30.0%	0.0%	0.0%	21.9%
		% of Total	12.5%	9.4%	0.0%	0.0%	21.9%
Total		Count	14	10	1	7	32
		% within Combat_Veteran	43.8%	31.3%	3.1%	21.9%	100.0%
		% within BranchofService Branch of Service	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	43.8%	31.3%	3.1%	21.9%	100.0%

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.994[a]	3	.393
Likelihood Ratio	4.652	3	.199
Linear-by-Linear Association	2.348	1	.125
N of Valid Cases	32		
a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .22.			


Estimated Marginal Means of PTSD_SYMPTOM
Estimated Marginal Means
.60
.40
.20
.00
Army
Navy
Air Force
Branch of Service


Estimated Marginal Means of PTSD_SYMPTOM
Estimated Marginal Means
.80
.60
.40
.20
.00
0
1
Combat_Veteran
Branch of Service
Army
Navy
Air Force
Non-estimable means are not plotted


Estimated Marginal Means of PTSD_SYMPTOM
Estimated Marginal Means
.80
.60
.40
.20
.00
Army
Navy
Air Force
Branch of Service
Combat_Veteran
0
1
Non-estimable means are not plotted