2019

Implementation of a psychological first aid protocol related to secondary trauma in volunteer first responders

Angela Orsborn

Implementation of a Psychological First Aid Protocol Related to Secondary Trauma in Volunteer First Responders

MARLENA PRIMEAU

by

Angela Orsborn, MSN, RN, FNP-BC, PMHNP-BC

A DNP PROJECT

Submitted in partial fulfillment of the requirements for the
Degree of Doctor of Nursing Practice
to
The School of Graduate Studies
of
The University of Alabama in Huntsville

HUNTSVILLE, ALABAMA
2019

In presenting this DNP project in partial fulfillment of the requirements for a doctoral degree from The University of Alabama in Huntsville, I agree that the Library of this University shall make it freely available for inspection. I further agree that permission for extensive copying for scholarly purposes may be granted by my advisor or, in his/her absence, by the Director of the Program or the Dean of the School of Graduate Studies. It is also understood that due recognition shall be given to me and to The University of Alabama in Huntsville in any scholarly use which may be made of any material in this DNP project.

Crayton J. Osborn 10-31-19

Student Signature Date

DNP PROJECT APPROVAL FORM

Submitted by Angela Orsborn in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice and accepted on behalf of the Faculty of the School of Graduate Studies by the DNP project committee.

We, the undersigned members of the Graduate Faculty of The University of Alabama in Huntsville, certify that we have advised and/or supervised the candidate on the work described in this DNP project. We further certify that we have reviewed the DNP project manuscript and approve it in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice.

Marlena S. Prim 10-31-19
(Date)

Marlena Primeau, DNP, FNP-BC, NHDP-BC, BSHECS
Clinical Associate Professor
Committee Chair

10/31/19
(Date)

Beth Barnby, DNP, ACNP-BC, FNP-BC, CRNP
Clinical Associate Professor
Committee Member

10/31/19
(Date)

Raleigh Sprouse, MPA, NREMT

Lieutenant, Southaven Fire Department
Training Officer, Lafayette County Fire Department, Clinical Mentor

(Date)

Ellise Adams, PhD, RN, CNM
Associate Professor
DNP Program Coordinator

(Date)

Karen Frith, PhD, RN, NEA-BC
Associate Dean,
Graduate Programs Professor

(Date)

Marsha Adams, PhD, RN, CNE, ANEF, FANN
College of Nursing, Dean

(Date)

David Berkowitz, PhD
Graduate Dean

ABSTRACT
The School of Graduate Studies
The University of Alabama in Huntsville

Degree: Doctor of Nursing Practice College: Nursing

Name of Candidate: Angela Orsborn

Title: Implementation of a Psychological First Aid Protocol Related to Secondary Trauma in Volunteer First Responders

Volunteer first responders, which numbers 55% of the population of firefighters, have the potential to experience exposure to stressful events every time a pager activates. Many of these volunteer first responder experience hopelessness, anxiety, stress, exhaustion, and depression, placing them at risk for stress-associated mood disorders related to secondary trauma.

Mental health problems stemming from secondary trauma include alcoholism, drug abuse, depression, acute stress disorder, and post-traumatic stress disorder. This project utilized the conceptual framework of the Tidal Model to identify troubling signs and symptoms of secondary trauma in a group of volunteer first responders. An implemented psychological first aid protocol facilitated increased awareness and mitigated mental health concerns triggered by secondary trauma.

Analysis using a paired-samples t-test was conducted to compare secondary trauma symptoms in volunteer first responders before and after the implementation of a psychological first aid protocol. There was not a significant difference in the total scores of secondary trauma symptoms (p=.089) after the implementation of the psychological first aid protocol however there was a significant decrease in the severity of symptoms (p=.022).

Based on these results, the psychological first aid protocol did indicate a clinical decrease in the number of signs and symptoms and a significant decrease in severity of the signs and symptoms of secondary trauma. The study was able to provide the county fire authorities with support for awareness of mental health concerns in volunteer first responders, and to consider options to mitigate the issue.

Keywords: volunteer first responder, firefighter, secondary trauma, acute stress disorder, post-traumatic stress disorder

ACKNOWLEDGMENTS

I would like to thank my momma for her undeniable love and support, my husband who's needs were frequently placed on the backburner and who didn't touch my papers even though they were scattered all over with no order except to myself, and my little dog, Claire, who sat on the ottoman beside my desk and kept me company. A big shout-out to my colleagues at my places of employment for listening to me whine for the past two and a half years. Thanks to the faculty and staff at MUW, who had my back for the defense of the project. Thanks to Terry in IT at MUW for helping with the computer glitches. Thanks to Dr. Irene Pintado at MUW for assisting with the statistics and SPSS. Thank you to my clinical mentor, Raleigh Sprouse, who I did not know before this endeavor. You saw the vision and helped me run the course to the end. I hope we can use this project to help those in need. Thanks to Dr. Marlena Primeau for understanding my population of choice and the problems they encounter daily by volunteering to help their community.

The biggest acknowledgement by far is to my firefighter family of the rural volunteer fire department in Northeast Mississippi. I started talking to you guys three years ago about my project, and all of you came through for me by participating. I love you guys. And finally, to God, who answered my prayers time and again.

TABLE OF CONTENTS

SECTION II: DNP PROJECT PRODUCT

Implementation of a Psychological First Aid Protocol Related to Secondary Trauma in Volunteer First Responders

Identification of the Problem

Introduction

First responders are firefighters, police officers, and emergency medical services personnel who arrive first on the scene of emergencies and are responsible for assistance and, often, coordination of care. Firefighters are an integral and crucial sector of the first responder organization. Fire department personnel are categorized as either career (paid) first responders or volunteer first responders; 55% of all U.S. firefighters are volunteer first responders (U.S. Fire Administration, 2018). There were 35,320,000 U.S. fire department calls in 2016 (National Fire Protection Association, 2016). As of January 2018, there were 27,217 fire departments in the United States, with 1,217,800 fire department personnel (U.S. Fire Administration, 2018). Volunteer first responder calls include fires, emergency medical incidents, motor vehicle accidents, terrorist events, natural disasters, hazardous materials incidents, water rescue and, confined space emergencies (National Volunteer Fire Council, 2017).

Every 24 seconds, a fire department responds to an emergency. Volunteer first responders, who already work full-time in other careers and have personal obligations, provide a service to the community that often disrupts their daily schedules with little to no warning and at often inconvenient times (National Fire Protection Association, 2016). Volunteer first responders are on the front line in tragedies that develop in their communities, and which often involve their friends, families, and co-workers. Volunteer first responders spend an enormous amount of time away from their families due to the requirements of this 'second' job, such as 24/7 on-call shifts, emergency training, and maintenance of equipment and supplies. For the

public, the volunteer first responders are the first line of defense in the midst of threatening or traumatic events. These occurrences can vary from simple, such as assisting a person who has fallen, or providing emergency medical services (EMS) support, to complex and disturbing, such as a motor vehicle accident, a baby with an airway obstruction, or a building fire. Volunteer first responders experience a variety of often overwhelming stressors, not the least of which is balancing personal and professional obligations with the complex demands and frequently poor outcomes of first response. These stressors are cumulative, and frequently propel volunteer first responders into quiet, sometimes unacknowledged, mental health crises (National Volunteer Fire Council, 2017).

Description and Analysis of the Environment

Mental health problems such as alcoholism, drug abuse, depression, Post-traumatic Stress Disorder (PTSD), Acute Stress Disorder (ASD), and Secondary Traumatic Stress Disorder (STSD) affect many volunteer first responders. These mental health disorders share similarities as well as demonstrate distinct differences. Although the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) identifies the same behaviors in both ASD and PTSD, the time frames differ. ASD is defined as the emergence of specific behaviors between three days and one month after a traumatic event, while PTSD is defined as beginning a month or more after the event, and 37% of volunteer first responders display these symptoms (American Psychiatric Association, 2013, Wilmoth, 2014.). Secondary traumatic stress can be defined as exposure to the traumatic events of others. Volunteer first responders work at the epicenter of emergency events and distressing incidents daily; witnessing the trauma felt by the victims can manifest in the volunteer first responders as physical and mental symptoms caused by secondary traumatic

stress. The variety of stress-related disorders are interlinked; if secondary traumatic stress is not mitigated, it can develop into ASD, then PTSD if symptoms persist (Molnar et al., 2017).

Many factors affect the volunteer first responder's vulnerability to the effects of secondary trauma. Susceptibility is often triggered by professional demands of the profession, including multiple consecutive emergency calls, sleep disturbance, poor outcomes, the inherent danger of the occupation, and the lack of effective debriefing. Although the above is true for all first responders, there is additional significance for volunteer first responders, who often return to their responsibilities at home or career directly from the scene of the incident, leading to a tendency to minimize and suppress distressing thoughts and feelings. The continual accumulation and suppression of these feelings can lead to ASD and PTSD (Milen, 2009).

According to Milligan-Saville et al. (2018), volunteer first responders have a higher incidence of PTSD and depression, as well as suicidal ideation. A staggering 47% of volunteer first responders have contemplated suicide, with more deaths by suicide in 2017 than deaths in the line of duty. (Heyman, Dill, and Douglas, 2018). In a large survey conducted by Venteicher (2017), it was found that 6.6% of more than 4000 first responders had attempted suicide. Lack of mental health screening, work and family expectations, inadequate training for critical incidents, and obstacles to mental health treatment link the prevalence of mental illness to volunteer first responders (Milligan-Saville et al., 2018). A higher risk for mental health problems parallels the lack of strategic recruitment and screening, and the rapid transformation from civilians to volunteer first responders (Stanley, Boffa, Hom, Kimbrel and Joiner, 2016).

Several considerations impact the ability and willingness of volunteer first responders to accept mental health support. A valid concern is access to health care; mental health services are more readily available in specific geographic locations, such as urban areas, while access to

services may be more problematic in rural or remote areas. Additionally, the lack of corporate benefits, especially medical insurance, from the fire service impedes successful acquisition of care (Federal Communication Commission, 2010). Attitudes towards mental health, such as cultural norms of masculinity, may also decrease the likelihood of volunteer first responders in seeking treatment (Milen, 2009).

Responders who work together in these circumstances develop very close ties. The development of mental ill health and mental illness harms work performance and collegial relationships. Awareness and understanding of symptoms of ASD and PTSD and recognizing the need to ask for help can be instrumental in decreasing grave, disturbing, and preventable events such as the suicide of a volunteer first responder (Wilson, 2017).

Purpose of the Evaluation

The purpose of this DNP project is to decrease signs and symptoms of stress-related trauma in volunteer first responders by implementing a psychological first aid protocol. The clinical question is: In volunteer first responders in rural Mississippi, does a psychological first aid protocol, compared to no psychological first aid protocol, decrease secondary trauma-related signs or symptoms in three months?

The four objectives of this project were: recruitment of rural volunteer first responders, identification of current signs and symptoms of secondary stress, implementation of a psychological first aid protocol and, evaluation of the presence of secondary stress characteristics after a three months of the implementation of the protocol.

Review of the Evidence

The search strategy for evidence on this topic encompassed myriad databases including PubMed, CINAHL, Medline, and PsycINFO. Study acceptance parameters included English

language fluency, and sources from 1999 – 2018. Keywords facilitating the search included first responder, firefighter, PTSD, acute stress disorder, secondary trauma, resilience, and volunteer firefighters. One hundred and fifty primary and secondary sources initially met review parameters, with 31 ultimately accepted.

In the literature, one of the identified psychological obstacles that interferes with volunteer first responders' self-awareness and self-care is the cultural stigma of mental illness. The 'persona' of volunteer first responders there is that of bravery and courage, so acknowledgement or discussion of any perceived weakness is not encouraged, therefore, the symptoms they experience are often never addressed (Pao, 2017). Through the literature search, it became evident that three categories of mental health issues are particularly significant to volunteer first responders and psychological stress: Secondary Trauma, Acute Stress Disorder, and Post-Traumatic Stress Disorder.

Volunteer first responders who provide interventions in critical incidents are exposed to traumatic circumstances, leading to secondary traumatic stress (Elwood, Mott, Lohr, & Galovski, 2011). Carlson (2000) discovered that when a volunteer first responder experiences a traumatic event, his or her perception of that event determines if symptoms of secondary traumatic stress will develop. According to Elwood, Mott, Lohr, & Galovski (2011) secondary traumatization is a frequent reaction in those caring for individuals with trauma-related distress, which leads the volunteer first responder to have unrealistic opinions about their personal safety, control, individuality, and respect. Carlson (2000) also noted that volunteer first responders who are traumatized by occurrences often feel overwhelmed and powerless to control the outcome. The volunteer first responders may second guess themselves and wonder if the outcome of a particular event would have been different if managed in an alternative method.

According to Wilson (2017), volunteer first responders often build emotional 'barriers' as self-protection from distressing events. However, traumatic incidents have the ability to penetrate those defenses makeing them vulnerable to acute stress disorder. Edmonson (2010) reported that traumatic events lead to acute stress disorder, whether the trauma is actual or perceived, and through either primary (direct) or secondary trauma exposure. Edmonson (2010) also discovered that acute stress disorder exists in 10-20% of volunteer first responders who are acutely traumatized. Wilson (2017) found that the reaction to an occurrence or event will vary from one volunteer first responder to another. The same event that causes ASD in one volunteer first responder may not affect another. Diverse capabilities and experiences of the volunteer first responder manifests in the individual reaction. Regardless of the experience, proficiency, or the nature of the call, symptoms of ASD are evident when the volunteer first responder is reliving the occurrence and enduring nightmares or dreams. Mood changes, avoidance of traumatic memories, and emotional numbness can emerge. When these symptoms begin to interfere with work and home, the volunteer first responder is exhibiting specific signs and symptoms of ASD.

According to the American Psychiatric Association (2013), symptoms of acute stress disorder are separated into five categories; negative mood, dissociation, intrusion, avoidance, or arousal. ASD symptoms occur immediately after the event and persist for three days, or continually progress for one month. According to Wilson (2017), during a career as a first responder, the likelihood exists that ASD will manifest. Brazil (2017) revealed that volunteer first responders experience increased vulnerability to ASD due to the additional stress of home life and work agendas. The volunteer first responder may also have challenges adjusting between performing at a critical incident and subsequently reverting to their fulltime employment. According to Elwood, Mott, Lohr, & Galovski, (2011) both cognitive thoughts and

behavioral symptoms of secondary trauma progress to ASD and, subsequently, towards PTSD as a reaction to the cumulative exposure. Bryant (1999) found that early detection of ASD can decrease the risk of PTSD.

Nash & Watson (2012) identifies post-traumatic stress disorder as the most recognized and studied of all traumatic stress illnesses. According to the American Psychiatric Association (2013), PTSD is diagnosed when the symptoms of ASD continue for longer than one month. Post-traumatic stress disorder describes reactions that cause clinically significant impairment or distress in functioning. The DSM-5 acknowledges that the diagnosis of PTSD requires exposure to an event that encompassed or threatened death, violence, or severe injury (American Psychiatric Association, 2013). Khan et al., (2018) concedes that, although the exposure may be from primary contact, it can also result from secondary trauma known as a secondary traumatic stress disorder. For a diagnosis of PTSD, symptoms need to significantly impact the person's capability to function normally for more than one month. To meet the diagnostic criteria for PTSD, the American Psychiatric Association (2013) identifies symptom categories to meet the diagnostic criteria for PTSD include the presence of intrusion, avoidance, and alterations in arousal associated with the traumatic event.

Heyman, Dill and Douglas (2018) acknowledge that symptoms of PTSD can lead to depression, anxiety, and substance abuse, such as alcoholism. Several studies support the contention that forty to sixty percent (40-60%) of volunteer first responders binge drink for self-medication to alleviate unwanted nightmares and tension (Khan et al., 2018; Heyman, Dill & Douglas, 2018).

Sources in the literature identify several ways to mitigate the effects of secondary traumatic stress. Nash (2012) revealed than individual or group psychological debriefing should

follow any critical incident. According to Pao (2017), conversations examining repercussions of traumatic incidents on volunteer first responders should be a routine part of regular fire meetings.

Conceptual Framework

The Tidal Model (Figure 1), a nurse-created, mental health-based approach, is derived from research and clinical practice. The middle-range theory, developed by Professor Phil Barker in 1999, can be successfully utilized by an interdisciplinary healthcare team in a teamwork approach, and is suitable for myriad settings and populations (Barker, 2001). The Tidal Model derives its philosophy from Chaos theory, emphasizing that life and behavior are unpredictable-and that individual experiences, perceptions, thoughts, and actions link to the mental health recovery process (Barker & Buchanan-Barker, 2012).

The central concept of the Tidal Model is for the person to design their own course on the journey to better mental health. The Tidal Model highlights personal lived experiences, versions of events, and the individual's involvement in those incidents (Brookes, 2017). In this model, the individual is the leader with the interdisciplinary healthcare team providing support in the role as the helper. The interdisciplinary team in the Tidal Model consists of the individual volunteer first responder, the clinician/professional, colleagues, family, and friends. The team approach emphasizes the importance of interpersonal relationships and feelings of security. The core care plan consists of a holistic assessment of the volunteer first responder's personal story, the hidden meanings within the story, the available resources, and the essential needs to be addressed to assist in recovery (Barker, 2001).

On a daily basis, volunteer first responders encounter stressors related to the nature of their work. Often the type of occurrence will determine the quality of the stress (Moran, 2001).

With the Tidal Model, the stressors to which the volunteer first responders are exposed are illustrated by water. A single incident, or the accumulation of multiple experiences, produces the waves which isolate the volunteer first responder. The central idea of the Tidal Model is to find out what needs to be done immediately, during a crisis, and then to help develop a plan to support the person in leading a productive life through an emphasis on ordinary conversation between the interdisciplinary team and the volunteer first responder (Buchanan-Barker & Barker, 2008). The Tidal Model of recovery facilitates mental health wellness by embracing that relationship, and which leads the volunteer first responder to feel supported on the journey to restoration (Barker, 2001).

In the fire service, Critical Incident Stress Debriefings (CISD) and Psychological First Aid (PFA) are effective tools utilized to lessen the effects of the stressors encountered by volunteer first responders. Both of these interventions are known to improve outcomes, decrease difficulties related to the stressor, and reduce recovery times (McEvoy, 2005). The interdisciplinary team in the Tidal Model could apply the concepts of the CISD or PFA as a tool to engage the volunteer first responder in telling their story regarding the critical incidents that lead to the symptoms of stress (Barker, 2001). Given its ability to provide opportunities for re-empowering the individual, the Tidal Model is a very appropriate theory to employ in everyday practice in all healthcare settings (Brookes, Murata, & Tansey, 2008).

Methodology [Project Plan]

Following an in-depth review of the literature and selection of the Tidal Model as a conceptual framework, an implementation plan was developed and accomplished. Preliminary permissions were requested and received, including permission from the Fire Chief and Fire

District Coordinator to implement the project at rural volunteer fire department (Appendix A) and permission granted by Dr. Bride to utilize the Secondary Traumatic Stress Survey (Appendix B). Informed consent was obtained from the volunteer first responders who participated in the project (Appendix C), and approval from the Institutional Review Board was received (Appendix D), after which implementation of the project commenced.

Setting

Implementation of the project occurred at a rural volunteer fire department in Pontotoc County in Northeast Mississippi. The training officer and fire chief of the volunteer fire department implemented the psychological first aid protocol.

Participants

For this study, participants were recruited using a convenience sample from a 20-person rural fire department in Northeast Mississippi. Participant selection criteria included adult firefighters 20 years old and older, status as an active member of the volunteer fire department for at least two months, and with both verbal and written proficiency in English. Demographics of the original participants included 19 males and one female and an age range of 20 – 60 years. Current mental health status or prior issues with mental illness were not addressed.

Tools

A seven-question demographic survey, created by the author, assessed the demographic status of the participants. (Appendix E). After the demographic survey was completed, the Secondary Traumatic Stress Scale (STSS), by Dr. B.E. Bride (Appendix E) was utilized to assess the signs and symptoms of secondary trauma (Bride, Robinson, Yegidis, & Figley, 2004). This instrument is a 17-item self-report inventory, designed to measure secondary trauma symptoms

in human services personnel through three subscales identified as *Intrusion, Avoidance*, and *Arousal*, which are the diagnostic criteria for PTSD. The subscale *Intrusion* signifies that the traumatic event is being persistently re-experienced in the following way(s): undesirable or disturbing memories, nightmares, flashbacks, or emotional and physical distress after exposure to traumatic reminders. The subscale *Avoidance* denotes avoidance of all trauma-related stimuli, including thoughts, feelings, or reminders. The third subscale, *Arousal,* indicates arousal and reactivity that began or worsened after the trauma in the following way(s): irritability or aggression, risky behavior, hypervigilance, heightened startle reaction, difficulty concentrating and difficulty sleeping (American Psychiatric Association, 2013). The Secondary Traumatic Stress Scale evaluates secondary trauma though utilization of a Likert-type scale, ranging from 1 (*never*) to 5 (*very often*) and has been rated moderately to highly reliable in numerous studies (Ting, Frey, Sanders, Bride & Harrington,2005).

Implementation Process

Once approval for the project was obtained from the County Fire Coordinator and the department Fire Chief, firefighters who agreed to participate were provided with information regarding voluntary participation, confidentiality, and anonymity, after which consents were signed. The demographic survey and the STSS tool were then implemented

The participants each chose a unique identifier number which they utilized throughout the study. After completion of the survey, the psychological first aid protocol (Appendix G) was explained to the participants, and the protocol was implemented for 90 days.

When the three-month implementation was complete, the STSS was administered as a post-survey, and findings were compared. The author revisited the fire department and administered the post-test survey of the secondary traumatic stress scale. As was in the pre-test

survey, the author supervised and collected the survey, securing the sealed envelopes containing the confidential survey in a locked box.

Population Safety

There were several issues to consider for this project related to study population safety. Although the risk of a breach of confidentiality was low, steps were included to safeguard participant privacy. Due to the sensitive nature of the study and the participants' concern about privacy, participants were allowed to choose their own Participant Identifier number and follow the results of the pre- and post- surveys. After completion of both the initial and final surveys, the surveys were placed in sealed envelopes and locked in a secured box to ensure the privacy and confidentiality of all participants. All survey results were destroyed after the study was completed.

Another concerning issue of the project was protection of human subjects, especially if severe secondary trauma was initially identified or the protocol failed to decrease the severity of the symptoms. Unfortunately, no such survey has ever been provided to Mississippi firefighters prior to this study, so little to no awareness of possible mental health issues have been identified or acknowledged in the Mississippi first response community to date. Given the grim statistics related to first responders' behaviors due to mental ill health, dissemination of the project's study results will be provided to the county fire coordinator, who has the legal responsibility for the first responders' physical and mental well-being. The county fire coordinator has the responsibility and authority to follow up on the results of the study and provide resources and/or assistance for those firefighters deemed at risk.

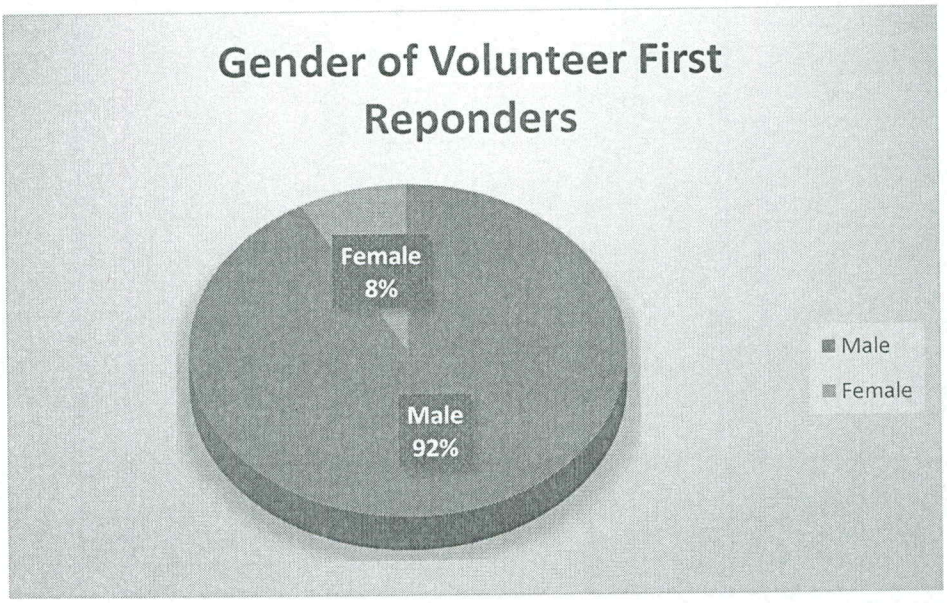
Findings and Evaluation

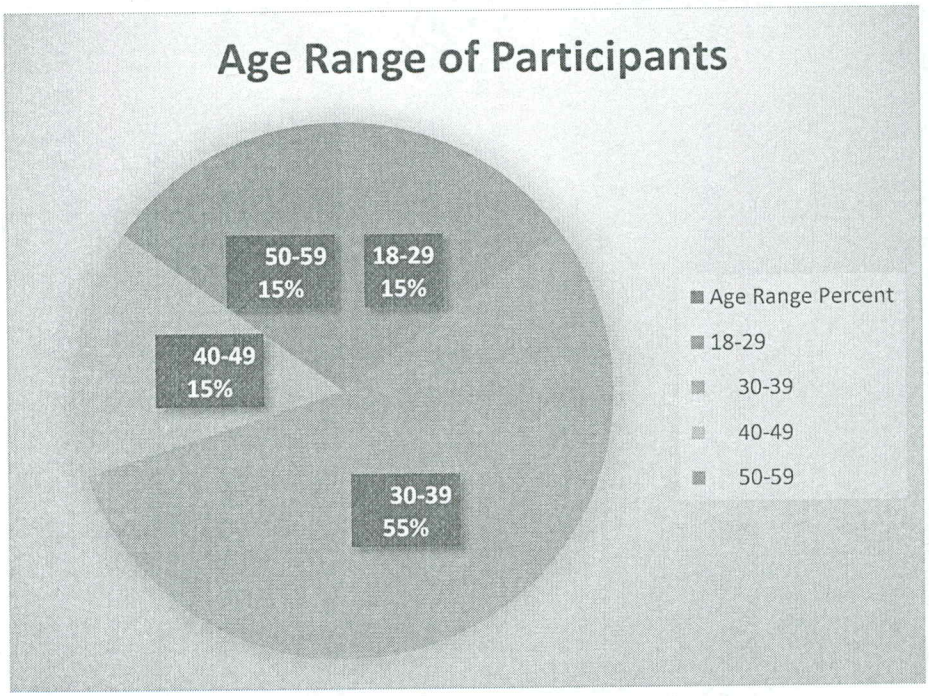
This project was a three-step quality improvement project, consisting of initial identification of the quantity and type of secondary trauma symptoms experienced by the volunteer first responders, implementation of the three-month psychological first aid protocol, and, lastly, assessment and analysis of changes in signs or symptoms of secondary trauma in the study participants.

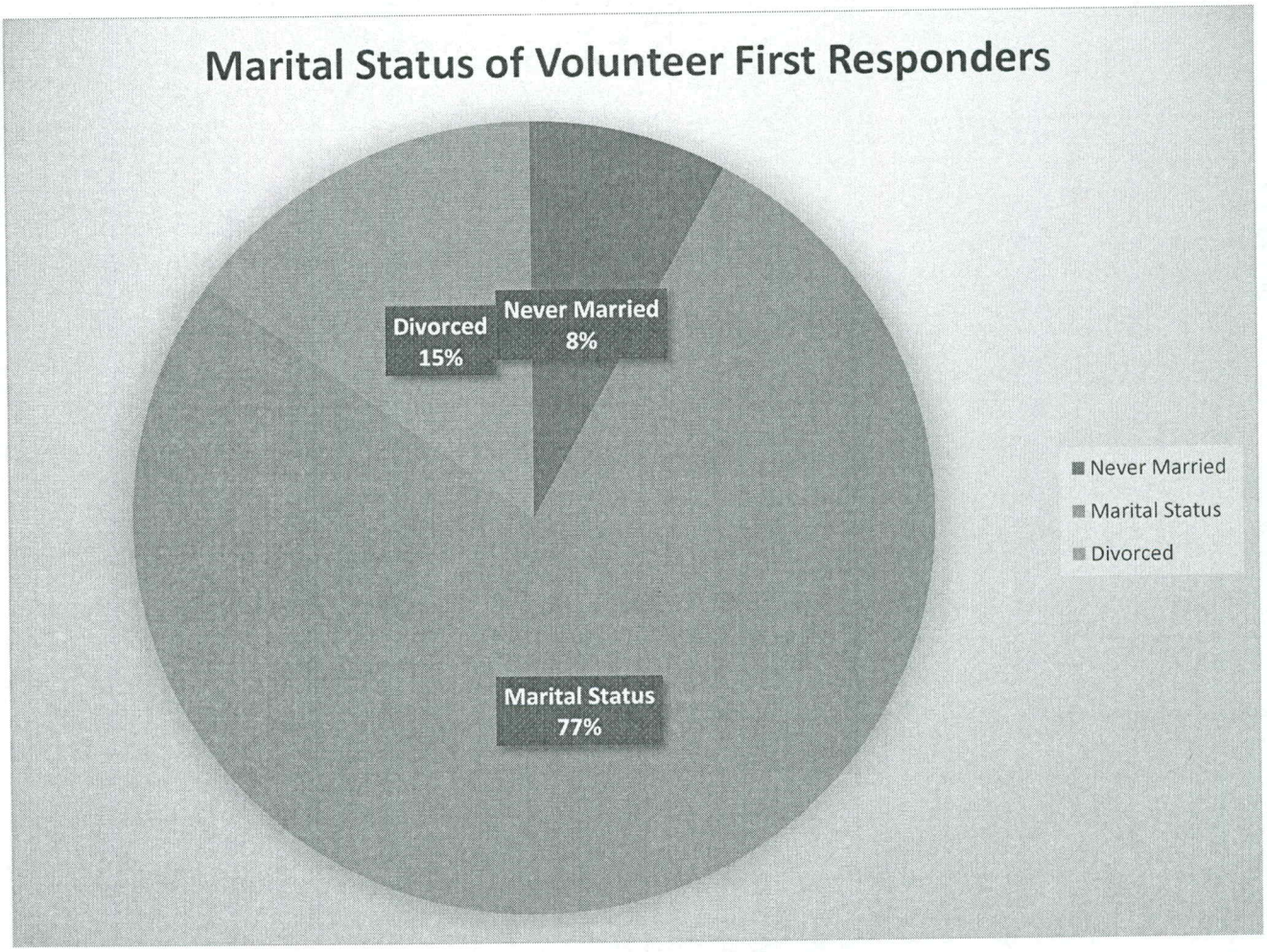
The evaluation for the project included interpretation and comparison of the pre and post survey data to distinguish if the psychological first aid protocol decreased signs or symptoms of secondary trauma in the volunteer first responders. All data collected from the project surveys were entered into IBM SPSS Statistics for Windows and comparison of the pre- and post- survey data was completed utilizing a paired t-test (IBM SPSS Statistics for Windows, 2016).

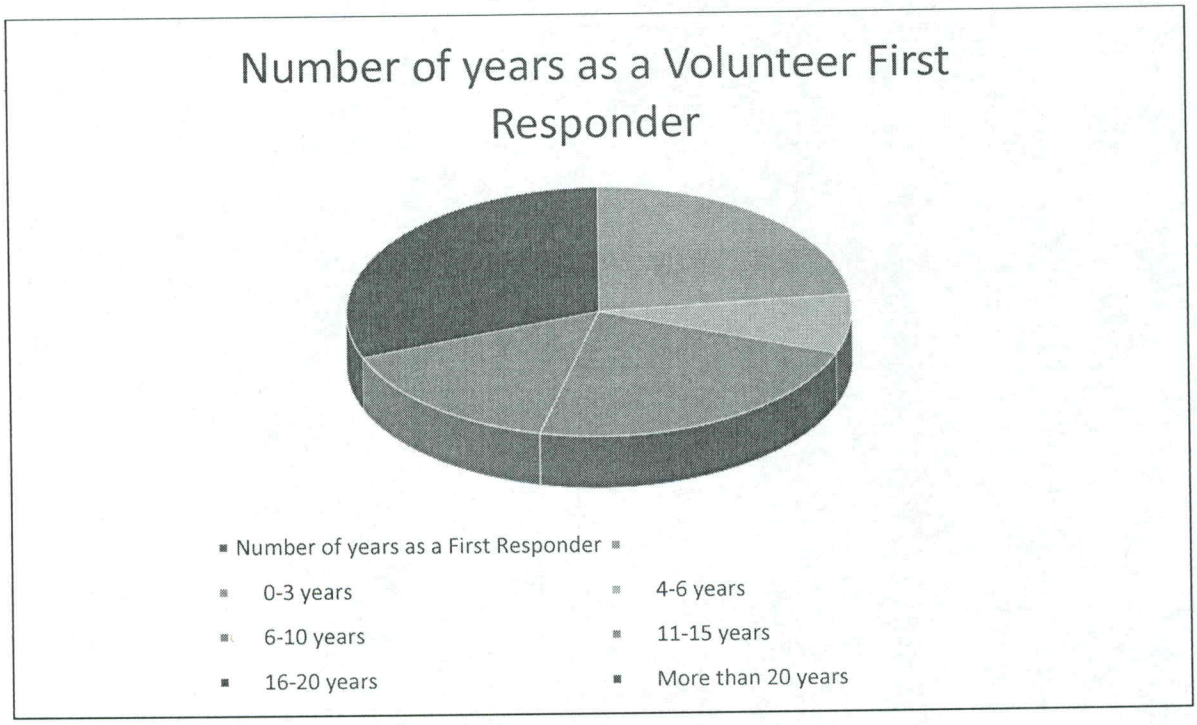
Ultimately, thirteen (n=13) volunteer first responders participated in both the pre and post-survey. The seven-question demographic survey results are listed below in the following charts:

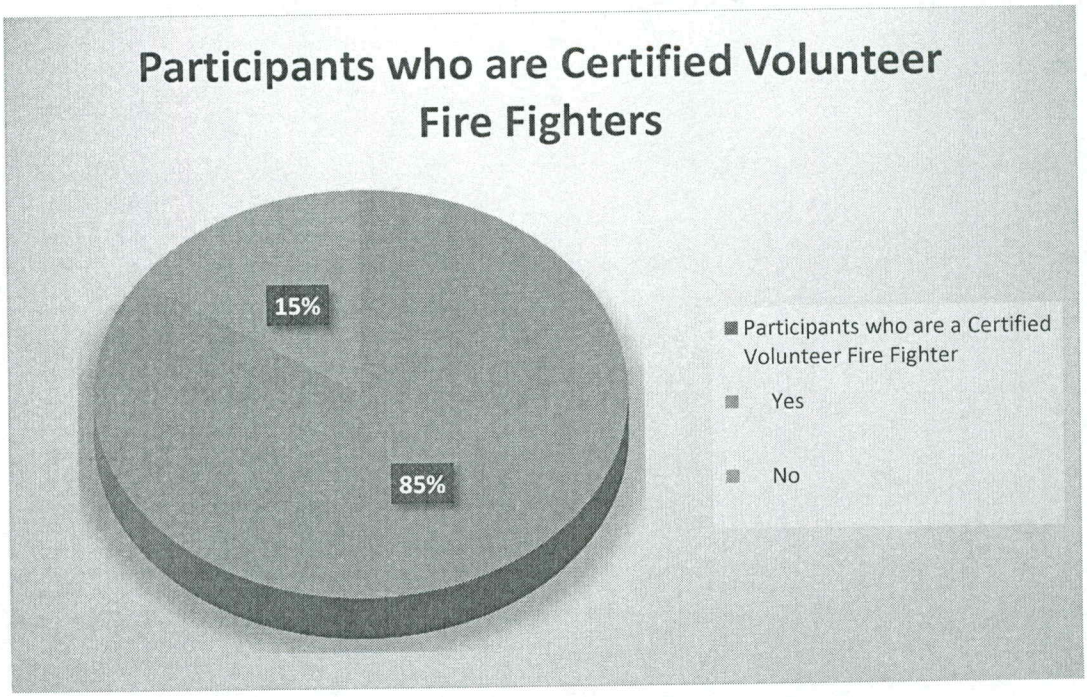
Participant Demographics Characteristics

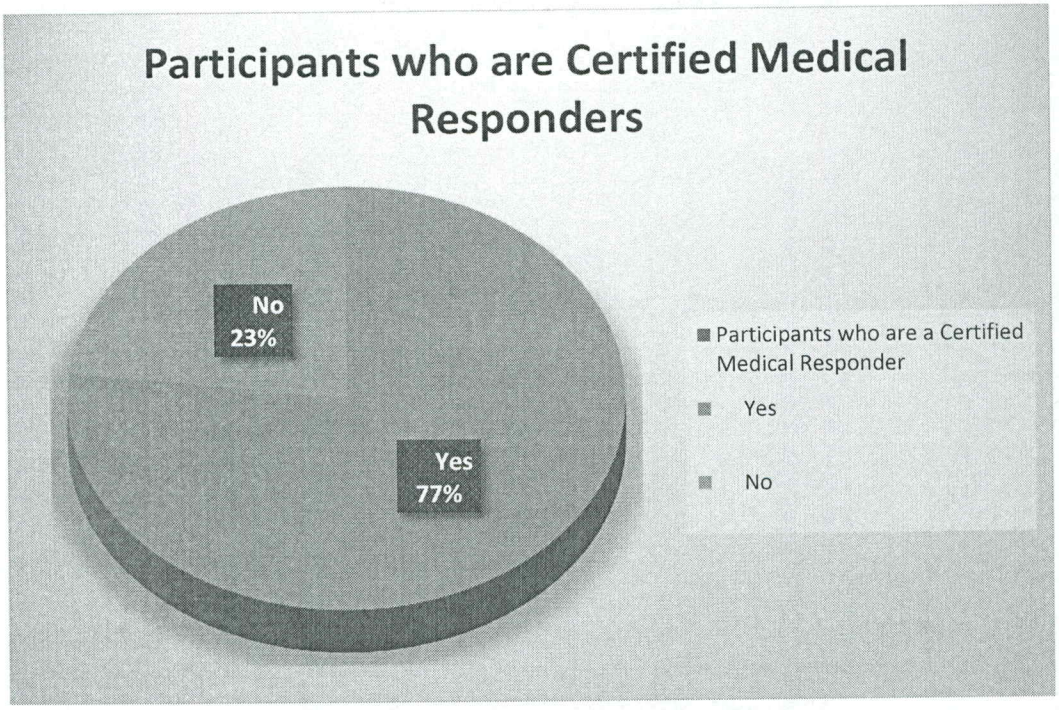


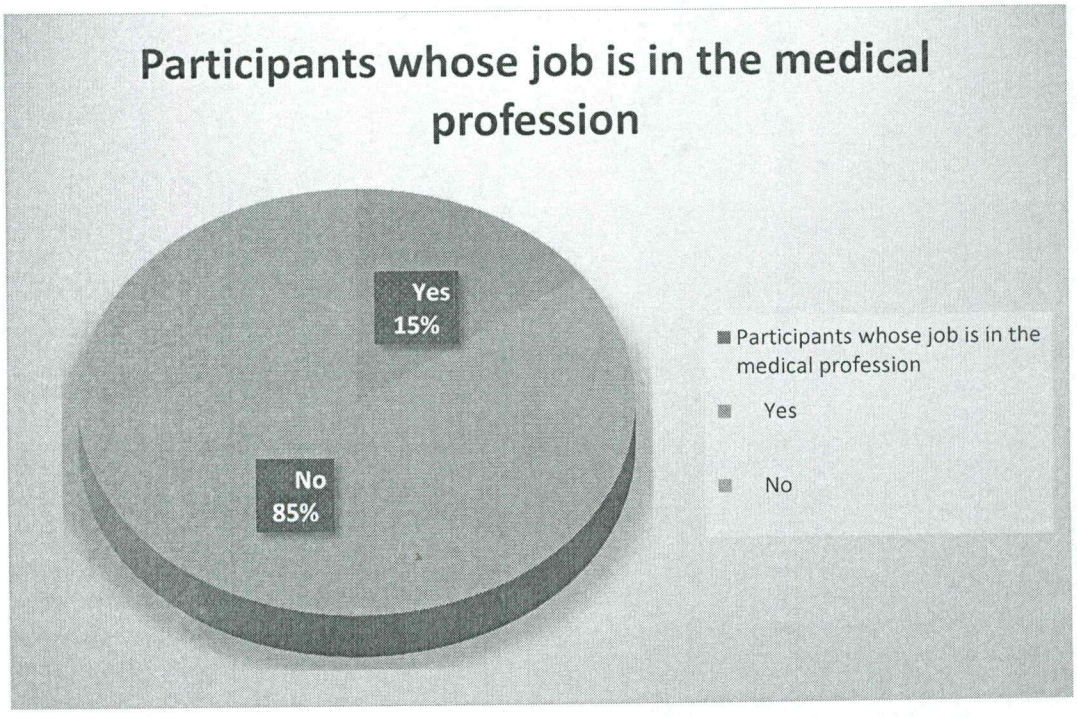



Marital Status of Volunteer First Responders
Divorced
15%
Never Married
8%
Marital Status
77%
Never Married
Marital Status
Divorced


Number of years as a Volunteer First Responder
Number of years as a First Responder
0-3 years
4-6 years
6-10 years
11-15 years
16-20 years
More than 20 years


Participants who are Certified Volunteer Fire Fighters
15%
85%
Participants who are a Certified Volunteer Fire Fighter
Yes
No


Participants who are Certified Medical Responders
No 23%
Yes 77%
Participants who are a Certified Medical Responder
Yes
No


Participants whose job is in the medical profession
Yes 15%
No 85%
Participants whose job is in the medical profession
Yes
No

The total scores were divided into mild, moderate, high, and severe trauma. Pre and post surveys comparisons result in improved signs or symptoms of secondary trauma. There was a clinically significant decrease in the total symptoms of secondary trauma from 62% to 38% (Table 2).

Differences in the severity of the symptoms from pre-survey to post-survey

	Pre-survey	Post-survey
Severe (49 and higher)	2	1
High (44-48)	4	1
Moderate (39-43)	2	3
Mild (28-37)	5	8

A paired-samples t-test was conducted to compare secondary trauma symptoms in volunteer first responders before the implementation of the psychological first aid protocol and after the implementation of the psychological first aid protocol. There was not a significant difference in the total scores of secondary trauma symptoms before the implementation of the psychological first aid protocol (M=40.54, SD=7.933) and the total scores of secondary trauma symptoms after the implementation of the psychological first aid protocol (M=36.08, SD=12.926); t 1.850, (p=.089) (Table 3).

However, the statistics did indicate a statistical difference in the subcategory of Avoidance (p=.048). Therefore, the implementation of the psychological first aid protocol did decrease the signs or symptoms related to avoidance (Table 3).

TABLE 3

	Pre survey		Post Survey				
Study Variable	Mean	Standard Deviation	Mean	Standard Deviation	T score	P value	95% Confidence Interval
Intrusion	12.00	3.606	10.92	4.481	1.313	.214	[-.71, 2.86]
Avoidance	15.31	3.250	12.69	5.879	2.207	**.048**	[.03, 5.19]
Arousal	13.23	3.113	11.38	4.194	1.825	.093	[-35, 4.05]
Total	40.54	7.933	36.08	12.926	1.850	.089	[.793,9.71]

A paired-samples t-test was also conducted to compare the severity of secondary trauma symptoms in volunteer first responders before the implementation of the psychological first aid protocol and after the implementation of the psychological first aid protocol. There was a significant difference in the severity of scores of secondary trauma symptoms before the implementation of the psychological first aid protocol (M=2.31, SD=1.251) and the severity of scores of secondary trauma symptoms after the implementation of the psychological first aid protocol (M=1.62, SD=.961); t=2.63, (p=.022) (Table 4).

Table 4

The difference in the severity of the symptoms from presurvey to post-survey

	Presurvey		Postsurvey				
Study Variable	Mean	Standard Deviation	Mean	Standard Deviation	T score	P value	95% Confidence Interval
Total	2.31	1.251	1.62	.961	2.63	**.022**	[.12, 1.26]

Discussion

The purpose of this DNP project was to decrease signs or symptoms of stress-related to secondary trauma in volunteer first responders by implementing a psychological first aid protocol. Although the implementation of the psychological first aid protocol did not statistically impact the signs or symptoms of secondary trauma due to the small number of participants, there was a clinical difference in the results. Also, a decrease in the mean values for both the total and subcategories were noticed. Similarly, a decrease in the percentage of those with secondary trauma signs or symptoms was achieved.

The results were comparable with other studies in the literature, which revealed that volunteer first responders do have signs or symptoms of secondary trauma.

Strengths: Several strengths of the study were identified throughout the process. One key strength of the project was that a large percentage of the available volunteer first responders, (65%) participated in the study. . One of the participants said after the pre-survey that he did not [even] realize he was having symptoms of secondary trauma; this reaction appeared to be a consistent theme noted by several of the other study participants as well. Another identified strength was the degree of the interest shown by the participants regarding the information presented; the participants were very concerned with the topic and were eager to participate in the project. A strong outcome of the project involved the recognition in this volunteer fire department that secondary trauma symptoms do exist. The County Fire Coordinator will be informed of the prevalence of secondary trauma and the necessity of implementing a formal method for managing secondary trauma in local volunteer first responders. This project also facilitated awareness and acknowledgement that, because secondary trauma symptoms exist in volunteer first responders, it is crucial for those individuals to be trained in self-identification of concerning symptoms.

Limitations

The most apparent limitation of this project was the small sample size. Future studies on this topic may consider combining several small fire departments to increase the participant population. Another identified problematic issue in project implementation was not due to participant motivation but was primarily due to actual utilization of the psychological first aid protocol. Although the protocol was reviewed and discussed, there is no way to verify the extent that it was utilized during events. A third limitation involved the response validity of at least two of the participants, whose responses appeared to be outliers. It is difficult to identify the root cause or causes of these outlying responses, although outside variables, misunderstanding of survey questions, or simply effective/ineffective use of the protocol may have contributed to the results noted. A possible solution to be utilized in the future involves including open-ended questions in the survey; these could increase knowledge related to participant motivation and utilization of the protocol, as well as supporting or obstructive considerations.

Implications for Nursing Practice

Healthcare providers, especially those in primary care, are in a particularly crucial position to address secondary trauma signs and symptoms in their first responder clients. Triage should commonly include questions to all clients regarding stress, and specifically about stress related to employment and volunteer work. It is important to identify clients at risk, such as volunteer first responders, and to allocate assessment of during the office visit. Nurses and other healthcare professionals who interact with volunteer first responders should be educated about and mindful of any apparent signs or symptoms of stress in the first responders in their community.

Conclusion

From responses received from the volunteer first responder community and state response administration, this project was of great value to the Mississippi first response community. The study provided county-level recognition that secondary trauma does exist, and that critical signs and symptoms can be identified and addressed. It is anticipated that the Fire District Coordinator will mandate county-wide implementation of a formal debriefing protocol to mitigate secondary traumatic stress in volunteer first responders, as well as appropriate training for both new and existing volunteer first responders. In addition, it is hoped that, in the future, the Fire Service administration at the state level will provide the necessary resources and training to favorably impact the reduction of secondary trauma in state first responders.

Dissemination

Results of this DNP project will be presented to the rural volunteer fire department in November 2019. The unique identifier numbers, chosen individually and privately by the participants, will be available so the individual may visualize their score pre-and post-survey. The County Fire Coordinator will be updated on the study findings and has the legal authority to authorize assistance and/or mental health counseling to those who need or desire assistance. It is anticipated that a training component related to secondary trauma will be developed and included in the revised Certified Volunteer Fire Academy course curriculum. The information will also be disseminated through manuscript submission to appropriate professional nursing and/or fire service journals. Publication of this study's findings will assist healthcare professionals in identifying opportunities for improved mental health care for first responders of all types.

Section II

Professional Journal Selection

The Journal of the American Psychiatric Nurses Association (JAPNA) is a peer-reviewed professional journal selected for this project's manuscript submission. The goal of dissemination of this project's information is to inform clinicians of all types, especially those working in family practice or in psychiatric specialties.

Scope and Aim of the Journal

JAPNA presents knowledge and educational material to improve psychiatric nursing care. This information can be beneficial to all avenues of psychiatric nursing, from prehospital to posthospital care. The primary goal of JAPNA is to publish research that provides information about psychiatric health care over the lifespan. The Journal encourages manuscripts that are relevant to psychiatric nursing, and provides critical and timely analysis of emerging issues and trends. The Journal encourages discussions of innovative models of practice which relate to the changing system of health care.

Implementation of a Psychological First Aid Protocol Related to Secondary Trauma in Volunteer First Responders

Abstract

BACKGROUND: Volunteer first responders have the potential to experience exposure to stressful events at every traumatic event. Continual contact with these types of events can lead to mental health problems such as alcoholism, drug abuse, depression, post-traumatic stress disorder, and acute stress disorder, all of which stem from secondary trauma. **PURPOSE:** The purpose of this study was to identify signs or symptoms of secondary trauma in volunteer first responders and to decrease these signs or symptoms by implementing a psychological first aid protocol. **DESIGN:** A pre/post survey and comparative analysis, and implementation of a psychological first aid protocol was utilized. **RESULTS:** Analysis using a paired-samples t-test was conducted to compare secondary trauma symptoms in volunteer first responders before and after the implementation of a psychological first aid protocol. There was not a significant difference in the total scores of secondary trauma symptoms (p=.089) after the implementation of the psychological first aid protocol; however, there was a significant decrease in the severity of symptoms (p=.022). Based on these results, the psychological first aid protocol indicated a clinical decrease in the number of signs and symptoms and a significant decrease in severity of the signs and symptoms of secondary trauma. **CONCLUSIONS:** Although there was not a statistical difference in the signs or symptoms, the signs or symptoms of severity were decreased

with a favorable clinical result. The study brought awareness of the signs or symptoms of secondary trauma to the first response community.

Keywords: volunteer first responder, firefighter, secondary trauma, acute stress disorder, post-traumatic stress disorder.

Introduction

First responders are firefighters, police officers, and emergency medical services who arrive first on the scene of emergencies, and are responsible for assistance, and often, coordination of care. Firefighters are an integral and crucial sector of the first responder organization. Fire department personnel are categorized as either career (paid) first responders or volunteer first responders; 55% percent of all U.S. firefighters are volunteer first responders. There were 35,320,000 U.S. fire department calls in 2016. As of January 2018, there were 27, 217 fire departments in the United States with 1,217,800 fire department personnel. Volunteer first responder calls include fires, emergency medical incidents, motor vehicle accidents, terrorist events, natural disasters, hazardous materials incidents, water rescue and, confined space emergencies.

Every 24 seconds, a fire department responds to an emergency. Volunteer first responders who have personal obligations, provide a service to the community, often within a moment's notice and at an inconvenient time. Volunteer first responders are on the front line in tragedies that develop in their communities. These traumatic events involve their friends, families, and co-workers. Volunteer first responders spend an enormous amount of time away from their families due to the requirements of this 'second' job, such as 24/7 on-call shifts, emergency training, and maintenance of equipment and supplies. For the public, the volunteer first responders are the first line of defense in the adversity of traumatic events. These occurrences can vary from

simple, such as assisting a person who has fallen or providing emergency medical services (EMS) support, to elaborate and disturbing such as a motor vehicle accident, a baby choking, or a building fire. Volunteer first responders experience a variety of often overwhelming stressors, not the least of which is balancing personal and professional obligations with the complex demands and frequently poor outcomes of first response. These stressors are cumulative and frequently propel volunteer first responders into quiet, sometimes unacknowledged, mental health crises.

Mental health problems such as alcoholism, drug abuse, depression, Post-traumatic Stress Disorder (PTSD), Acute Stress Disorder (ASD), and Secondary Traumatic Stress Disorder (STSD) affects many volunteer first responders. These mental health disorders share similarities as well as demonstrate distinct differences. Although the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) identifies the same behaviors in both ASD and PTSD, the time frames differ. ASD is defined as the emergence of specific behaviors between three days and one month after a traumatic event, while PTSD is defined as beginning a month or more after the event with 37% of volunteer first responders displaying these symptoms. Secondary Trauma is defined as exposure to the traumatic events of others. Volunteer first responders work at ground zero, participating in distressing incidents daily; witnessing the trauma felt by the victims can manifest struggles in volunteer first responders such as mental health concerns due to secondary trauma. The variety of stress-related disorders are interlinked; if Secondary Trauma is not mitigated, it can develop into ASD, then PTSD if symptoms persist.

Many factors influence the volunteer first responder's vulnerability to the effects of secondary trauma. This susceptibility is often triggered by professional demands of the profession, multiple consecutive calls, sleep disturbance, poor outcomes, the inherent danger of

the occupation, and the lack of effective debriefing. Although the above is true for all first responders, there is additional significance for the volunteer first responders, who often return to their responsibilities at home or career directly from the scene of the incident, leading to a tendency to minimize and suppress distressing thoughts and feelings. The continual accumulation and suppression of these feelings can lead to ASD and PTSD.

Volunteer first responders have a higher incidence of PTSD and depression, as well as suicidal ideations. A staggering 47% percent of volunteer first responders have thoughts of suicide with more deaths by suicide in 2017 than deaths in the line of duty. Lack of mental health screening, work and family expectations, inadequate training for critical incidents, and obstacles to mental health treatment link the prevalence of mental illness to volunteer first responders. A higher risk for mental health problems parallels the lack of strategic recruitment, screening, and rapid transformation from civilians to volunteer first responders.

Several considerations impact the ability and willingness of volunteer first responders to accept mental health support, including access to health care. Mental health services are more readily available in specific geographic locations, such as urban areas, while access to services may be more problematic in rural or remote areas. An additionally issue is the lack of corporate benefits (medical insurance) from the fire service. Cultural attitudes towards mental health, such as masculinity, also impact the likelihood of male volunteer first responders in seeking treatment.

The understanding of symptoms of ASD and PTSD, as well as recognizing the need to ask for help, can be instrumental in decreasing disturbing events, such as the suicide of a volunteer first responder.

Methods

Participants were volunteer first responders on the rural volunteer fire department in Northeast Mississippi. There were 20 members in this department, including nineteen males and one female. The age of the first responders was 20 to 60 years. The inclusion requirements included participants who were members of this particular volunteer fire department for at least two months, ages between 20 and 60 years old, fluency in English, and willingness of the volunteer first responder to participate in the project. Any prior or current mental health diagnosis of any participant was not ascertained. The author recruited the participants through a convenience sample.

The Secondary Traumatic Stress Scale (STSS), by Dr. B.E. Bride was utilized to assess the signs and symptoms of secondary trauma. This instrument was a 17 item self-report measuring secondary trauma related to intrusion, avoidance, and arousal, which are the diagnostic criteria for PTSD. Internal consistency reliability for the total STSS 17-items was very high ($\alpha = .94$) and was moderately high for the five-item Intrusion subscale ($\alpha = .79$), the seven-item Avoidance subscale ($\alpha = .85$), and five-item Arousal subscale ($\alpha = .87$) .To evaluate the score for secondary trauma, a Likert-type scale with a rating of '1' (never) to '5' (very often) was employed. Seven questions, composed by the author, identified the basic demographics.

For tracking purposes, each participant created a unique identifier number written on the pre and post-surveys. The completed demographic surveys were placed in sealed envelopes and locked in a secured box to ensure the privacy and confidentiality of all participants. After the demographic survey was completed, the author provided and explained the psychological first aid protocol to the participants for implementation over the next three months.

After three months, the author revisited the fire department and administered the post-test survey of the Secondary Traumatic Stress Scale. As in the pre-test survey, the author supervised

and collected the surveys and secured the sealed envelopes containing the confidential survey in a locked box.

This project was a quality improvement project. The initial survey endeavored to determine the quantity and type of secondary symptoms experienced by the volunteer first responders. The second portion of the project was the three month implementation of the psychological first aid protocol related to stress encountered at critical incidents. The last segment of the project included the post-survey, assessing changes in signs or symptoms of secondary trauma.

Population Safety

There were several issues to consider for this project related to study population safety. Although the risk of a breach of confidentiality was low, steps were included to safeguard participant privacy. Due to the sensitive nature of the study and the participants' concern about privacy, participants were allowed to choose their own Participant Identifier number and follow the results of the pre- and post- surveys. After completion of both the initial and final surveys, the surveys were placed in sealed envelopes and locked in a secured box to ensure the privacy and confidentiality of all participants. All survey results were destroyed after the study was completed.

Another concerning issue of the project was protection of human subjects, especially if severe secondary trauma was initially identified or the protocol failed to decrease severity of the symptoms. Unfortunately, no such survey has ever been provided to Mississippi firefighters prior to this study, so little to no awareness of possible mental health issues have been identified or acknowledged in the Mississippi first response community to date. Given the grim statistics related to first responders' behaviors due to mental ill health, dissemination of the project's study

results will be provided to the county fire coordinator, who has the legal responsibility for the first responders' physical and mental well-being. The county fire coordinator has the responsibility and authority to follow up on the results of the study and provide resources and/or assistance for those firefighters deemed at risk.

Results

The results interpreted and compared the pre- and post- data to distinguish if the psychological first aid protocol decreased signs or symptoms of secondary trauma in the volunteer first responders. SPSS data management system was used to analyze the data using a paired t-test.

Thirteen (n=13) volunteer first responders participated in both the pre and post-survey. According to the seven-question demographic survey,12 participants were male, and one was a female. Two participants were 29 and younger. The majority of the participants (seven) were between 30 and 39 years old. Two participants were age 40 to 49, and two participants were age 50 to 59. The majority of the participants are married, with one participant never married, and two divorced. The range for years of working as a volunteer first responder was sizable. Three participants had been a responder for less than four years, one for 4-6 years, three for 6-10 years, two for 11-15 years, and four for 16-20 years. Eleven of the participants were certified volunteer firefighters, indicating they had graduated from the volunteer fire academy. Ten participants were certified emergency medical responders, signifying they have undergone and passed the emergency medical responder (EMR) certification classes. Two of the participants had a full-time job in the medical profession.

The secondary trauma survey consisted of 17 questions. The questions were divided into three subcategories with five questions related to intrusion, seven questions related to avoidance

and the remaining five questions regarding arousal. Instructions to the participants for the presurvey were to indicate how frequently an item was correct for them since functioning as a first responder. The instructions for the post-survey were to indicate how frequently an item was correct since the implementation of the psychological first aid protocol. The Likert scale with 1=never and five = very often was utilized for the responses. The total scores between 28 and 37 indicated mild trauma, scores between 38 and 43 signified moderate traumas, scores in the range of 44 to 48 suggested high trauma, and scores of 49 and above were considered severe trauma.

The pre and post surveys were analyzed to discover if the implementation of the first aid protocol improved signs or symptoms of secondary trauma. There was a clinically significant decrease in the total symptoms of secondary trauma from 62% to 38%. A paired-samples t-test was conducted to compare secondary trauma symptoms in volunteer first responders before and after implementation of the psychological first aid protocol. There was not a significant difference in the pre-implementation total scores of secondary trauma symptoms (M=40.54, SD=7.933) and the post-implementation total scores of secondary trauma symptoms. (M=36.08, SD=12.926); t (1.850, (p=.089).

A paired-samples t-test was also conducted to compare the severity of secondary trauma symptoms in volunteer first responders before and after the implementation of the psychological first aid protocol. There was a significant difference in the severity of scores between pre-implementation secondary trauma symptoms (M=2.31, SD=1.251) and the severity of post-implementation scores of secondary trauma symptoms (M=1.62, SD=.961); t=2.63, (p=.022).

These results indicated that the psychological first aid protocol did not decrease signs or symptoms of secondary trauma for subcategories intrusion and arousal. However, the statistics

did specify a statistical difference in the subcategory of avoidance (p=.048). Therefore, the implementation of the psychological first aid protocol did decrease the signs or symptoms related to avoidance.

Discussion

Although the implementation of the psychological first aid protocol did not statistically impact the signs or symptoms of secondary trauma, there was a clinical difference in the results. Also, a decrease in the mean values for both total and subcategories was noticed. Similarly, a decrease in the percentage of those with secondary trauma signs or symptoms was achieved.

The results were comparable with other studies, which revealed that volunteer first responders do have signs or symptoms of secondary trauma. An anticipated significant statistical difference in the results was expected, but the small sample size was a contributing factor to the lack of a noteworthy statistical difference. One of the participants said after the presurvey that he did not realize he was having symptoms of secondary trauma; this awareness is representative of several of the other participants as well. The participants were interested in the information presented and were very concerned with the topic and eager to be a part of the project.

The difficulties in the implementation of the project were not necessarily the motivation but the actual involvement in utilizing the psychological first aid protocol. It is not known how extensively the protocol was utilized. A strength of the project involved the recognition for this volunteer fire department that secondary trauma symptoms do exist. The prevalence of secondary trauma and the necessity of a formal implementation method for managing secondary trauma is warranted. This project also provided validation that secondary symptoms exist, even though the volunteer first responders might not have had an awareness or understanding of the symptoms.

The most apparent limitation was the small sample size. Ideally, all the volunteer first responders on this particular volunteer fire department would have participated; nevertheless, the sample size would have still been quite small (N=20). In the future, several small fire departments could be asked to participate to increase participant numbers. Other limitations were whether the protocol was actually implemented, and the validity of scores of at least two of the participants. One of the participates scored severe in the pretest and had an even higher score after the implementation. To what extent outside variables could have affected this increase in severity is not known. One participant had an overall score of thirty-one on the presurvey and a score of seventeen on the post-survey. This participant answered all the questions with a score of one, which indicates that he did not experience any of the signs or symptoms after the implementation. It is challenging to have confidence in such a drastic change in the score; however, this participant could have utilized the protocol to its fullest extent, and was highly successful in decreasing his or her stress. Open-ended questions could have revealed to what extent the psychological first aid protocol was utilized and what particular areas aided or hindered the volunteer first responder.

Implications for Nursing Practice

In primary and family practice clinics, nurses should always ask questions regarding stress at each client's initial triage. Also, the nurse should specifically question the client about stress related to both employment and volunteer work. Nurses need to convey to the health care provider which clients are volunteer first responders; that would assist in allocating appropriate time for discussions concerning stress during the office visit. These inquiries could identify potential problems and at-risk clients. Nurses in the community who interact with volunteer first responders should be mindful of any apparent signs or symptoms of stress.

Conclusion

The study provided county-level recognition that secondary trauma does exist, and that critical signs and symptoms can be identified and addressed. It is anticipated that the fire district coordinator will mandate a countywide implementation of a formal debriefing and implementation of a protocol to alleviate secondary traumatic stress. In the fire services at the state level, awareness of the issue, and a method to favorably impact the reduction of the signs or symptoms of secondary trauma, is anticipated.

With the knowledge regarding the results, mental health counseling will be provided to those who desire assistance. Encouragement in the continuation in the implementation of the psychological first aid protocol will be expressed to the department. The Mississippi State Fire Academy will also be given the results of the study; it is hoped that, in the future, the Fire Service administration at the state level will provide the necessary resources and training to favorably impact the reduction of secondary trauma in state first responders.

Table 1: Participant Demographics

Characteristic	Value	Percentage
Participants (n)	13	
Gender		
Male	12	92
Female	1	08
Age Range		
18-29	2	15
30-39	7	55
40-49	2	15
50-59	2	15
Marital Status		
Never Married	1	08
Married	10	77
Divorced	2	15
Years as a First Responder		
0-3 years	3	23
4-6 years	1	08
6-10 years	3	23
11-15 years	2	15
16-20 years	4	31
Certified Volunteer Fire Fighter		
Yes	11	85
No	2	15
Certified Medical Responder		
Yes	10	77
No	3	23
Job is in the medical profession		
Yes	2	15
No	11	85

Table 2:

Statistics

	Pre survey		Post Survey				
Study Variable	Mean	Standard Deviation	Mean	Standard Deviation	T score	P value	95% Confidence Interval
Intrusion	12.00	3.606	10.92	4.481	1.313	.214	[-.71, 2.86]
Avoidance	15.31	3.250	12.69	5.879	2.207	.048	[.03, 5.19]
Arousal	13.23	3.113	11.38	4.194	1.825	.093	[-35, 4.05]
Total	40.54	7.933	36.08	12.926	1.850	.089	[-.79, 9.71]

Table 3: Statistics

	Presurvey		Postsurvey				
Study Variable	Mean	Standard Deviation	Mean	Standard Deviation	T score	P value	95% Confidence Interval
Total	2.31	1.251	1.62	.961	2.63	.022	[.12, 1.26]

Implementation of a Psychological First Aid Protocol Related to Secondary Trauma in Volunteer First Responders

by

Angela Orsborn, MSN, RN, FNP-BC, PMHNP-BC

171 Lakeview LN, Pickensville, AL 35447

angelaorsborn@yahoo.com

662-316-3938

&

Marlena Primeau, DNP, FNP-BC, NHDP-BC, BSHECS

Clinical Associate Professor

The University of Alabama in Huntsville

Authors Roles

Angela Orsborn: Original concept, research, and article drafting.

Marlena Primeau: Drafting and critical revision for intellectual content.

Declaration of Conflicting Interest

The author(s) declared no potential or actual conflicts of interest concerning the research project, authorship, or publication of this article.

Funding

The author(s) receded no financial support for the research, authorship, or publication of this article. The project did not receive funds or grants. The author's funds covered the expense of copying documents.

References

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC: Author.

Federal Communication Commission. (2010). First responders. Retrieved from: https://www.fcc.gov/first-responders

Heyman, M., Dill, J., & Douglas, R. (2018, April). Ruderman White Paper: Mental Health and Suicide of First Responders: Retrieved from http://issuses. Com/rudermanfoundation/docs/first_responder_white_paper_final_ac270d530f8bfb

IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp

Milen, D. (2009). The Ability of Firefighting Personnel to Cope with Stress. *Journal of Social Change, 3*, 38-56.

Milligan-Saville, J., Choi, I., Deady, M., Scott, P., Tan, L., Calvo, R. A., . . . Harvey, S. B. (2018). The impact of trauma exposure on the development of PTSD and psychological

distress in a volunteer fire service. *Psychiatry Research, 270*, 1110-1115. doi:10.1016/j.psychres.2018.06.058

Molnar, B. E., Sprang, G., Killian, K. D., Gottfried, R., Emery, V., & Bride, B. E. (2017). Advancing Science and Practice for Vicarious Traumatization/Secondary Traumatic Stress: A Research Agenda. *Traumatology, 23*(2), 129-142. doi:10.1037/trm0000122

National Fire Protection Association. (2016). Retrieved from https:www.nfpa.org

National Volunteer Fire Council. (2017). Retrieved from https://www.nvfc.org/wp-content/uploads/2016/02/NVFC-Fact-Sheet-2017.pdf

Stanley, I. H., Boffa, J., Hom, M., Kimbrel, N., & Joiner (2016). Differences in psychiatric symptoms and barriers to mental health care between volunteer and career firefighters. *Psychiatry Research, 247, 236-242.*

U.S. Fire Administration. (2008, March). *Emerging health and safety issues in the volunteer fire service FA-31.* Retrieved from: https://www.usfa.fema.gov/downloads/pdf/publications/fa_317.pdf

Wilmoth, J. (2014, May). Trouble in Mind. *National Protection Fire Association.* Retrieved from: https://www.nfpa.org/news-and-research/publications/nfpa-journal/2014/may-june-2014/features/special-report-firefighter-behavioral-health

Wilson, H. (2017, December 19). The next few weeks are gonna suck: Acute stress disorder in firefighters. *National Volunteer Fire Council*

Table 1

Participant Demographics Characteristics

Characteristic	Value	Percentage
Participants (n)	13	
Gender		
Male	12	92
Female	1	08
Age Range		
18-29	2	15
30-39	7	55
40-49	2	15
50-59	2	15
Marital Status		
Never Married	1	08
Married	10	77
Divorced	2	15
Number of years as a First Responder		
0-3 years	3	23
4-6 years	1	08
6-10 years	3	23
11-15 years	2	15
16-20 years	4	31
More than 20 years	0	00
Participants who are a Certified Volunteer Fire Fighter		
Yes	11	85
No	2	15

Participants who are a Certified Medical Responder		
Yes	10	77
No	3	23
Participants whose job is in the medical profession		
Yes	2	15
No	11	85

Table 2

Differences in the severity of the symptoms from presurvey to post-survey

	Presurvey	Post-survey
Severe	2	1
High	4	1
Moderate	2	3
Mild	5	8

Table 3

Statistics

	Pre survey		Post Survey				
Study Variable	Mean	Standard Deviation	Mean	Standard Deviation	T score	P value	95% Confidence Interval
Intrusion	12.00	3.606	10.92	4.481	1.313	.214	[-.71, 2.86]
Avoidance	15.31	3.250	12.69	5.879	2.207	.048	[.03, 5.19]
Arousal	13.23	3.113	11.38	4.194	1.825	.093	[-35, 4.05]
Total	40.54	7.933	36.08	12.926	1.850	.089	[.793,9.71]

Table 4

The difference in the severity of the symptoms from presurvey to post-survey

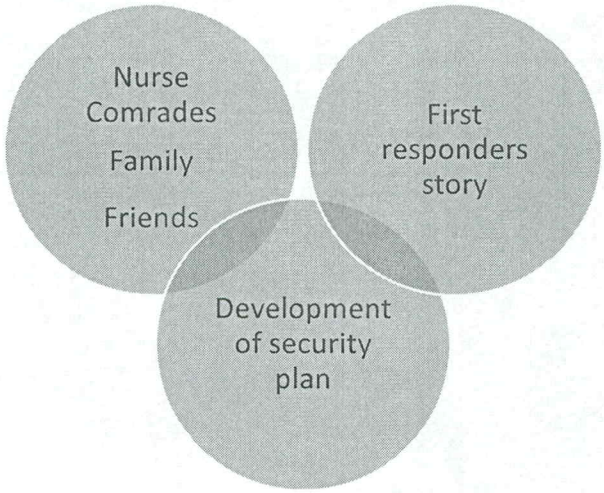
	Presurvey		Postsurvey				
Study Variable	Mean	Standard Deviation	Mean	Standard Deviation	T score	P value	95% Confidence Interval
Total	2.31	1.251	1.62	.961	2.63	.022	[.12, 1.26]

Figures

Figure 1

Theoretical Model

Middle range theory of The Tidal Model by Phil Barker. The multidisciplinary teamwork will consist of the nurse, comrades, family, and friends. The security plan is to emphasize on making the first responder feel secure. The core care plan based on holistic assessment is the story, the hidden meanings, first responder's resources, and needs to be addressed to assist in recovery.


Nurse
Comrades
Family
Friends
First
responders
story
Development
of security
plan

Appendix A

Phil <ecru09@hotmail.com> Thu, Mar 7, 2019, at 2:55 PM
To: Angela Orsborn <ajo0004@uah.edu>
Cc: "tinythaxtonfc1@gmail.com" tinythaxtonfc1@gmail.com

Angela,
We will be glad to participate in the below. You have my permission to work with our department.

Sent from my iPhone

To: tinythaxtonfc1@gmail.com, ecru09@hotmail.com

Mr. Paton and Mr. Stokes,
I am seeking permission to gather data concerning secondary trauma in volunteer first responders at Ecru Volunteer Fire Department. I will render a survey which will contain 8 demographic questions and 17 questions related to stress from secondary trauma. After the survey I will present a psychological first aid protocol with the department chief and training officer and ask the training officer or chief (whichever one is at the meeting) to implement the protocol at each meeting for the next 3 months. After the 3 months I will then ask the participants who volunteered to participate in the first survey to retake the initial survey to evaluate if the implementation of a psychological first aid protocol decreased the signs or symptoms of secondary stress. The participation in the project is voluntary and anonymous. I will not know who filled out the survey. The participant will need to add the last 4 numbers of their social security number to the survey in order for me to compare the data from pretest to posttest after the implementation. This number will not be used when revealing the results. Implementation of the project will be sometime this summer at the regular fire department meetings. I will include the department in the dissemination of the results after completion of the project sometime in the fall. This projected DNP project will be reviewed and approved by the Internal Review Board (IRB) at the University of Alabama in Huntsville before implementation. In reviewing the proposed project, the IRB will make sure that no participant will be injured in any capacity ether mentally or physically before it can be approved. Much care and professionalism go into a DNP project by the chair of the committee, the clinical mentor and myself to insure confidentiality. I hope the both of you will grant permission and I look forward to working with the Ecru Volunteer Fire Department in the implementation of a DNP project that will help identify secondary trauma and a protocol to alleviate the symptoms surrounding it.

Sincerely,

Angela Orsborn, RN, MSN, FNP-BC, PMHNP-BC, DNP Student at UAH

Appendix B

Permission from Dr. Bride to use Secondary Traumatic Stress Scale

2/25/2019 10:31 AM

Hi Angela,

Permission granted.

Best,

Brian

Brian E. Bride, Ph.D., M.S.W., M.P.H.
Distinguished University Professor
Director, School of Social Work
Georgia State University
55 Park Place NE, 5th Floor
Atlanta, GA 30302

On Feb 22, 2019, at 7:56 PM, Angela Orsborn <ajo0004@uah.edu> wrote:

Dr. Bride,

I am a doctorate of nursing practice (DNP) student at the University of Alabama in Huntsville. I am preparing my scholarly project on secondary trauma in volunteer first responders. I want permission to use the Secondary Traumatic Stress Scale for this project. If you need confirmation of my proposal, please contact my chair, Dr. M. Primeau, at 256-824-2449 or primeam@uah.edu.

Thank you,

Angela Orsborn, MSN, FNP-BC, PMHNP-BC, DNP Student-UAH

Appendix C

Consent Form: Implementation of a Psychological First Aid Protocol Related to Secondary Trauma in Volunteer First Responders

You are invited to participate in a research study about signs and/or symptoms of secondary trauma in volunteer first responders and if a psychological first aid protocol will change the symptoms. This study is designed to help us to better understand how a psychological first aid protocol can decrease signs and/or symptoms of secondary trauma. The primary investigator is Angela Orsborn from The University of Alabama in Huntsville.

PROCEDURE TO BE FOLLOWED IN THE STUDY: Participation in this study is completely voluntary. Once written consent is given; you will be asked to complete a 25-question survey. This session will take 30 minutes.

DISCOMFORTS AND RISKS FROM PARTICIPATING IN THIS STUDY: There are no expected risks associated with your participation.

EXPECTED BENEFITS: Results from his study can benefit society by helping volunteer first responders prevent and manage stress related to traumatic events in which they are exposed, therefore allowing them to continue to render safe effective aid to the community.

CONFIDENTIALITY OF RESULTS: Self-created unique number identifiers will be used to record your data, and these numbers will be made available only to those researchers directly involved with this study, thereby ensuring strict confidentiality. This consent form will be destroyed after 3 years. The data from your pre and post surveys will only be released to those individuals who are directly involved in the research and only using your self-created unique number identifier.

FREEDOM TO WITHDRAW: You are free to withdraw from the study at any time. You will not be penalized because of withdrawal in any form. Investigators reserve the right to remove any participant from the session without regard to the participant's consent.

CONTACT INFORMATION: If you have any questions, please ask them now. If you have questions later on, you may contact the Principal Investigator Angela Orsborn, 662-316-3938, ajo0004@uah.edu or faculty supervisor, Dr. Marlena Primeau, 256-824-2449 primeam@uah.edu . If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Office of the IRB (IRB) at 256.824.6992 or email the IRB chair Dr. Ann Bianchi at irb.@uah.edu.

If you agree to participate in our research please sign and date below.

This study was approved by the Institutional Review Board at UAH and will expire in one year from <date of IRB approval>.

_____ _____

Name (Please Print) Signature Date

Appendix D

Date: 17 June 2019

PI: Angela Orsborn
PI Department: College of Nursing
The University of Alabama in Huntsville

Dear Angela,

The UAH Institutional Review Board of Human Subjects Committee has reviewed your proposal titled: *Implementation of a Psychological First Aid Protocol Related to Secondary Trauma in Volunteer First Responders* and found it meets the necessary criteria for approval. Your proposal seems to be in compliance with these institutions Federal Wide Assurance (FWA) 00019998 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Please note that this approval is good for one year from the date on this letter. If data collection continues past this period, you are responsible for processing a renewal application a minimum of 60 days prior to the expiration date.

No changes are to be made to the approved protocol without prior review and approval from the UAH IRB. All changes (e.g. a change in procedure, number of subjects, personnel, study locations, new recruitment materials, study instruments, etc) must be prospectively reviewed and approved by the IRB before they are implemented. You should report any unanticipated problems involving risks to the participants or others to the IRB Chair.

If you have any questions regarding the IRB's decision, please contact me.

Sincerely,

Ann L. Bianchi

Ann L. Bianchi
IRB Chair
Associate Professor, College of Nursing

Appendix E

Demographics

Section I: Demographic Information: Please circle the appropriate answer. Choose only one answer for each statement.

1. Gender:

1) Male 2). Female

2. Age:

1)18-29 2) 30-39 3)40-49 4)50-59 5)60-69 6) greater than 69

3. Marital Status:

1) Never Married 2) Married 3) Separated 4) Divorced 5) Widowed

4. I have been a First Responder for how many years:

1) 0-3years 2) 4-6years 3)6-10 years 4) 11-15 years 5) 16-20 years 6) more than 20 years

5. Are a certified volunteer firefighter (have you been through the Volunteer Firefighter Academy)

1) yes 2) no

6. Are you a certified emergency medical responder (have you been through the EMR class)

1) yes 2) no

7. Is your full-time job related to the medical profession?

1) yes 2) no

Appendix F

DNP Project pre- and post-test survey

SECONDARY TRAUMATIC STRESS SCALE

The following is a list of statements made by persons who have been impacted by their work with traumatized clients. Read each statement then indicate how frequently the statement was true for you since volunteering on the fire department by circling the corresponding number next to the statement. NOTE: "Client" is used to indicate persons with whom you have been engaged in a helping relationship. THE WORDING WAS CHANGED FOR THE POST SURVEY TO READ: WAS TRUE FOR YOU SINCE THE IMPLEMENTATION OF THE FIRST AID PROTOCOL.

	Never	Rarely	Occasionally	Often	Very Often
1. I felt emotionally numb.....	1	2	3	4	5
2. My heart started pounding when I thought about my work with clients.....	1	2	3	4	5
3. It seemed as if I was reliving the trauma(s) experienced by my client(s).....	1	2	3	4	5
4. I had trouble sleeping.....	1	2	3	4	5
5. I felt discouraged about the future.....	1	2	3	4	5
6. Reminders of my work with clients upset me.....	1	2	3	4	5
7. I had little interest in being around others.....	1	2	3	4	5
8. I felt jumpy.....	1	2	3	4	5
9. I was less active than usual.....	1	2	3	4	5
10. I thought about my work with clients when I didn't intend to.....	1	2	3	4	5
11. I had trouble concentrating.....	1	2	3	4	5
12. I avoided people, places, or things that reminded me of my work with clients.....	1	2	3	4	5
13. I had disturbing dreams about my work with clients.....	1	2	3	4	5

14. I wanted to avoid working with some clients.....	1	2	3	4	5
15. I was easily annoyed.....	1	2	3	4	5
16. I expected something bad to happen.....	1	2	3	4	5
17. I noticed gaps in my memory about client sessions.....	1	2	3	4	5

Intrusion Subscale (add items 2, 3, 6, 10, 13) Intrusion Score _____ Avoidance Subscale (add items 1, 5, 7, 9, 12, 14, 17) Avoidance Score _____ Arousal Subscale (add items 4, 8, 11, 15, 16) Arousal Score _____ TOTAL (add Intrusion, Arousal, and Avoidance Scores) Total Score _____

Appendix G

Psychological First Aid Protocol for Coping with a Traumatic Event

Purpose: To ensure a stress prevention and management plan for the volunteer first responders. To implement steps for the volunteer first responders before, during, and after a traumatic event.

Preventative:

1. Know what your role would be during a fire call and EMR call.
2. Educate your family about your role in the department. Help them keep their expectations realistic on the amount of time you will be away from home.
3. Attend department meeting to keep up to date on new equipment
4. Train with the department to reinforce situational readiness in the use of equipment and techniques.
5. Become certified in firefighting and emergency medical responding
6. Be familiar with communities and roadways within your fire district
7. Maintain personal protective equipment.
8. Maintain equipment on trucks
9. Maintain a healthy diet, adequate exercise, and sleep
10. Be aware of the stress a particular team member may have and assess whether they can deal with the additional stress of the response

During a Response:

1. Limit your time working the scene alone
2. Take breaks at the scene
3. Recognize your level of expertise

4. Be mindful of signs of secondary traumatic stress: Excessively worried about something bad happening, being easily startled, heart racing, feeling the client's trauma is your trauma

5. Recognize your limitations

6. Have a buddy system. Keep an eye on your buddy.

After the Response:

1. Know it is ok to have boundaries and say, "NO."

2. Avoid caffeine and alcohol

3. Practice breathing and relaxation techniques

4. Talk to your team about the experience and your feelings

5. Write in a journal

6. Assure that you and your buddy have an open line of communication and it is "safe" to talk about feelings

7. Set up a time for debriefing with the department weekly

8. Allow time during meetings to share experiences and feelings. Acknowledge tough situations and recognize accomplishments. Always listen.

9. Acknowledge when the stress is becoming a mental health problem and ask for professional help.

10. Acknowledge your team members on a job well done.

11. Resolve any conflicts between team members which occurred

12. Keep in contact with team members by phone or text to assess their wellbeing.

References

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC:

Barker, P. (2001). The tidal model: the lived-experience in person-centered mental health nursing care. *Nursing Philosophy, 2*(3), 213-223. doi:10.1046/j.1466-769X.2000.00062.x

Barker, P., & Buchanan-Barker, P. (2012). Tidal Model of Mental Health Nursing. Retrieved from Nursing Theories: A companion to nursing theories and models website: http://www.currentnursing.com/nursing_theory/Tidal_Model.html

Brazil, A. (2017) Exploring Critical Incidents and Postexposure Management in a Volunteer Fire Service. *Journal of Aggression, Maltreatment, and Trauma*, 26:3, 244-257, doi. 10.1080/10926771.2016.1264529

Bride, B. E., Robinson, M. M., Yegidis, B., & Figley, C. R. (2004). Development and Validation of the Secondary Traumatic Stress Scale. *Research on Social Work Practice*, *14*(1), 27–35. https://doi.org/10.1177/1049731503254106

Brookes, N. (2017). The Tidal Model of Mental Health Recovery. In Nurse Key: Fastest Nurse Insight Engine. Retrieved from: https://nursekey.com/32-the-tidal-model-of-mental-health-recovery/.

Brookes, N., Murata, L., & Tansey, M. (2008). Tidal waves: Implementing a new model of mental health recovery and reclamation. *Canadian Nurse, 104*(8), 22-27.

Bryant, R. A. (1999). The Acute Stress Disorder Scale: A Tool for Predicting Post-traumatic Stress Disorder. *Australian Journal of Emergency Management, Winter* 13-15.

Buchanan-Barker, P., & Barker, P. J. (2008). The Tidal Commitments: extending the value base of mental health recovery. *Journal of Psychiatric and Mental Health Nursing, 15*(2), 93-100. doi:10.1111/j.1365-2850.2007.01209.x

Carlson, E. B. D., C.J. (2000). A conceptual framework for the impact of traumatic experiences. *Trauma, Violence, and Abuse, 1*(1), 4-28. doi:10.1177/1524838000001001002

Edmondson, D., Mills, M. A., & Park, C. L. (2010). Factor structure of the acute stress disorder scale in a sample of hurricane Katrina evacuees. *Psychological Assessment, 22*(2), 269-278. doi:http://dx.doi.org.ezproxy3.lhl.uab.edu/10.1037/a0018506

Elwood, L. S., Mott, J., Lohr, J. M., & Galovski, T. E. (2011). Secondary trauma symptoms in clinicians: A critical review of the construct, specificity, and implications for trauma-focused treatment. *Clinical Psychology Review, 31*(1), 25-36. doi:https://doi.org/10.1016/j.cpr.2010.09.004

Federal Communication Commission. (2010). First responders. Retrieved from: https://www.fcc.gov/first-responders

Heyman, M., Dill, J., & Douglas, R. (2018, April). Ruderman White Paper: Mental Health and Suicide of First Responders: Retrieved from: http://issuses. Com/rudermanfoundation/docs/first_responder_white_paper_final_ac270d530f8bfb

IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp

Khan, K., Charters, J., Graham, T. L., Nasriani, H. R., Ndlovu, S., & Mai, J. (2018). A Case Study of the Effects of Posttraumatic Stress Disorder on Operational Fire Service

Personnel Within the Lancashire Fire and Rescue Service. *Safe Health Work, 9*(3), 277-289. doi:10.1016/j.shaw.2017.11.002

McEvoy, M. (2005). Psychological First Aid: Replacement for Critical Incident Stress Debriefing? *Fire Engineering, 158*(12), 63-66.

Milen, D. (2009). The Ability of Firefighting Personnel to Cope with Stress. *Journal of Social Change, 3*, 38-56.

Milligan-Saville, J., Choi, I., Deady, M., Scott, P., Tan, L., Calvo, R. A., . . . Harvey, S. B. (2018). The impact of trauma exposure on the development of PTSD and psychological distress in a volunteer fire service. *Psychiatry Research, 270*, 1110-1115. doi:10.1016/j.psychres.2018.06.058

Molnar, B. E., Sprang, G., Killian, K. D., Gottfried, R., Emery, V., & Bride, B. E. (2017). Advancing Science and Practice for Vicarious Traumatization/Secondary Traumatic Stress: A Research Agenda. *Traumatology, 23*(2), 129-142. doi:10.1037/trm0000122

Moran, C. (2001). Personal predictions of stress and stress reactions in firefighter recruits. *Disaster Prevention and Management; Bradford, 10*(5), 356-365. doi:DOI: 10.1108/09653560110411611

Nash, W. P., & Watson, P. J. (2012). Review of VA/DOD Clinical Practice Guideline on the management of acute stress and interventions to prevent posttraumatic stress disorder. *Journal of Rehabilitation Research & Development, 49*, 637+.

National Fire Protection Association. (2016). Retrieved from: https:www.nfpa.org

National Volunteer Fire Council. (2017). Retrieved from https://www.nvfc.org/wp-content/uploads/2016/02/NVFC-Fact-Sheet-2017.pdf

Pao, C. T., J. (2017, March 28). Firefighters and trauma: Addressing post-traumatic stress disorder in the fire service. *Fire Rescue*.

Petiprin, A. (2016). Nursing Theory. *Tidal Model.* Retrieved from http://nursing-theory.org/theories-and-models/barker-tidal-model-of-mental-health-recovery.php

Stanley, I. H., Boffa, J., Hom, M., Kimbrel, N., & Joiner (2016). Differences in psychiatric symptoms and barriers to mental health care between volunteer and career firefighters. *Psychiatry Research, 247, 236-242.*

Ting, L., Frey, J., Sanders, S., Bride, B., & Harrington, D. (2005). The Secondary Traumatic Stress Scale (STSS). *Journal of Human Behavior in the Social Environment. 11.* 177-194. doi:10.1300/J137v11n03_09.

U.S. Fire Administration. (2008, March). *Emerging health and safety issues in the volunteer fire service FA-31.* Retrieved from: https://www.usfa.fema.gov/downloads/pdf/publications/fa_317.pdf

Venteicher, W. (2017, May). Increasing suicide rates amount, first responders spark concern. *Fire Rescue 1 News.* Retrieved from: https://www.ems1.com/fire-ems/articles/222672048-Increasing-suicide-rates-among-first-responders-spark-concern/

Wilmoth, J. (2014, May). Trouble in Mind. *National Protection Fire Association.* Retrieved from: https://www.nfpa.org/news-and-research/publications/nfpa-journal/2014/may-june-2014/features/special-report-firefighter-behavioral-health

Wilson, H. (2017, December 19). The next few weeks are gonna suck: Acute stress disorder in firefighters. *National Volunteer Fire Council*