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U.S. Public Health Service Nurse Officers Working in Disaster Settings

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This is to certify that the doctoral dissertation by

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Walden University
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Abstract

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MS, Walden University, 2013

BS, Coppin States University, 2010

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The National Response Plan (NRP) was developed to provide support during national disasters. The U.S. Public Health Service (USPHS) Corps is 1 of the 7 uniform services and contributes to the mission of the (NRP). The USPHS Commissioned Corps (CC) Officers may be deployed for national disasters at any time and they must be ready to deploy. The purpose of this phenomenological qualitative study was to explore the lived experiences of USPHS CC Nurse Officers who have deployed in response to disasters in the United States. This study addressed the gap in literature related to the deployment perception of USPHS Nurse Officers and may lead to an increase in deployment readiness. The lifeworld theory was used to guide the study that addressed the question of how nurse officers of the USPHS CC described their clinical nursing experience while deployed. Selection criteria used to recruit the 10 participants included USPHS Nurse Officers in non-clinical billets that have deployed in support of hurricane responses in 2017. In-depth interviews were conducted, and data were organized and analyzed using NVivo analysis software. The themes that emerged from the data included characteristics of nurse officers, clinical preparedness, training needs, challenges, and lessons learned. USPHS Nurse Officers perceived other nurse officers as resourceful, skillful educators, felt comfortable and prepared during the deployment, recommended additional training to benefit future Corps deployments, and identified physical and emotional challenges they experienced. These findings may assist in promoting positive social change within nursing practice of the USPHS Nurse Officers as it may enhance and improve readiness training, and USPHS policies for deployment readiness.

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Dedication

Growing up I never envisioned being where I am right now in my life. My mother Marie Nicole Saint-Amand who was also a nurse raised me to be kind and loving, which is what brought me to where I am today. Although she passed before I completed my dissertation, I know she is continuously providing guidance and support to me to continue to positively affect others and raise her only grandson Isaiah Taylor.

My son has been the driving force influencing my many goals in life. He has provided a reason to strive and excel. You have truly been "God's helper" as your name is defined. Many years, months, days, and hours have been taken away from spending time with you to progress in life, but we will soon make up for it.

To my many supporters that have followed my journey, I thank you. It is inspirational to hear that I have encouraged you to continue and excel in life. Being influential in creating positive change in someone else's life is rewarding. It is also a desire of mine that led me to the area of education.

Acknowledgments

First and foremost, I give all praises to my father up in heaven. Without you, none of this would have been possible. You have always been there for me. I would also like to thank my dissertation chair for leading the way and providing guidance and encouragement that brought me where I am today. Everyone has a choice in how much of themselves they will invest to help others in their journey in life. You have provided selfless consideration throughout this process.

I would also like to acknowledge Dr. Hussey. Since the day I met you, you have been like a bright light to me in this program. You have continuously supported me as well as many other students ensuring we maintain on track. Your actions and commitment to supporting students to succeed will forever be remembered as a reminder of my personal goal and commitment to future students.

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Chapter 1: Introduction to the Study

Introduction

Deployment readiness and disaster preparedness is an important training requirement for nurses who work in the U.S. Public Health Services (USPHS) (Gebbie, Hutton, Plummer, 2012; Li, Turale, Stone, Petrini, 2015; Shipman, Stanton, Tomlinson, Olivet, Graves, McKnight, Speck, 2016). Although studies of uniformed services that explored the phenomenon of deployment readiness are available, no studies reviewing the nursing competencies and perception of USPHS Commissioned Corps Nurse Officers were found. Using Army Nurse Corps Officers as participants, Agazio (2010) revealed that training provided in relation to the site where the deployment was performed provided for the most efficient preparedness training. Maureen et al. (2011) identified current programs mandated for Airforce medical technicians, nurses, and physicians to complete before being deployment. A study that included the perceptions of nurses in an array of settings provided the viewpoint of 1 USPHS Commissioned Corps Officer with experience working in multiple agencies/operating divisions (OPDIVs). The officer expressed the need for additional readiness training (Jacobson, 2011). Collectively, deployment readiness was identified as an important task.

Gebbie et al. (2012) stated that competencies should be maintained on a regular basis through practice. USPHS Commissioned Corps Nurse Officers may be assigned to positions that are not clinical. Rivers, Wertenberger, and Lindgren (2006) conducted a study that identified the differences in the competency of officers that use nursing skills

routinely versus officers who do not and found significant differences. Maintenance of clinical skills is a responsibility of the USPHS Commissioned Corps Officer and is measured by completion of 80 clinical hours annually for officers deploying in a clinical role (Readiness and Deployment Operations Group [RedDOG], 2018). The need for knowledge beyond a nurse's usual scope of practice may be required during a disaster response (Gebbie et al., 2012). Disaster training for nurses is important to prepare for future disasters. Current experiences and perceptions of USPHS Commissioned Corps Nurse Officers who have deployed to provide disaster support may be a valuable instrument to contribute to disaster training and for positive social change. The following chapter includes information regarding the background information on the phenomenon, problem statement, purpose of the study, the research question, the nature of the study, significant definitions, scope of delimitations, limitations, and the significance of the study.

Background

Although my intent in this study was to address the last 5 years of studies related to the phenomenon, I expanded the search across an increased time frame to obtain key elements related to deployment readiness. Since the late 1990s, deployment readiness within uniform services has been studied; however, I found only a limited number of articles that address the USPHS Commissioned Corps Officers and their deployment readiness.

In the late 1990s, researchers were focused on defining readiness within the uniformed services. Fowler (1998) conducted a study that viewed readiness in 2 aspects as an ability and willingness to complete a task. Both are needed to perform any task efficiently. This definition can also be used to assess the nurse officer's competency during deployment. Results obtained from the study by Reineck (1999) suggested that a definition of what is perceived as readiness must be identified to determine readiness. There were 6 areas of readiness components suggested as areas that must be reviewed when determining deployment readiness (Reineck, 1999). Those 6 areas include clinical nursing competency, operational competency, survival skills, personal/psychosocial/physical readiness, leadership and administrative support, and group integration and identification (Reineck, 1999). However, Dremsa, Resnick, Braun, Derogatis, Margaret, Turner, & Reinrck (2004) identified the concept of individual readiness as "dimensions at the individual, group, and system level which together, influences one's ability to prepare to accomplish the mission" (p. 11). This definition can be used to assess the individual perspective of deployment readiness. Collectively, these researchers asserted that readiness is a phenomenon that is important enough to study and sought to identify an effective way of exploring it. These studies did not identify USPHS Commissioned Corps Officers as participants but studied other federal nurses.

Although I did not find studies using USPHS Commission Corps Nurse Officers as participants, other branches have been studied to obtain the readiness perception of nurse officers. Both studies using Army and Airforce participants identified deployment

readiness as an important phenomenon that needed to be studied. Dremsa et al. (2004) used the Readiness Estimate and Deployability Index to obtain a self-assessment of 181 Air force Nurse Officers' perception of readiness during deployment. Wynd (2006) created the model for military disaster nursing to evaluate the effectiveness of deployment readiness. This may be used to evaluate the deployment readiness of nurse officers within the USPHS. Ross, Smith, Smith, Ryan, Webb, & Humphreys (2008) obtained results from an after-action report showing that military nurses had concerns about their deployment readiness and expressed the need to seek feedback from nurses who completed previous deployments. This shows the concern for readiness and the need to obtain experience and knowledge from nurses with previous deployment experience. Agazio (2010) conducted a study of Army Nurse Corps Offices to identify the challenges of providing care during military operations other than war (MOOTW). The authors identified the fact that nurses need knowledge and skillsets related to the population that they serve during the deployment to include older adults, women, children, and related to infectious disease, chronic conditions, starvation, and dehydration. Identifying specific training needs for USPHS Commissioned Corps Nurse Officers is an important aspect of training. Maureen et al. (2011) described the importance of deployment readiness and reviewed the effectiveness of the Center for Sustainment of Trauma and Readiness Skills program which was created for medical staff to obtain training before deployment. The mandating of this program before deployment has resulted in the decrease of bad outcomes during deployments (Maureen et al., 2011). The results of the study by

Maureen et al. validated the importance of deployment readiness and the effectiveness of pretraining mandated to provide deployment readiness. Skills training for medical personnel before deployment contributes to positive outcomes. Research related to readiness using soldiers and airmen as participants have been done in the past.

In addition, to previous studies regarding readiness, Baack and Alfred (2013) suggested previous experience in disaster preparedness as a factor that played a positive role in current disaster preparedness in nurses. Knowledge of previous experience in deployment roles of nurse officers is important information that may contribute to their nursing competency.

Due to the increase of occurrence of natural disasters, studies have been performed by organizations other than the uniform service to increase readiness of nurses (Baack & Alfred, 2013; Shipman et al., 2016; Veenema, Griffin, Gable, MacIntyre, Simons, Couig, & Larson, 2016; Wenji, Turale, Stone, & Petrini, 2015). Jacobson (2011) provided an overview of the current state of preparedness of nurses within the United States through interviewing nurses employed in a variety of practice settings and areas in nursing. Mixed perceptions of preparedness were identified, and further research studies were recommended to provide a larger perspective on the issue. Shipman et al. (2016) captured the importance of readiness training as it relates to new graduates. New graduate nurse officers entering the USPHS must receive continuous readiness training especially if training is not received in school. This must be obtained before deployment.

Although studies that represented nurses in other uniform services and organizations capturing perceptions of nurses and nurse officers were found, studies examining the perception of the representation of USPHS Commissioned Corps Nurse Officer's deployment readiness were not found. As one of the largest health professional disciplines contributing to deployments, the skill of a nurse is essential (Gebbie et al., 2012). Conducting this study may be a valuable tool in training and policies development in deployment readiness.

Problem Statement

On January 6, 2005, an update to the National Response Plan occurred providing direction on prevention, preparedness, recovery, and response during national disasters (Couig, Martinelli, & Lavin, 2005). The U.S. government has developed many different entities to protect the United States. The United States Army provides protection by land, the Airforce provides protection by air, and the Coast Guard provides protection in the sea. The USPHS is charged with protecting, promoting, and advancing the health and safety of the Nation ("Mission and Core Values," 2014). The USPHS Commissioned Corps is one of the 7 uniform services and has an important role in the response plan. Professionals employed by the USPHS include dentists, dieticians, engineers, environmental health officers, health services officers, nurses, pharmacists, physicians, scientists, therapists, and veterinarians (Careers and Benefits, 2014). USPHS Commissioned Corps Officers may be deployed at any time in their career, and they must

be ready to deploy. The USPHS officers respond to emergencies and must be ready to serve the needs of the citizens (Carmona, 2003).

USPHS Commissioned Corps Officers work daily for agencies/OPDIVs such as National Institute of Health (NIH), U.S. Department of Agriculture (USDA), Department of Defense (DoD), Department of Homeland Security (DHS), Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDC), and Center for Medicare and Medicaid Services (CMS). The daily duties of the officers may or may not include performing in a clinical role. Nurses contribute significantly to recovery in affected disasters areas (Baack & Alfred, 2013). Maintaining clinical skills for readiness of deployment is an important task for USPHS Commissioned Corps Officers. The RedDOG requires USPHS Commissioned Corps Officers deploying in a clinical role to complete 80 clinical hours per year in their deployment role as a preparedness tactic (RedDOG, n.d.). During the 2017 Commissioned Officers Association (COA) Symposium, the acting Surgeon General expressed the need for change to increase clinical readiness of USPHS Commissioned Corps Officers and identified future goals to address these needs. Agazio (2010) stated that nurses need an array of knowledge during humanitarian missions to care for patients with diseases they do not typically encounter. Nurses with experiences from disaster deployments may provide knowledge and recommendations for future disaster training (Shipman et al., 2016).

Gap in Current Research Literature

A review of the current research literature of other uniform services (U.S. Army and U.S. Airforce) and organizations were found displaying the deployment readiness perception of their organizations. An article was found to include the USPHS Commissioned Corps Nurse Officer's readiness perception but was only the perspective of the authors in the editorial Walsh, Orsega, and Banks (2006). Knowledge of the deployment readiness perception of the USPHS Commissioned Corps Nurse Officers could contribute to policies on deployment readiness, and deployment readiness training of USPHS Commissioned Corps Nurse Officers.

Purpose of the Study

My purpose in this phenomenological qualitative study was to explore the lived experiences of USPHS Commissioned Corps Nurse Officers who have deployed in support of disasters responses in the United States. This phenomenon is best evaluated through a qualitative research study to gain a specific view or interpretation of a specific group. It will allow the USPHS Commissioned Corps Nurse Officers the opportunity to share their experiences as a nurse during a disaster deployment. Interviews of nurse officers employed at 1 of the OPDIVs who have completed a deployment in support for Hurricanes Harvey, Irma, and Maria in the last year assisted in obtaining the most up-to-date data of the perception of postdeployment nurse officers. Information obtained related to the competencies of the USPHS Commissioned Corps Nurse Officers during deployment may assist in determining the need for modifications in current

predeployment training and policy development. Nursing competency was generally defined as the ability to perform the required nursing skills while deployed.

Research Question

The research question that I used to assist in guiding this study during the interview was:

How do nurse officers of the USPHS Commissioned Corps describe their clinical nursing experience while deployed?

Theoretical Framework for the Study

I performed this study using the lifeworld theory as a guide, a phenomenological research approach developed by Husserl (Linberg, Karlsson, Knutsson, 2016). This approach allows for openness and flexibility of the phenomenon to be studied. This is done through meeting people, talking to people, and listening to their narratives (Berndtsson, Claesson, Friberg, & Ohlen, 2007). The phenomenology study of inquiry allows for obtaining the lived experience of the participants and analysis through a reflective structure (Ravitch & Carl, 2016). Similar to the lifeworld theory, the research aforementioned question focuses on the experience of the particular participant. I include additional information outlining the lifeworld theory in Chapter 2.

Nature of the Study

The research design that I selected for this study is a phenomenological qualitative study. The phenomenological approach allows for obtaining the lived experience of the participants (Creswell, 2013; Yin, 2016). It also allows for quality

engagement with the participants allowing for the collection of their meaningful experiences for relationship and theme development (Creswell, 2013). The use of the Husserl's descriptive phenomenological approach allowed for the collection of data of the USPHS Commissioned Corps Nurse Officer's lived experiences while deployed during a disaster response.

I conducted the study by performing in-depth interviews of USPHS Commissioned Corps Nurse Officers assigned to OPDIVs throughout the United States. I selected participants for the study using snowball sampling as described by Shipman et al. (2016) to study the lived experiences of first-time nurse responders in disaster and by Wenji et al. (2015) to study Chinese nurses' relief experiences. Officers selected to participate in the study met the criteria listed as follows:

- Experience while being deployed as an officer in a non-clinical billet.
- Experience of nurses who deployed in a nursing role providing care to patients.
- Experience being deployed in the most recent USPHS Corps deployments in support for Hurricane Harvey, Irma, and Maria for at least 7 days.

I selected these criteria to account for officers that may benefit from predeployment disaster training. Officers that may be able to contribute to the experience of using their clinical skills to provide clinical care to communities were included in the study. Also, officers with recent disaster Corps deployment experience that can recall their experiences were included.

I conducted the interviews using freeconferencecall.com. I then obtained transcription of the interviews using Rev.com. Using a transcription service allows for quicker access to the data as well as allows for an additional interpretation of the data obtained (Rubin & Rubin, 2012). Once the transcript was obtained, I manually reviewed them through listening to the recording, allowing for connection with the information. I then imported the data into the NVivo Qualitative Data Analysis (QDA) program. I performed coding of the data manually, and a qualitative research expert and colleague reviewed the codes identified. I then identified the commonalities and patterns leading the themes within the data.

Definitions

Corps deployments: A directed, temporary assignment of officers from their assigned duties within the HHS OPDIVs/STAFFDIVs and non-HHS organizations, as authorized by the President or Secretary in response during a time of war or response to:

1. National emergency as declared by the president.
2. A public health emergency as declared by the President or Secretary;
3. An urgent public health need:
    i. A critical staffing shortage of health care/public health personnel within a facility or program administered by an OPDIV/STAFFDIV or non-HHS organization that threatens the health and safety of the affected population.

ii. A crisis response is a situation presenting a significant threat to the public health of a State, Tribe, or local community, and available resources are inadequate to respond.

iii. A National Special Security Event declared by the Secretary of Homeland Security, is of national significance, requires special security, and is coordinated at the national response level (Leavitt, 2007).

Disaster: Natural or humanmade (Mace, Jones, & Bern, 2007).

Humanmade disaster: Includes transportation accidents (plane crash, railroad derailment, sinking of large passenger ship), fires, environmental toxins, civil unrest, and acts of terrorism. (Mace, Jones, & Bern, 2007).

Natural disaster: Disaster due to "an act of God" and includes floods, hurricanes, earthquakes, tornados, ice storms, and snowstorms (Mace, Jones, & Bern, 2007).

Perceived competence: The feeling that one can accomplish the behaviors and reach a goal. (Baack & Alfred, 2013)

Readiness: Dimensions at the individual, group, and system level which together, influences one's ability to prepare to accomplish the mission" (Dremsa et al., 2004, p. 11).

Nursing competency: As defined by the National Council of State Board of Nursing's (NCSBN) for the National Simulation Study as " the ability to observe and gather information, recognize deviations from expected patterns, prioritize data, make sense of data, maintain a professional response demeanor, provide clear communication,

execute effective interventions, perform nursing skills correctly, evaluate nursing interventions, and self-reflect for performance improvement within a culture of safety" (Bowling et al., 2017, p. 27).

Assumptions

1. Participants were willing to share their Corps deployment experience elicited by the open-ended questions.

2. Participants were able to recall their disaster Corps deployment experience.

Scope and Delimitations

In this study, I included a small sample of nurse officers assigned to a number of OPDIVs. According to Rudestam and Newton (2015), phenomenological studies have a sample size of 10 or fewer. A qualitative study may have small sample sizes because they focus more on gaining the most information versus the number of participants (Rudestam and Newton, 2015). This allowed for analyzing the data collected to identify themes.

Delimitation can occur from the inclusion and exclusion choices made by the researcher (Simon & Goes, 2013). The selection of the qualitative method over quantitative method can be identified as a delimitation. The quantitative method is usually used when seeking the representation of a large population (Yin, 2016). Creswell and Creswell (2018) stated that a researcher must have variables identified to conduct a quantitative study. Due to a lack of studies including the selected population exploring this phenomenon, current variables could not be identified. Completion of this study identifies variables for future quantitative studies providing representation for a larger

population of nurse officers in the USPHS Commissioned Corps. More than 1,600 nurse officers are in the USPHS Commissioned Corps. USPHS Commissioned Corps Officers may be assigned to 13 Health and Human Service offices and agencies and over 11 non-Health and Human Service agencies. The inclusion of a small pool of Nurse Officers assigned to some of these offices and agencies were represented in the study. I took this approach to increase the feasibility of data collection.

Also, this study only represented USPHS Commissioned Corps Nurse Officers and their experiences while deployed. Other officer categories within the USPHS or other officers in other branches of the uniform service were not represented in this study. The delimitations were based on inclusion and exclusion choices made.

Limitations

I identified a few limitations in the study. I did not account for the number of times each nurse officer had deployed in the past in support for a hurricane or other disaster responses. Nurse officers that have deployed several times or held informative roles while deployed had a different lived experience than the nurse officers who reported that they had little to no Corps deployment history. In addition to the number of past Corps deployments, the length of time since their last Corps deployment served as a limitation to the study. A few of the participants reported difficulty in recalling some of their experience while deployed. Interviews were done approximately 1 year from the deployment experience. Also, nurse officers who have additional nursing positions outside of their USPHS Commissioned Corps position showed to have been better

prepared for the Corps deployment which lead to a better Corps deployment experience. There were 2 participants who reported having additional positions outside of their current USPHS assignment. Another limitation was the use of the snowball method to obtain participants. Fifty percent of the individuals that were referred were from 1 specific OPDIV. The inclusion of officers from a mixture of OPDIVs would have provided for a more diverse population and perspective. Also, the use of the qualitative method served as a limitation due to the recommended number of participants of 10. The limited number of participants did not allow for a broad representation and experience of USPHS Nurse Officers. Participant's previous and current experiences, deployment history, difficulty in the recall of the experience, sampling and research method used served as limitations to the study.

Significance

The completion of this study will help to reduce the gap in literature of USPHS Commissioned Corps Nurse Officers and may assist USPHS Corps deployment training staff in changing the current culture through identifying necessary changes in current processes, improve current policies, procedures, and create standardized Corps deployment readiness training. The change in culture may then contribute to positive social change within USPHS Commissioned Corps Officers and their future patients. Moreover, this change may further positively affect the training provided to the USPHS Commissioned Corps Nurse Officers and possibly increase their confidence in their clinical nursing competencies. The care of the patient population which the officers will

be serving during deployment may positively be affected by the increased competency of the nurse officers. This may decrease the number of required days necessary for patient care, which will allow for fewer deployment days for USPHS Commissioned Corps Officers as well as a decrease in funds necessary to carry on the mission of the deployment. Fewer deployment days for USPHS Commissioned Corps Officers contribute to less time away from an officer's family. Collectively, these changes will contribute to positive social change by providing an improvement in human and social conditions as defined by Walden University (2018).

Summary

In this chapter, I provided the background information on the current studies available related to the phenomenon and identified the gap in literature along with similar studies conducted by other organizations. In the problem statement, I reviewed the mission of the USPHS and their importance in deployment, specifically the nurse officers. The readiness of nurses during deployment has been identified as a phenomenon to be reviewed to ensure preparedness for future disaster deployments. My purpose in this study was to gain the lived experience of nurse officers in the USPHS Commissioned Corps through a qualitative phenomenological research approach. This allowed for the gathering of data and identifying common themes within this data. The research question assisted in guiding the study. The nature of the study, significant definitions, the scope of delimitations, and limitations are identified. Delimitations and limitation were related to the sample size and inclusion and exclusion criteria of the study. Limitations also

included the past and current nursing education and use of qualitative method. The significance of the study has the potential to affect the nurse officers themselves as well as the patients that they will provide care to. Also, the study may positively change policy and training within the USPHS Commissioned Corps.

In Chapter 2, I will provide more information regarding the current studies available related to the lived experience of nurse officers. A synthesis is provided of studies that are aligned with the problem statement noted previously. Identification of current studies and the methods used along with the participants and type of sampling used to gain the participants are also included. I will use the peer-reviewed articles to address the history of the phenomena.

Chapter 2: Literature Review

Introduction

From Ebola to Zika to Hurricanes Harvey, Irma, and Maria, the USPHS Officers have been tasked to battle an array of public health crises. National and public health needs are ever changing, and the need for preparedness is crucial. During the 2017 COA Symposium, the acting surgeon general expressed the need for change to increase clinical readiness of USPHS Commissioned Corps Officers and identified future goals to address these needs. Agazio (2010) stated that nurses need an array of knowledge during humanitarian missions to care for patients with diseases they do not typically encounter. Experienced nurses may provide knowledge and recommendations for future disaster training (Shipman et al., 2016). The deployment readiness perception of the USPHS Commissioned Corps Nurse Officers is a perception that was warranted to assist in improving Corps deployment training and policies. My purpose in this phenomenological qualitative study was to explore the lived experiences of USPHS Commissioned Corps Nurse Officers who have deployed to disasters in the United States. This phenomenon is best evaluated through a qualitative research study to gain a specific view or interpretation of a specific group. It allowed the USPHS Commissioned Corps Nurse Officers to share their experiences as a nurse during a disaster Corps deployment in hopes to contribute to the preparedness for future national disasters. In this section, I will cover the literature search strategy, theoretical foundation, and the literature review that guided the study.

Literature Search Strategies

I performed a review of literature to search for peer-reviewed articles related to the readiness of Commissioned Corps Officers in the USPHS. Initially I performed a search to include articles within the last 5 years; however, due to low numbers of relevant articles, I broadened the search to include studies within the last 15 years. I took consideration for studies done within and outside the United States. Databases that I searched were CINAHL, MEDLINE, EBSCO, PROQUEST, and Google Scholar. I used each database to search a number of terms to include *USPHS Commissioned Corps* and *Disaster*, *PHS* and *Disaster*, *US Public Health Service*, *Commissioned Corps* and *Training*, *CC* and *disaster*, *Commissioned Corps* and *training*, *Public Health Service* and *training*, *Public Health Service* and *deployment*, *Commissioned Corps* and *deployment*, *CC* and *deployment*, *PHS* and *deployment*, *Commissioned Corps* and *preparedness*, *Commissioned Corps* and *deployment readiness*, *Commissioned Corps nurse perception*.

Due to the lack of current research related specifically to the USPHS Commissioned Corps, I performed a search specific to other related organizations using the same search engines. Key terms that I used were *NDMS*, *National Disaster Medical System*, *DMAT*, *Disaster Medical Assistance Team* and *military readiness*. I also reviewed previously cited and related articles of studies found.

Theoretical Foundation

This study was a descriptive phenomenology study that I conducted using the lens of the lifeworld theory, a phenomenological research approach developed by Edmund

Husserl (Linberg et al., 2016). This approach allows for openness and flexibility of the phenomenon to be studied. This is done through meeting people, talking to people, and listening to their narratives (Berndtsson et al., 2007). It provides the perceived understanding of the experience from the individual's point of view which the researcher may not have experienced (Reiners, 2012). The phenomenology study of inquiry allows for obtaining the lived experience of the participants and analysis through a reflective structure (Ravitch & Carl, 2016).

Husserl claimed that phenomenology was best understood through an individual's experiences, which included their perception, thought, memory, imagination, and emotion, which the author called *intentionality* (Reiners, 2012). The descriptive phenomenology also came about this belief adding that bracketing a researcher's opinions was warranted to prevent bias of the researcher in the study (Reiners, 2012). Martin Heidegger, a student of Husserl, thought otherwise and developed interpretation phenomenology which expanded hermeneutics and rejected bracketing (Reiners, 2012). To prevent my own preconceived opinions of the phenomena from effecting the study, I use of Husserl's descriptive phenomenology to guide this study.

There were other theories that I considered using before selecting the lifeworld theory. I reviewed similar studies to determine the best theory to guide this study. Wenji et al., (2015) conducted a similar study exploring the lived experiences of individuals who participated in disasters used the social-culture theory to guide their research. This theory focuses on learning through social processes and the intelligence of humans

(McLead, 2014). Although I sought to examine a similar phenomenon, I explored how their understanding of an event was related to engaging with other individuals. I did not focus solely on the interactions of individuals but focused on exploring the lived experiences of the participants during disasters and their understanding of those experiences. Therefore, I did not select the social-cultural theory for this current study. Khankeh, Khorasani-Zavareh, Johanson, Mohammadi, Ahmadi, & Mohammadi (2011) conducted a qualitative study to obtain the lived experiences of individuals who responded to a disaster in Iran. The grounded theory was used to guide the study. Grounded theory attempts to develop a theory that comes from data or the field (Ravitch & Carl 2016). The goal of the current study does not include theory development. Linderberg, et al. (2017) conducted a study using the phenomenological approach to describe the experience of individuals learning about caring science who participated in a reflective seminar. The lifeworld theory was used to guide the study. The lifeworld theory assists in exploring how a participant perceives their understanding of the experience (Reiner, 2012). I conducted the current study to explore the perceived understanding of the USPHS Nurse Officers' experience during Corps deployment. Therefore, the life world theory was the best theory for this study.

Current Literature

Deployment readiness within an array of public health professionals has been studied to develop methods to improve and advance deployment readiness. In 2009, Agazio (2010) conducted a research study to identify challenges within Army nurses

during humanitarian missions. Khankeh et al. (2011) studied the perception of multidisciplinary disaster teams who responded to an earthquake in Iran. In 2013, Baack completed a research study to determine the preparedness of American nurses. While Li et al. (2015) and Wenji et al. (2015) conducted a study utilizing Chinese registered nurses. Shipman et al. (2016) used first-time nurse responders in his study. Veenema et al. (2016) focused on nurses, emergency mangers and public health professionals. In addition, Gebbie et al. (2012) completed an annual review of nursing research related to competencies and education. Collectively, all these studies identified concerns in disaster training and education as a common finding. Although these studies include an array of nurses, no studies were found that were specific to the disaster training and education of USPHS Commissioned Corps Nurse Officers.

Challenges during Corps deployments of USPHS Commissioned Corps Officers was a common topic discussed. Some challenges that were identified were in relation to the conditions during the Corps deployment (Debisette, Brown, & Chamberlain, 2006), Lack of organization in patient care areas, patient flow, creating chain of command, identifying providers, and lack of diagnostic services, equipment medications and supplies (Connelly, 2006), language barrier, culture difference, religious beliefs and practices, and educational and public health understanding (Brown-Stephenson, 2017), and establishing medical protocols so that we truly provided a high level of care, to securing the chain of vital medical supplies and personal protective equipment through DoD, to assuring that our teams were housed, fed, safe, and secure (Lushniak, 2015).

However, 1 study was found to identify lessons learned specific to preparedness and training (Walsh et al., 2006). Disaster training and deployment experience, medical expertise suitable to the patient population, ability to anticipate medical and infrastructural needs in rapidly changing environment were items identified as lessons learned (Walsh et al., 2006).

There are different types of qualitative inquires that can be used when performing a qualitative study. The studies conducted by Wenji et al. (2015) and Shipman et al. (2016) were both qualitative, and both used a narrative inquiry. Shipman et al. (2016) used the phenomenological approach to analyze the data obtained. The narrative inquire uses the views of the participants as well as the researcher to develop the results of the study (Creswell & Creswell, 2018). The use of the phenomenological approach uses bracketing to remove the researcher's perception and prevent bias (Beech, 1999). This allows for focusing on developing the meaning of the participant's perception of the experience. I used the phenomenological approach to study the lived experience of Nurse Officers in the USPHS.

Summary

A few studies regarding general USPHS information were found that spoke highly regarding the current deployment training received by USPHS Commissioned Corps Nurse Officers (Couig et al., 2005; Haider, 2013; Mosquera, Braun, & Hulett, 2015). However, 1 article was found that included the perspective of 1 USPHS Commissioned Corps Nurse Officer opposing these claims (Jacobson, 2011). Initial

studies related to the phenomenon identify the meaning of deployment readiness and areas to include to evaluate deployment readiness. Although, no current studies have explored the readiness perception of USPHS Nurse Officers. Additional studies must be done to obtain information about the perspectives and experiences of USPHS Commissioned Corps Nurse Officers during Corps deployments.

Chapter 3: Research Method

Introduction

My purpose in this phenomenological qualitative study was to explore the lived experiences of USPHS Commissioned Corps Nurse Officers who have deployed to disasters in the United States. Exploring these lived experiences may assist in developing policy and producing a change in practice. In this chapter, I will discuss the research design and rationale, the role of the researcher, methodology, and issues of Trustworthiness.

Research Design and Rationale

My research question for the study was: "How do nurse officers of the USPHS Commissioned Corps describe their clinical nursing experience while deployed?" The deployment readiness perception of the USPHS Commissioned Corps Nurse Officers is a perception that must be examined to advance predeployment training and policies. This phenomenon is best explored using a qualitative phenomenological research approach. Although no current studies were done using USPHS Commissioned Corps Nurse Officers to explore the phenomena, previous studies conducted using nurses from other branches of service (Army and Airforce) and nursing personnel in the civilian sector have been done. In these studies, both the quantitative and qualitative research approach has been used to guide the studies.

The quantitative research method was used in the studies conducted by Baack, 2013; Rivers et al. 2006; and Rassin, 2007 to gain the readiness perception of the

participants in the study. According to Creswell and Creswell (2018), in a quantitative study, the research must know the factors that influence the outcome and can predict the outcome (variables). Due to the lack of current studies that are specific to USPHS Nurse Officers, the factors and predictors of the outcome of the study are unknown. The use of the quantitative study would be appropriate if variables were known to determine their relationships (Creswell & Creswell, 2018).

The qualitative research method has been used in studies by Agazio (2009); Goodhue (2010); Wenji et al. (2015); Li et al. (2015); and Shipman et al. (2016) to explore the phenomena. Creswell and Creswell (2018) stated the qualitative method is best used when minimal studies have been done on the phenomena, and the phenomena include a specific population. These indicators are both true for the current study. Qualitative research understands reality to be ever-changing (Cooper & White, 2012). It allows for uncovering of the experience of the participant and the meaning of the experience (Worthington, 2010). Obtaining the experience of the USPHS Nurse Officers and its meaning has added to research related to this specific group and it also provides an update of research related to the phenomena.

Role of the Researcher

In this research study, I served as the researcher and interviewer collecting the data for the study. Creswell and Creswell (2018) stated that the researcher must take into account the "participant's meaning" of the current phenomenon being researched not their own. As a current USPHS Commissioned Corps Nurse Officer, I exercised the use of

bracketing to prevent my own meanings and interpretations of the data from affecting the results of the study. However, I identified other potential ethical issues that may occur during data collection. At least 1 of the participants was a colleague but not under my supervision. I made every effort to prevent a conflict of interest between my beliefs and feelings about the phenomenal of interest and the participant's beliefs and feelings. Yin (2016) recommended that self-awareness be acknowledged to prevent bias (Yin, 2016). My current experience and views of the phenomena are limited because I have never participated in a Corps deployment that required me to provide care for individuals during a response to a natural disaster. This will prevent the projection of my own personal experiences into the study. Although, my experience as a USPHS Commissioned Corps Officer will assist in incorporating and explaining the current processes in place for deployment readiness.

Researchers must be culturally competent of the background of the participants (Bromley, Mikesell, Jones, & Khodyakov, 2015). This will prevent offensive questioning of the participants. In addition to being culturally competent, Bromley et al. (2015) stated that researchers must be knowledgeable in the Belmont recommendations and the federal government standards, which are the standards for ethical challenges within research.

Other actions I did to prevent ethical issues during the study included obtaining informed consent, ensuring confidentiality, and providing information regarding the study. Informed consent is a transaction between the researcher and participant that plays an ethical role in research (Ravitch & Carl, 2016). I informed participants on the purpose

of the study. I also kept the participants' identity confidential to eliminate any ethical concerns or risk to the participants. I assigned each participant a unique identifier number instead of their name being written down on documents to prevent discloser of the data obtained and to increase confidentiality.

Methodology

The methodology used in a research study provides the planned procedures that will be used to guide the research study (Creswell & Creswell, 2018). This can later be used by other researchers that desire to complete a similar study. This section on methodology will include the participant selection logic, instrumentation, procedures for recruitment, participation, data collection, and data analysis.

Participants Selection Logic

Participants that were invited to be a part of the study were assigned to 1 of the OPDIVs. I obtained an initial participant that met the inclusion criteria from contact information provided during a deployment review presentation led by nurse officers who had deployed during the 2017 hurricane season. This presentation was done in Dallas Texas at the 2018 Commissioned Corps Officers Foundation Symposium on June 5, 2018. Registration was available online to the public. Many of the audience identified themselves as officers that were deployed along with the presenters during recognition for their contribution. The initial participant provided email addresses and names of additional individuals that may have met the criteria for the study or assisted in obtaining participants that met the criteria to be invited to participate in the study. Invitations were

emailed to the initial participant as well as the individuals that were referred. The email included the inclusion criteria to ensure only potential participants who meet the criteria responded. Participants who met the inclusion criteria of being a USPHS Commissioned Corps Nurse in a non-clinical assignment, in a nurse deployment role, and have participated and provided care during the most recent Corps deployment in support for Hurricanes Harvey, Irma, and/or Maria for at least 7 days were included in the study. The use of officers who have recently completed a Corps deployment assisted in obtaining the most up to date data. The contact information of USPHS agency liaisons were obtained to elicit additional participants to interview that met the criteria above. According to Rudestam and Newton (2015), phenomenological studies have a sample size of 10 or less. Although, participants were obtained until data saturation was reached through no introduction of new data.

I used the snowball sampling along with professional networking to recruit the participants of the study as was used in Shipman et al. (2016) to study the lived experiences of first-time nurse responders in a disaster. The snowball recruitment method allowed for the identification of participants that meet the set criteria of the study. Because Corps deployment list are kept confidential, participants that meet the set criteria may be otherwise difficult to reach. Using the snowball method for recruitment assisted in identifying and recruiting this difficult population (Sadler, Lee, Lim, & Fullerton, 2010).

Instrument

The use of semistructured in-depth qualitative interviews served as the data collection instrument for the study. This type of interview allows for open-ended questions about a specific topic along with follow-up questions as needed (Rubin & Rubin, 2012). I created interview questions using information from the previous literature and the research question of this study. The validity of qualitative research studies is established through meeting the goals of the study of answering the research question (Leung, 2015).

To allow for the inclusion of participants located throughout the United States, the interviews were done using FreeConferenceCall.com. The use of FreeConferenceCall.com allowed for recording, but not viewing of the participant. It also allowed for easy access to transcribe the interview recordings. This mechanism was helpful in reaching participants outside of my immediate location. The data collection method also allowed for ease of reviewing the data after the interview.

Before interviewing the participants, they were informed of what to expect during the interview so that they were not caught off guard. This also assisted in building rapport. It also allowed for the participants to reflect on their experience prior to providing their input for the requesting data. I asked all participants the same open-ended interview questions which I had developed. The use of close-ended questions would limit the scope of experience and perception of the participant's experience. The answers to the questions asked assisted in evaluating the commonalities and differences in the

experiences of the participants. I reached data saturation when no additional/new information was obtained from the participants.

Procedures for Recruitment, Participation, and Data Collection

I used specific procedures to obtain the data from the participants of the study. I performed all the interviews through FreeConferenceCall.com allowing me to record the interviews. Using this mechanism to perform the interviews also offered easy access to the participants that may not live in the same vicinity as I. This allowed for expediting interviews, as travel for the next participant interview is not necessary (Ravitch & Carl, 2016). Similar past studies found did not mention specifics of how the interviews were obtained (Wenji et al., 2015; Shipman et al., 2016), while another study used series of semi-structured conference calls (Veenema et al., 2015). The average length of the interviews were 43 minutes, and interviews only occurred once. Participants were contacted after the interviews were completed as an attempt to debrief to allow for participants to ask questions. I provided each participant with the transcription of the interview to ensure the information obtained was accurate. Initial recruitment measures resulted in too few participants with the use of the recommendation from the initial participant. I then contacted USPHS agency liaisons to obtain contact information for additional USPHS Commissioned Corps Nurse Officers to participate. Their contact information was available through the Commissioned Corps Management Information System (CCMIS). Data analysis was the next step in the process.

Data Analysis

Once data from the interviews were obtained from the participants of the study, I used Rev.com to transcribe the interviews. I then reviewed the transcribed interviews to ensure the transcription was accurate. This created a connection to the data obtained. I then began analyzing the data searching for commonalities and themes related to the research question. To complete this analysis, the NVivo QDA program was used to assist in organizing and coding the information. Coding allows for identifying relationships and the meaning of the data (Ravitch & Carl, 2016). Coding allowed for the identification of the commonalities and patterns and repetitions, which was used to identify themes within the data. An experienced doctoral prepared colleague reviewed the codes identified for validation. Creswell and Creswell (2018) stated cross-checking coding might assist with showing the reliability of the data. This also assisted in identifying and resolving discrepancies in the data. Online programs and experienced researchers contributed to the validation of the data analysis outcome.

Issues of Trustworthiness

To ensure the credibility and validity of the study, several actions were performed. I reached saturation of data through interviewing participants until no new information was presented. All data obtained has been peer-reviewed by an experience doctorally prepared individual. Also, review by the participants of their interview transcripts occurred to provide trust worthiness of the study (Shipman et al., 2016). Triangulation of current data related to the phenomenon is present in the literature review

as well as the next chapter. Also, the results of the study have been compared to previous studies to show transferability. All planned and completed processes of the study is disclosed in the next chapter to allow for similar future studies and to achieve dependability. Audit trails were completed throughout the research study process, which allows for disclosure of how and why actions were completed during the data collection and analysis (Shipman et al., 2016). The actions noted above have assisted in demonstrating the credibility and validity of the study.

Ethical Procedures

To avoid unethical actions within the study, ethical procedures guided by the Institutional Review Board (IRB) were followed. I obtained permission from the IRB (Approval Number # is 08-03-18-0235588) by providing the study's plan and supporting documents. No data or participants were obtained until IRB approval was obtained. Participants were educated on my purpose of the study before collecting any data. I also obtained informed consent from the participants before beginning the interviews. Participant name's and all data obtained that may lead to the discovery of the participant has been kept confidential. Data has been maintained in a password protected USB drive denoted specifically for the data obtained. It will be maintained for the minimum period of 5 years as per Walden University guidance. All though participants were informed that they could withdraw from the study at any time, this did not occur during the study.

All data obtained has been kept confidential. Viewing of the data has only been by myself, my committee members, the company that I used for transcribing the

information, and participants who were provided a copy of their own interview information to review for accuracy. Data has been stored on 2 different USB drives denoted specifically for the study. A password has been assigned to the documents to prevent unauthorized access to the data. Data will be kept for at least the minimum requirement of Walden University of 5 years post completion of the dissertation.

Summary

Exploration of the lived experiences of USPHS Commissioned Corps Nurse Officers who have deployed to disasters in the United States has been done through a phenomenological qualitative study. The Research Design and Rationale, Role of the Researcher, Methodology, and Issues of Trustworthiness have been outlined above. This will allow for the ability of future replication of the study. This information may also assist in understanding the reasoning for actions and outcomes noted in the results of the study. The following chapter will include specific during the data collecting as well as the results of the study.

Chapter 4: Findings

Introduction

My purpose in this phenomenological qualitative study was to explore the lived experiences of USPHS Commissioned Corps Nurse Officers who have deployed in support of disaster missions in the United States. I chose the phenomenology study of inquiry to guide the study because it allows for obtaining the lived experience of the participants and analysis through a reflective structure (Ravitch & Carl 2016). Husserl asserted that phenomenology was best understood through an individual's experiences, which included their perception, thought, memory, imagination, and emotion which he called intentionality (Reiners, 2012). The use of the descriptive phenomenology includes bracketing a researcher's opinions to prevent the researcher's bias in the study (Reiners, 2012). I acknowledged my personal experiences and identified my assumptions before beginning and throughout the study to prevent it from being imposed during data collection and the analysis process of the study. To prevent my own preconceived opinions of the phenomena from effecting the study, the use of Husserl's descriptive phenomenology was best for this study.

I performed an in-depth interview of 10 nurse officers employed at 1 of the OPDIV who have completed a Corps deployment in support for Hurricanes Harvey, Irma, or Maria in 2017 to collect data to obtain the most up-to-date perception of postdeployment nurse officers. The total number of interviews supported Rudestam and Newton's (2015) recommendation of 10 or fewer for phenomenological studies. In this

chapter, I will include the setting of the interviews, the demographics of the participants, data collection methods, data analysis, evidence of trustworthiness, and the results of the study. The study was guided by the research question:

How do nurse officers of the USPHS Commissioned Corps describe their clinical nursing experience while deployed?

The research question I used allowed for the development of themes within the data obtained through the interviews. I will provide the themes along with a detailed account of how the themes were developed. I will also provide direct quotes from the interviews to support the themes.

Research Setting

Regardless of the geographical locations where each participant resided, all participants included in the interview had deployed in 2017 in support of Hurricanes Harvey, Irma, or Maria. Their current geographical locations were throughout the United States. I used FreeConferenceCall.com as the mechanism to perform and record the interviews to include the perception of participants from multiple OPDIVs and geographical areas. This allowed for connection with officers in multiple geographical locations. The setting also allowed for privacy during the interview by allowing participants to choose an environment that was suitable for their comfort.

Demographics

All participants included in the study were nurse officers on active duty in the USPHS Commissioned Corps in non-clinical billets (positions). The officers were

assigned to 5 of the many OPDIVs. The age of the participants ranged from 32 - 54 years old. The years of nursing experience of the participants ranged from 10 to 32. At the minimum, all participants held a Bachelor of Science in Nursing as this is a basic entry requirement for nurses to be commissioned in the USPHS. The highest education degrees completed by the participants were Masters of Science in Nursing, Master of Public Health, Master's in Health Administration, and Family Nurse Practitioner - Board Certified (see Table 1).

All participants had prior experience in nursing in multiple areas before entering the USPHS Commissioned Corps. Their nursing experience was broad and include a variety of areas. These areas include 4 officers with prior Medical Surgical experience, 5 officers with prior Critical/Intensive Care experience, 3 officers with Pediatric experience, 2 officers with Trauma experience, 2 officers with Internal Medicine experience, 2 officers with Family Practice experience, 2 officers with Urgent Care experience, 2 officers with Psych experience and a number of other areas. Other specialties that officers stated prior experience included Emergency Room, Hospice, Research, Neurology, Education, Oncology, Nephrology, Outpatient, Airforce Obstetrics and Gynecology, Labor and Delivery, Post-Partum, Newborn Nursery, Surgery, and Burn. The participants had a diverse array of nursing experience.

Table 1

Summary of Participant Demographics

	n
Age (years)	
30 to 39	1
40 to 49	4
50 to 59	5
Number of years as a nurse	
6 to 10	1
11 to 20	4
> 20	5
Number of years in USPHS	
6 to 10	6
11 to 20	4
Number of years in nonclinical billet (position)	
1 to 5	3
6 to 10	6
11 to 20	1
Highest Education	
BSN	1
MS	9

Data Collection

A total of 11 participants were interviewed. According to Rudestam and Newton (2015), phenomenological studies have a sample size of 10 or less. The data obtained and analyzed included information provided by 10 of the participants. During the interview process, I discovered that 1 of the participants interviewed did not meet all the inclusion criteria for the study and therefore was excluded from the study. Since I had assigned this individual as participant #7, an additional participant was obtained and was assigned as participant #11. An initial invitation was sent via email to a potential participant identified during a presentation at the 2018 USPHS Scientific and Training Symposium. The initial invitation led to 37 recommendations which provided 7 nurse officers who responded to the invitation and that met the criteria to be a participant. To obtain additional participants that met the criteria, agency liaisons were contacted from the Commissioned Corps Agency Liaison list found online in the Commissioned Corps Management Information System (CCMIS). There were 16 additional recommendations provided of which 3 nurse officers that met the criteria were included as participants. A total of 11 participants were interviewed, and 10 met the criteria of the study.

I used the same procedure to invite all the participants to voluntarily participate in the study. I also provided all the participants information regarding the study via email and ensured they were volunteering to be included in the study by replying: “I Consent”. All participants completed a questionnaire to provide their demographic information. Once the participants replied with their consent, I scheduled interviews based on the date

and times the individual requested. I used my school email to send out the calendar invites with the call-in information from Microsoft Outlook. I performed and recorded each interview using FreeConferenceCall.com as proposed in the initial plans. This allowed for feasibility to transcribe the information obtained. There was 1 individual that reported her cellular service provider required a fee to connect to the conference call line and that her landline would not go through. I arranged for the use of 3 way calling to allow for the individual to participate in the call. In the invitation email and before the start of the interviews, I informed the participants that the interview would be recorded. I used an interview guide to ensure the same process was used for each participant during the interview. The interview guide included basic introduction information, leading questions, and closing information for the interview. I asked each participant the same leading questions which began with warm-up questions to core questions and ending with last questions for closure (see Table 2). Follow up questions were asked to provide clarity and understanding of the questions and answers. The average length of the interviews was 44 minutes.

Before the call, study participants were briefed on what to expect during the call. This provided information on the intent to record the call, that there were no right or wrong answers, this was based on their experience, and to answer the questions as best they can. I provided each participant with my purpose of this study and the choice to continue as a participant of this study before the interview commenced. A total of 10 questions were asked of each participant. Clarification to questions were provided as

necessary and probing questions were asked to encourage the participants to elaborate on their answers. For example, when I asked participant 4, “Tell me about your disaster nursing deployment experiences” the response was, “are you just looking for general, or are you talking more nursing specific or kind of both?”. I responded, “General. Anything that comes to mind when you think about your nursing deployment experience when you went there”. This clarification allowed for the participant to provide their perception of their experience and what stood out most to them. Once all the interviews were completed the analysis process began.

Data Analysis

The data analysis process assisted in discovering the themes of the study. I transcribed all interviews using Rev.com and obtained a confidentiality agreement from the company. I also reviewed each transcribed interview for accuracy and edited them as necessary. During this process, I created a list of statements that were common between the participants and wrote them down and grouped them. I provided a copy of the transcription to each participant to review and validate the accuracy of the information and to provide additional information. I then uploaded the transcription data into the NVivo system to assist with organizing and further analyzing of the information. The In Vivo Coding method was used to code the data. In Vivo Coding allows for the coding to honor the participant’s voice and is optimal for beginning qualitative researchers (Saldana, 2016). It also provides the use of the participant’s actual words verbatim for coding (Saldana, 2016). I used the groups identified related to the phenomenon during the

initial review of the transcripts to create nodes in the NVivo system. Information from the interviews were coded and grouped within the nodes based on their similarities. Any discrepancies to data from the similarities identified were presented in the results section for possible use in future studies. Themes were identified upon formulating meanings of the groups. For example, when participants were speaking about other nurse officers that they were deployed with they said, “helped each other, gave me guidance, and leaned heavily on my fellow nurse”. These codes together helped to create the categories supportive, educator, knowledgeable. The categories grouped together assisted with identifying the theme “Characteristics of Nurse Officers”. Based on the data obtained, the 5 themes that emerged were:

1. Characteristics of Nurse Officers
2. Perception of Clinical Preparedness
3. Training Needs
4. Challenges
5. Lessons Learned

Table 2

Interview Questions

Warm-up questions
Question 1. Describe your experience in nursing.
Question 2. What do you currently do now to keep up your clinical nursing skills?
Core questions
Question 3. Can you tell me about any predeployment training you received?
Question 4. If yes, how did it help you during the response?
Question 5. If no, what type of training do you think would have helped you in the response?
Question 6. Tell me about your disaster nursing deployment experiences.
Question 7. Regarding your nursing skills, how prepared did you feel during these disasters?
Question 8. What lessons did you learn during the disaster deployment?
Last questions
Question 9. Do you have any advice as to how USPHS Nurse Offices can prepare for disaster deployments in the future?
Question 10. What are the most important things other nurses could learn from that you experienced during your disaster?

Table 3

Characteristics of Nurse Officers

Categories	Codes
Educator	Gave everybody a little brief instructions
	She gave everybody an on-the-fly sort of down-and-dirty dialysis 101 training
	Gave a brief tutorial
	Gave me guidance
Knowledgeable	Highly intelligent
	Very resourceful and dynamic
	Skill levels of the other officers
	Great skills
	Had experience with dialysis patients
	Overwhelming amount of skills and knowledge
Supportive	Leaned heavily on my fellow nurses
	They asked me questions
	Cross-checking
	Leaning on each other's experiences
	Big key to our success
	Helped each other

Note. Table 3 shows categories and codes that supported the theme characteristics of nurse officers.

Table 4

Perception of Clinical Preparedness

Categories	Codes
Positive Perception	Felt really uncomfortable
	Felt comfortable (2)
	Comfortable
	Very comfortable
	Was comfortable
	Felt pretty good
	Was prepared
	Felt comfortable
	Felt very prepared
	Prepared
Negative Perception	Complete panic
	Super nervous
	Nervous
	Turning to topsoil on my brain
	Bit scary
	Had not done
	Hadn't had that training
	Worried that I wouldn't have the skills
	Don't know that I would have been able to function well
Experience	Length of time that I've been a nurse
	Been a nurse for so long
	Been a nurse so long
	Take care of a lot of my family members
	Having a background in critical care nursing
	Had the experience
	Wasn't like shocking
	That's something you don't forget
	Do work at an urgent care facility

Note. Table 4 shows categories and codes that supported the theme Perception of Clinical Preparedness

Table 5

Challenges

Categories	Codes
Physical	Demanding
	Walk and walk and walk
	Was very challenging
	Trying to assist some of these patients in bed
	Mobility challenges
	Was exhausted
	Exhausted
	Sharing billeting
	Stamina of going and going
Emotional	Emotional aspect of it
	Emotionally drained
	Mental wellness
	Overwhelming
Communication	Issues with communications
	True need and the true information
	Change of plans
	Misinformation
	Communication could have been better
	Disorganization

Note. Table 5 shows categories and codes that supported the theme Challenges.

Table 6

Training Needs

Categories	Codes
Basic Nursing	Basic nursing
	Basic nursing skills
	Basic training
	Giving medication
	Care of wounds
	Disease conditions
	Signs of infection
	Basic dialysis
	Basic refresher
	Quick refresher
	Refreshed on that, ACLS~CPR training
	Refresher training
	General nursing assessments
	What to look
	Full assessment
	General health assessment
	What to recognize in a patient
	Level of care
Mechanics of Patient Transferring	Mechanics of patient transfer
	Moving patients
	Positioning people
	Understand moving mechanics
	Patient movement
	Medical devices
Expectation	What to expect
	Expectations with field management
	Expected patient population
	General population
	Types of patients
	Population
Deployment/Disaster/Emergency Preparedness	Understanding the different roles
	Emergency preparedness
	Basic disaster scenarios
	Trauma nursing course
	Deployment

(table continues)

Categories	Codes
Frequency	Regular basis
	One day class
	Half day class two times
	Once a year
	One-week trainings
	Regular basis (2)
	Once a year (2)
	Routinely
	Continuous training

Note. Table 6 shows categories and codes that supported the theme Training Needs.

Table 7

Lessons Learned

Categories	Codes
Maintain Clinical Competencies	Part-time job
	Refresh memory
	Old nursing books
	Be prepared
	Have a plan
	Review ICS structure
	Work in hospital
	Keep up clinical skills
	Keep up nursing skills
Be Flexible	Be flexible
	Ready at moment's notice
	Do other jobs
	Anticipate the worse
	Be open to the experience
Selfcare	Rest
	Nutrition
	Hydration
	Eating
	Keep yourself comfortable
	Pack something comfortable
	Take a break
	Know your limitations
	Speak up
	Emotional recharge
	Yoga, medication, call home
	Find comfort
	Take care of yourself
	Bring non-perishable
Seek Assistance	
	Rely on your team
	Ask somebody
	Verbalize concerns
	Team work
	Use chain of command
	Stay in the loop
	Ask questions
	Talk with other nurses
	Buddy system for accountability

Note. Table 7 shows categories and codes that supported the theme Lessons Learned.

Evidence of Trustworthiness

Trustworthiness is important in qualitative research and is shown through standards of credibility, transferability, dependability and confirmability (Ravitch & Carl, 2016). In chapter 3, peer review, member checking, triangulation, audit trails, and comparing results to previous study results were identified as actions to be completed during the study to establish the trustworthiness of the study results. During the study, I incorporated all of these techniques.

To show creditability of the study, I used member checking and peer debriefing as suggested by Ravitch and Carl (2016). An audit trail is also suggested to influence creditability (Cope, 2014). I informed participants during the interview that the interview would be transcribed, and a copy would be provided to them to review. I provided the participants the opportunity to make edits and provided additional data to validate the accuracy of my interpretations. Participants were given the transcripts of the interview providing an opportunity to review the information and make any corrections needed. Only 1 of the participants provided additional information or corrections. A doctoral level professor and colleague assisted with performing a peer debriefing. I provided a sample of the data received to allow for examination of my interpretations to obtain additional points to consider. I performed an audit trail to provide a detailed outline of the steps used in the study to produce the results disclosed.

Transferability is enhanced by using thick descriptions (Ravitch & Carl, 2016). The inclusion of the exact quotes of the participants in the data allows the readers to

formulate their own comparison of the data. Researchers can also use this information to assist in developing future research (Ravitch & Carl, 2016). Results of the study were compared to previous studies by Shipman et al. (2016) which studied the lived experiences of first-time nurse responders in disaster and Wenji et al. (2015) who studied Chinese nurses' relief experiences. Although there were many similarities in the data obtained from the participants, the themes were only partially the same. A significance to note is that the participants used in both studies were different from the population of the current study (civilians vs uniform service officers).

Regarding dependability, triangulation is a technique used (Ravitch & Carl, 2016). There are different forms of triangulation, but in this case, I used data triangulation. Although I used the snowball sampling to obtain the participants, it led to a variety of participants. Participants included officers from different OPDIVs, a variety of years of nursing experience, and years since assigned to a non-clinical billet. This allowed for reinforcement of the data collected from different individuals, which is a form for data triangulation (Ravitch & Carl 2016).

To show confirmability, researchers must acknowledge their bias through reflexivity (Ravitch & Carl, 2016). Self-awareness should also be acknowledged to prevent bias (Yin, 2016). To focus on the data provided by the participants and bracket out the researcher’s beliefs, my perceptions and deployment experience were identified and written down. Also, during the interviews, I reframed from introducing or disclosing any personal Corps deployment experience I had to prevent alterations in the participant’s

feelings or descriptions of their Corps deployment experience. The use of creditability, transferability, dependability, and confirmability techniques allow for affirmation of trustworthiness of the study.

Findings

The research question I used to guide the study was: "How do nurse officers of the USPHS Commissioned Corps describe their clinical nursing experience while deployed." According to Shipman et al. (2016), experienced nurses may provide knowledge and recommendations for future disaster training. Based on the findings of the study, information and knowledge were provided through the answers to the interview questions provided by the 10 participants included in the study. The themes identified assisted in identifying the data that specifically addressed the research question.

Theme 1: Characteristics of Nurse Officers

A theme that emerged from the data is the "Characteristic of Nurse Officers". This theme addressed the experience of the nurse officers working alongside each other during the Corps deployment. Nurses can be assigned to and are responsible for an array of roles during disaster deployments (Brown-Stephenson, 2017). In addition to these expected roles, nurse officers took on another role during the disaster Corps deployment as an asset to each other. Many of the participants mentioned their experience working with other nurse officers to be very positive. The nurse officers were identified as resourceful, skillful, and educators.

Participant #1 stated, “I'm always amazed, like, on deployments, at the skill levels of the other officers. We have our nursing officers, and other officers as well, but especially nurses, of course. Very resilient, very resourceful and dynamic and just highly intelligent”. They worked together as a team and looked to each other for support.

Participant #3 stated, “I leaned heavily on my fellow nurses that I worked the night shift with. And they asked me questions, and there's a lot of cross-checking. Because I think all of us were in the same boat and so leaning on each other's experiences was the big key to our success.”

The nurse officers also looked up to each other as a resource and educator.

Participant #4 stated, “…we had a nurse who was a dialysis nurse by happenstance on the team. So, she gave everybody an on-the-fly sort of down-and-dirty dialysis 101 training. So, I thought that was brilliant. I think in general, as a whole, the nurses that I deployed with us were fantastic. We looked out for each other. We helped each other.” Identification of the characteristics of the USPHS Nurse Officers that were present during the deployment were viewed as a positive attribute during the deployment.

Theme 2: Perception of Clinical Preparedness

Another theme that was prevalent and was relatable to the first theme was “Perception of Clinical Preparedness”. When asked, “Regarding your nursing skills, how prepared did you feel during the disaster deployment?”, most of the participants replied that they felt comfortable or prepared. They stated their extensive experience in nursing,

current work experience, or the basic nursing need for the Corps deployment contributed to this.

Participant#1 stated, “I was very comfortable at the time because I had been doing it”.

Participant #3 stated, “I was comfortable with the patients. Having a background in critical care nursing I know how bad a patient could get”. Along with the experience of the nurses and the needs of the deployment, 1 nurse reported that her perception of being prepared was related to the availability of other nurse officers and their knowledge.

Participant#4 stated, “I felt like, from a nursing perspective, I felt comfortable. I didn't feel like that there was going to be something that presented itself that I would not be able to either handle or consult with other members of the team to come to a resolution on the best way to proceed”.

The current work experience of Participant #8 contributed to her perceptions of clinical preparedness. She stated, “Being a nurse is like riding a bike, somethings you don’t forget, but I know you need refresher courses to be current. But since I work at an urgent care facility where I do normal nursing tasks, like blood pressures, triaging, drawing blood, starting IV’s and injections, I was prepared for the deployment.”

Although most of the participants felt they were clinically prepared during the disaster Corps deployment, at least 1 participant reported otherwise. Participant #2 stated, “I was nervous because there were so many cobwebs that it actually was turning to topsoil on my brain of med-surg nursing…. I was really concerned because I just wasn't

up to date with those kinds of skills." The participant was asked to elaborate more about what skills and training that would have been beneficial before deploying. This information was provided, and a detailed list of recommended training will be discussed in the next theme.

Theme 3: Training Needs

Participants provided information on their experience that led to the identification of areas which could have provided more support to them during the Corps deployment. These areas were related to predeployment information, training, and maintenance of clinical competency. Some of the participants reported receiving some predeployment information related to things to pack, how to stay comfortable, stress management, and what may be encountered. None of the participants reported receiving any nursing specific predeployment training.

Participant #3 reported, "The team had meetings that we had met and talked about what to expect and what to pack but nothing mainstream basic nursing that I received."

Although no nursing specific training was received, at least 2 participants reported the training that was provided was helpful. Participant #2 stated, "most of this stuff was just kind of getting us ready to get into an austere environment, what to pack and then how to stay comfortable and tolerate what we may or may not encounter. So that was good, that was all done by just sending us information by the email."

There were also many recommendations provided of predeployment training that would have been beneficial to have before deploying. Participants were asked, "What

type of training do you think would have helped you in the response?" The 5 most recommended were training in basic nursing, mechanics of patient transferring, deployment/disaster, emergency preparedness, and the organization and setup of a field medical unit.

Participant #2 stated, What I think would be helpful would be if there was a, just a general, maybe like a 1-day class or maybe like a half day class 2 times, just to do general nursing, assessments and moving patients and patient mobility.

Participant #3 stated, "I don't work day in day out with an ICS (Incident Command System) structure. So, I think just the refresher of that was something that I had to get used to".

Participant #4's response was, "basic disaster scenarios or disaster management training, just kind of what to expect."

Although, the participants provided training recommendations to assist with deployment preparedness, participant #1 stated, "I think the only thing that we can really do as nurses in the Corps is try to maintain your clinical competency through either finding outside employment on your own or if the Corps would get MOUs [memorandum of understanding] with local MTFs [military treatment facilities]. Until you actually do it hands-on on a regular basis, I think you kind of lose your skills, in my opinion. I just think that nothing's better than just actually doing it."

As a requirement to maintain clinical competency of Nurse officers who deploy in a nurse role must obtain 80 clinical hours per year (Readiness and Deployment

Operations Group (RedDOG), 2018). All the participants except for 2 stated that it was a challenge to obtain clinical hours. Many reported that they maintain their required hours by participating in Corps deployments.

Participant # 9 stated, “I actually was trying to get a waiver to provide services at the VA [Veterans Administration], but that has been stalled. They're receptive, but slow in approving it, so I actually haven't done any clinical, except for my deployments, regularly.”

Participant #11 stated, “It's really hard to find a place to volunteer, without actually working there as a job. It's easier to find a job in clinical than it is to find a place that'll let you volunteer and do your clinical skills.”

Although, Participant #8 stated, “I work for an urgent care facility where I can work 1 to 2 weekends a month or 1 day out of the weekend (Sat or Sun) to get my clinical hours. The urgent care facility needs nurses, so they will hire you.” There were 4 other participants who also recommended regular training either yearly, for a full week or day.

Many of the participants stated that the knowledge of the population that they would be serving would have been helpful to know as well. Nurses need knowledge and skills sets related to the perspective population that nurses will be serving during the deployment (Agazio, 2010).

Participant #8 stated, “It can be hard not knowing what environment or what patient population we are going to assist. I think frequent briefings on the possible patient population and disease process would be very helpful.” Other training recommended to

note were nursing assessment, starting an IV, and what to expect in a deployment. Taking these areas of training into consideration may assist in developing an optimal deployment experience.

Theme 4: Challenges

USPHS Commissioned Corps Nurse Officer's deployments are temporary duty assignments from their assigned duties within the OPDIV. (Brown-Stephenson, 2017). These duties may be clinical in nature or administrative. A theme that emerged from the information provided by the participants was "Challenges". At least 4 of the participants reported challenges that were physical or emotional. There were 5 participants who identified communication as a challenge.

Participant #4 stated, "…walking in the door and just seeing tons and tons, rows of people and people sleeping on floors. So, it was just a little bit overwhelming… For me, I think it was both physically demanding but nothing that I could not do". This participant provided other emotional aspects of the deployment that was so descriptive, it affected me emotionally during the interview.

Participant #3 stated, "It was just the stamina of going and going and being in a new area and kind of the waiting until you're told what's the next steps. That was a big challenge probably for someone who has never done a hurricane deployment."

When participant #9 spoke of the physical challenges faced, "I work behind a desk. So, for me, the challenge was walking up and down the unit cause it was concrete".

Another challenge participants spoke of was related to the distribution of information. Participant #9 stated, "…information just was not consistent so that created a lot of frustration and undue stress and unnecessary stress on the team as a whole. Especially for those that are augmenting for the team.". Others described the communication related to travel to or from the deployment site. In all, every participant spoke of some challenge that they faced during the deployment.

Theme 5: Lessons Learned

The participants were able to provide many suggestions that would help other nurse officers prepare for future deployments. The main lessons learned were, maintain clinical competency, be flexible, self-care, and seek assistance.

Participant #5 stated, "I think it's always good to keep up your clinical skills. That's important".

Participant #1 stated, "But prepare to be extremely flexible, and take care of yourself. Make sure that you're attending to your proper rest and proper nutrition while you're on deployment".

Participant #5 stated, "When you're deployed, you're not deploying by yourself, you're deploying as a team. So always ask or learn how to ask for help".

Participant # 11 stated, "Ask questions so that you're clear. A lot of times everybody's confused and frustrated, but no one asks the question about, "Hey, what are we doing and what's next?" Ask questions of your leadership".

Participant #9 stated, "…you have to establish some type of buddy system, so you've got to have someone that you can be accountable to and they're accountable to you, especially if you're in an awkward environment. Also, they can help to bring to your awareness if they notice that you're decompensating or if you need someone to talk to. I think having a buddy system definitely helps". Through the experience of the participants, recommendations were provided for areas to consider for deployment preparation.

Summary

This research study included information from 10 USPHS Commissioned Corps officers in non-clinical billets (positions) who had deployed in support for Hurricanes Harvey, Irma, and or Maria. Participants were asked the same 10 questions to obtain information about their experience during the disaster Corps deployment. My purpose of this study was to answer the research question of: "How do nurse officers of the USPHS Commissioned Corps describe their clinical nursing experience while deployed?" The information obtained from this study may assist with the preparedness of future nurse officers and training obtained. A total of 5 themes arose from the data obtained through the interviews. Based on the deployment experience of the participants, Characteristics of Nurse Officers, Perception of Clinical Preparedness, Training Needs, Challenges, and Lessons Learned were identified which addressed the research question. Information on the interpretation of the findings, limitations of the study, recommendations, and implications will be included in the next chapter.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

My purpose in this phenomenological qualitative study was to explore the lived experiences of USPHS Commissioned Corps Nurse Officers who have deployed to disasters in the United States. Baack and Alfred (2013) suggested that previous experience in disaster preparedness is an important factor that plays a positive role in current disaster preparedness in nurses. The results of this study may assist with providing information to increase deployment readiness in nurse officers of the USPHS.

The results of the study provided information on several areas that contributed to the participant's disaster deployment experience. Findings included information regarding the participant's self-reflection of their perception of clinical preparedness during the deployment which revealed the feeling of preparedness. "Perception of Clinical Preparedness" was largely related to the array of nursing experiences that each nurse officer possessed as well as the support from other nurse officers. This was related to another theme titled "Characteristics of Nurse Officers" which provided the participant's experience of working alongside other nurse officers of the USPHS. They identified them as skilled, resourceful, and educators. However, participants had an array of nursing experience which led to their perception of being clinically prepared, "Training Needs" was another theme that emerged. Participants provided areas of consideration to foster an optimal deployment experience. Some areas included maintaining clinical competency and specific areas of training. "Lessons Learned" was

another theme that emerged providing recommendations to assist nurse officers in future deployments. In this chapter, I will provide the interpretations of these findings, limitations, recommendations, and implications of the study.

Interpretation of the Findings

I used the lifeworld theory, a phenomenological research approach developed by Husserl as the framework for this study (Linberg et al., 2016). The lifeworld theory assisted in exploring how a participant perceives their understanding of the experience (Reiner, 2012). The phenomenology study of inquiry allows for obtaining the lived experience of the participants and analysis through a reflective structure (Ravitch & Carl 2016). Similar to the lifeworld theory, the selected research question focuses on the experience of a particular participant. The research question I used provided guidance in determining themes that contributed to addressing it. The themes identified concluded findings that suggested the experiences of nurse officers who had previously deployed could assist in providing information to influence the preparedness of future nurse officers in the USPHS who will deploy in support for future disasters response. These themes included Characteristics of Nurse Officers, Perceptions of Clinical Preparedness, Training Needs, and Lessons Learned.

Previous peer-reviewed literature identified related to this phenomenon included similar themes, but with different categories and data as well as the use of other sources for obtaining the data such as the author's perception and perceptions of officers assigned to Rapid Deployment Force (RDF) 3. This study was specific to the perception of

USPHS Nurse Officers and therefore extended knowledge of the phenomenon. A theme that was discussed in previous studies was “challenges”. During the interview, participants provided information regarding their physical, emotional and communication challenges during their disaster deployment. This information led to the identification of the theme “Challenges”. In other peer-reviewed literature, challenges identified included lack of organization in patient care areas, patient flow, creating chain of command, identifying providers, and lack of diagnostic services, equipment medications and supplies (Connelly, 2006), and language barrier, culture difference, religious beliefs and practices, and educational and public health understanding (Brown-Stephenson, 2017).

Regarding the lessons learned, findings extended lessons learned from previous literature. Walsh et al. (2006) provided areas of lessons learned from a deployment in support for Hurricane Rita as preparedness and training which included medical expertise suitable to the patient population, and ability to anticipate medical and infrastructural needs in rapidly changing environment. Other areas of lessons learned from this literature were command and control structure, communication, and resourcefulness and adaptability. The source of this information provided in an editorial was based on the authors’ perceptions. Iskander, McLanahan, Thomas, Henry, Byrne, and Williams (2018) reviewed after-action reports and other unpublished documents in developing areas of lessons learned from Corps deployments supported by Rapid Deployment Force (RDF) 3 between 2006 – 2016. After-action reports provide an avenue to obtain lessons learned and recommendation identified from the participant’s feedback after an exercise,

deployment, or other operational events (Ross et al., 2008). The lessons learned were the need for both clinical and public health capacity, the value of having special mental health resources, the benefits of collaboration with other federal medical responders, and recognition of the large burden of chronic disease management issues following natural disasters (Iskander et al., 2018). The data from this literature was based on the experiences of the RDF 3. RDF 3 are USPHS Commissioned Corps Officers who deploy within 12 hours, consist of officers from a diverse clinical and public health category, and have participated in multiple deployments (Iskander et al., 2018). Due to these differences, these officers may have different perspectives of their deployment experience.

During this study, I excluded any officers on an RDF since their deployment experience may have been more advanced than officers who have little to no Corps deployment experience. I only sought to include the perceptions of nurse officers. The lessons learned identified were, maintain clinical competencies, be flexible, self-care, and seek assistance. This is new knowledge related to lessons learned from a new perspective.

Characteristics of Nurse Officers

Participants provided information regarding their experiences working alongside other USPHS Nurse Officers. The participants felt the characteristics of the nurse officers that they worked alongside fell into categories of educators, knowledgeable, and supportive. Debisette et al. (2006) identified USPHS Nurse Officers during a response to Hurricane Katrina as educators, counselors, and researchers. Connelly (2006) provided

actions performed by USPHS Nurse Officers during the response to Hurricane Katrina which contributed to addressing some of the challenges they faced before arrival of the USPHS Officers. The theme Characteristics of Nurse Officers was also related to the perception of clinical preparedness of the participants which they provided based on their experience during the disaster Corps deployment. Many of the participants reported feeling comfortable and prepared during the disaster Corps deployment due to the traits of a USPHS Nurse Officer that they were working alongside.

Perception of Clinical Preparedness

Most of the participants reported their perception of clinical preparedness as prepared. Current studies recognized deployment readiness and disaster preparedness as an important training requirement for nurses (Gebbie et al., 2012; Li et al., 2015; Shipman et al., 2016). Participants were able to reflect on their experience to identify their perceived competence and clinical preparedness. Although most of the participants reported feeling prepared, recommendations were provided for trainings that would assist in preparing nurse officers for future disaster Corps deployments.

Training Needs

Participants provided recommendations for training that they felt would have benefited them to have before to the disaster Corps deployment. The training was in relation to basic nursing, mechanics of patient transferring, expectations, deployment/disaster/emergency preparedness, organizations, and frequency of training. Based on the experience of the participants these are the areas they felt training needs

were warranted. As one of the largest health professional disciplines contributing to deployments, the skill of a nurse is essential (Gebbie et al., 2012). The need for knowledge beyond a nurse's usual scope of practice may be required during a disaster response (Gebbie et al., 2012). As stated by participant #1, "Until you actually do it hands-on on a regular basis, I think you kind of lose your skills." While some officers are assigned to nursing clinical billets (positions), others are not. This may hinder their performance during a disaster deployment due to lack of consistency in using the expected deployment nursing skills. Gebbie et al. (2012) reported competencies should be maintained on a regular basis through practice. Through reflection of their deployment experiences, participants were able to provide recommendations that may benefit future training and preparation for Corps deployments.

Challenges

Challenges were also an area which the participants provided information on based on their disaster deployment experience. Participants reported physical, emotional and communication challenges. Connelly (2006) provided the challenges faced by an Illinois volunteer emergency response team during Hurricane Katrina. In this study, challenges were related to the population of the people that were being cared for. In the current study, challenges were in relation to what the nurse officers perceived as challenges.

Lessons Learned

Participants provided areas of lessons learned during the deployment which were contributed to their experiences. According to Shipman et al. (2016), experienced nurses may provide knowledge and recommendations for future disaster training. The experiences of the participants can provide valuable information to nurse officers for preparation for their future deployments. This theme was also identified in an editorial written by Walsh et al. (2006) which included the experience of USPHS Nurse Officers that had deployed in support for Hurricane Rita. Iskander et al. (2018) also included lesson learned from deployments of RDF 3 team between 2006 – 2016. Connelly (2006) also provided the lessons learned by an Illinois volunteer emergency response team during the response to Hurricane Katrina. The lessons learned in the current study were based on the experience of the participants during Hurricanes Harvey, Irma, and or Maria. The main lessons learned from this Corps deployment were maintaining clinical competencies, being flexible, self-care, and seek assistance. These lessons learned may be beneficial to nurse officers during their future disaster deployments.

Limitations of the Study

Efforts were made to prevent limitations in the study, but some limitations still arose. Limitations were identified for this study included the participant's previous and current experiences, deployment history, difficulty in the recall of experience and sampling and research method. Nurse officers that have deployed several times or held informative roles while deployed may have a different lived experience than the nurses

that had little to no deployment history. The set exclusion criterion for the study was nurse officers who were in Rapid Deployment Force (RDF) teams. This exclusion was important in preventing the differences in the participant's experience from that aspect. Nurse officers on an RDF team may have more advance experience in disaster deployments and roles than an officer that was not on a team.

Another limitation was the lack of identification of how many deployments each participant had supported. This information would have been important to include to identify if there were differences in the experiences of officers with participations in multiple disaster deployments vs officers with less participation. Also, nurse officers who have additional nursing positions outside of their USPHS Commissioned Corps position showed to have been better prepared for deployment which lead to a better deployment experience. There were 2 participants did report having additional positions outside of their current USPHS assignment.

I also identified limitations related to recall. At least 2 participants reported not being able to recall some of their experience from the deployment due to the length of time since the event. Another limitation of the study was the sampling methods used in the study. I used the snowball method to obtain additional participants. This resulted in 50% of the participants being assigned to 1 specific OPDIV limiting the deployment experiences for that percentage to only officers from that OPDIV. The other 50% was a variety of representation of other OPDIVs. Another limitation of this study was the use of the qualitative method. This led to a limited representation of nurse officers in the

USPHS which was based on the sampling recommendations for qualitative studies. The limitations identified are important to note as they may be used as recommendations for future studies.

Recommendations

Some valuable themes emerged from the study. Although, additional aspects of the participant's disaster Corps deployment experience can be obtained in future studies. During the interview at least 2 participants reported issues with recall of some details of their disaster deployment experience. The interviews were done approximately 1 year from the time the participants had provided support for Hurricanes Harvey, Irma, and or Maria. Future studies may provide additional information if completed before 1 year of the disaster deployment.

Another recommendation for future studies is the sampling method used. The snowball method led to difficulties in obtaining participants for the study. There were 42 invitations sent out, and only 22 individuals responded. Of the 22, only 7 of them did not meet the criteria for the study. There were 2 that were never interviewed due to scheduling conflicts, and I excluded 1 from this study after identifying that the participant did not meet the criteria for the study during the interview. Additional feasible methods of obtaining participants may assist in obtaining a more diverse population of nurse officers.

At least 3 participants spoke of the Corps deployment as being their first disaster deployment in support of a hurricane. The number of disaster Corps deployments each

participant has supported or if this was their first disaster deployment may be significant enough to exam in future studies as it may lead to new perspectives. This information may have been important to include to identify if there were differences in the experiences of officers with participations in multiple disaster Corps deployments vs officers with less participation. Shipman et al. (2016) conducted a study to obtain information on the lived experiences of first-time nurse responders in disaster settings. Findings included deficiencies in training, what to expect during a disaster, and mass casualty incident exercise conducted at work/school was not effective in preparing the first-time nurse responders. This study used the qualitative method to obtain its data. The use of the quantitative method may also provide benefits.

The current study included the perspective of 10 participants as recommended for qualitative studies (Rudestam and Newton, 2015). To obtain additional information from a larger more diverse population, the use of quantitative vs qualitative study may be beneficial. This may also allow for identification of perceptions of officers in a variety of OPDIVs and how they affect an officer's deployment preparedness.

Although most of the participants reported feeling comfortable or prepared during their disaster deployment experience, additional studies that provide identification of clinical preparedness based on set guidelines as conducted with other populations may be beneficial. In the study conducted by Rivers et al. (2006) the U.S. Army used the Readiness Estimate and Deployability Index to explore the nursing competencies within nurses that have deployed. Dremsa et al. (2004), also used the Readiness Estimate and

Deployability Index to obtain a self-assessment of 181 Air force Nurse Officers' perception of readiness during deployment. These studies were quantitative studies with set variables. Another tool that may be beneficial to use to measure clinical skills of self-efficacy is the Clinical Skills Self-Efficacy Scale (Oetker-Black, Kreye, Underwood, Price, & DeMetro, 2014). Based on the findings of a study by Oetker-Black (2014), self-efficacy is important to future studies to determine its correlation to successfully performing the clinical skills. The information obtained during the interviews of this current study may assist in determining information necessary to conduct future studies similar to previous studies.

Implications

The results of this study address the gap in literature of USPHS Commissioned Corps Nurse Officers experiences in disaster Corps deployments, and it may assist USPHS deployment training staff in changing the current culture through identifying necessary changes in current processes, improving current policies, procedures, and creating standardized deployment readiness training. The change in culture may then contribute to positive social change within USPHS Commissioned Corps Officers and their future patients. Moreover, this change may further positively affect the training provided to the USPHS Commissioned Corps Nurse Officers and possibly increase their confidence in their clinical nursing competencies. The care of the patient population that the officers will be serving during deployment may positively be affected by the increased competency of the nurse officers. This may decrease the number of required

days necessary for patient care, which will allow for fewer deployment days or deployment rotations for USPHS Commissioned Corps Officers as well as a decrease in funds necessary to carry on the mission of the Corps deployment. Fewer deployment days for USPHS Commissioned Corps Officers contribute to less time away from an officer's family. Collectively, these changes will contribute to positive social change by providing an improvement in human and social conditions as defined by Walden University (2018).

The disaster deployment experience of USPHS Nurse Officers was a phenomenon which I evaluated through a qualitative research study to gain a specific view or interpretation of a specific group. It allowed the USPHS Commissioned Corps Nurse Officers the opportunity to share their experiences as a Nurse Officer during a disaster deployment. Interviews of nurse officers who have completed a deployment in support for Hurricanes Harvey, Irma, and or Maria in the last year assisted in obtaining the most up-to-date data of the perception of postdeployment Nurse Officers. Information obtained related to the competencies of the USPHS Commissioned Corps Nurse Officers during deployment may assist in determining the need for modifications in current predeployment training and policy development.

I performed this study using the lens of the lifeworld theory, a phenomenological research approach developed by Husserl (Linberg et al., 2016). This approach allows for openness and flexibility of the phenomenon to be studied. This is done through meeting people, talking to people, and listening to their narratives (Berndtsson et al., 2007). The phenomenology study of inquiry allows for obtaining the lived experience of the

participants and analysis through a reflective structure (Ravitch & Carl, 2016). Similar to the lifeworld theory, the research question guiding this study focuses on the experience of the particular participant.

Conclusion

This study provided the disaster deployment experience of USPHS Nurse Officers who had deployed in support of Hurricane Harvey, Irma, or Maria to obtain areas that may assist in preparing nurse officers for future disaster deployments. The information obtained identified that the participants had experience in a large number of areas in nursing. They contributed their perceived competency and clinical preparedness to mostly their past and current clinical experiences and the clinical nursing needs for the deployment. The characteristics of nurse offices also were relevant to the perception of the participants. They reported this contributed to their perception of clinical preparedness. Nurse officers were characterized as being educators, knowledgeable, and supportive during the deployment. The nursing experiences, nursing deployment needs and other USPHS nurse officers contributed to the perceived competency and clinical preparedness of the participants.

Although participants reported feeling prepared during the disaster deployment, they reported physical, emotional challenges as well as challenges in communication and in obtaining required clinical hours. Lessons learned was another theme that emerged which included the importance of maintaining clinical competencies, being flexible, self-care, and seeking assistance. Along with the lessons learned, participants provided

recommendations to address training needs. These needs fell into categories of Basic Nursing, Mechanics of Patient Transferring, Expectations, Deployment/Disaster/Emergency Preparedness, Organization, and Frequency of training. The challenges, lesson learned, and training needs provided may play an important role in preparing future nurse officers for disaster deployments.

Findings of my research were similar in some areas as previous studies, but this study added knowledge to literature specific to USPHS Nurse Officers. Additional studies are recommended to obtain a larger and more diverse population of USPHS Nurse Officers. Findings may also assist USPHS deployment training staff in changing the current culture through identifying necessary changes in current processes, improve current policies, procedures, and create standardized deployment readiness training.

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