

THESIS APPROVAL

THE ROLE OF THE NURSE PRACTITIONER IN MILITARY DEPLOYMENT

CAPT MICHELLE LAVEY

APPROVED:

Regina E. Aune 4 April 96
LT COL REGINA E. AUNE DATE

Barbara M. Sylvia 4 April 96
DR. BARBARA SYLVIA DATE

Linda L. Brickley 4 April 96
LT COL LINDA BRICKLEY DATE

APPROVED:

Faye M. Abdellah 4/4/96
DR. FAYE G. ABDELLAH, DEAN DATE

CURRICULUM VITAE

Name: Michelle D. Lavey

Permanent Address: 8802 Rustburg Circle
Gaithersburg, MD 20879

Degree and Date to be Conferred: Master of Science in Nursing (1996)

Date of Birth: August 23, 1960

Place of Birth: East Liverpool, Ohio

Secondary Education: Midland High School
Midland, PA 15059
June 1978

Collegiate Institutes Attended	Dates	Degree	Date of Degree
Uniformed Services University of the Health Sciences	Aug 94-Present	MSN	May 18, 1996
Bowling Green State University	Aug 78- May 83	BSN	May 1983

Major: Nursing

Professional Positions Held:

Civilian Experience:

May 83 - Aug 85 Firelands Community Hospital, Sandusky, OH, Charge Nurse/Staff Nurse, 12-bed Intensive-Coronary Care Unit

Aug 85 - Jun 86 Firelands Community Hospital, Sandusky, OH, Staff Nurse, Emergency Services Department

Jun 86 - Dec 89 Parkside Health Management Corporation, Toledo, OH, Clinician/Manager, Employee Health Services (Ambulatory Care clinic for 3000 employees)

Feb 90 - Jun 90 Firelands Community Hospital, Sandusky, OH, High-tech Home Health Care Coordinator/Clinician, 200-bed hospital service for 4 counties

Military Experience:

Mar 91 - Nov 92 22nd Medical Group, McConnell AFB, KN, Staff Nurse, 13 bed multiservice unit

Nov 91 (additional duty), Nov 92 (full-time) - Jul 94; 22nd Medical Group, McConnell AFB, KN, Health Promotion Manager, Comprehensive Health Care clinic program serving 3,500 active duty and 30,000 beneficiary population

DEPARTMENT OF DEFENSE

DISCLAIMER STATEMENT

"This work was supported by the Uniformed Services University of the Health Sciences Protocol No. NO6105-01. The opinions or assertions contained herein are the private opinions of the author and are not to be construed as official or reflecting the views of the Department of Defense or the Uniformed Services University of the Health Sciences."

COPYRIGHT STATEMENT

The author hereby certifies that the use of any copyrighted material in the thesis entitled:

"The Role of the Nurse Practitioner in Military Deployment"

beyond brief excerpts is with permission of the copyright owner, and will save and hold harmless the Uniformed Services University of the Health Sciences from any damage which may arise from such copyright violations.

ABSTRACT

What is the role of the military nurse practitioner in deployment? Nurse practitioners are not currently deployed for their ability to fulfill the role of a primary health care provider for which they are educated, but instead are deployed as medical-surgical nursing staff/administrators. The first class of military family nurse practitioners will graduate from the Uniformed Services University of the Health Sciences in May of 1996. While the role of this new group of professionals is not precisely defined, education within a Department of Defense institution, structured for the military services, requires definition in the area of the medical readiness role--a unique role for the *military* nurse practitioner. The exploration and description of the deployment role of the nurse practitioner has been accomplished in this study through a qualitative, descriptive research methodology, to include the nature of patient care provided in the field, the actual role fulfilled by nurse practitioners that have deployed, and their perceived degree of preparedness, performance, and role congruence as a result of medical-readiness training and role expectation. A purposeful sample of ten military nurse practitioners were interviewed, the data was analyzed using the constant comparative method and reported in an attempt to describe the most effective utilization of the military nurse practitioner during deployment and to make recommendations regarding the readiness training of the nurse practitioner.

THE ROLE OF THE NURSE PRACTITIONER IN MILITARY DEPLOYMENT

by

CAPTAIN MICHELLE D. LAVEY

THESIS

Presented to the Graduate School of Nursing Faculty of
the Uniformed Services University of the Health Sciences

in Partial Fulfillment

of the Requirements

for the Degree of

MASTER OF SCIENCE in NURSING

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

May 1996

DEDICATION

To the most important people in my life, I dedicate this thesis and the attainment of my goals. I am fondly appreciative of the following special people:

My mother, who taught me that the possibilities are endless and completely attainable, and for her constant support and faith in my ability. I thank her for instilling in me self-confidence, patriotism, and a strong work ethic.

My wonderfully perfect children, Miranda, Mackenzie and Cassidy, for the joy they bring to our family, and for believing that I can do everything well. I learn so much of what is truly important from them.

My father, for teaching me to stop and smell the mushrooms, and for dancing with me when I was a little girl and any other time that I've asked.

My many friends, Lisa and Bev for their unconditional love, constant faith, and support; Janet, Kate and Ursell, for their assistance and friendship that brought me through the past two years; Trish, for pacing me through the final "hoorah" in completing this thesis; and Bob, for his companionship that provides the perfect balance to my hectic lifestyle that sometimes sweeps me along with it. Without all of you, the past two years would not have been so wonderfully memorable.

ACKNOWLEDGMENTS

The assistance, guidance, and support of numerous people have contributed to making possible the completion of this thesis and attainment of this degree. Grateful appreciation is extended to Lt Col Regina Aune (Ph.D.), Chairperson and the members of the thesis advisory committee, Lt Col Brickley, and Dr. Barbara Sylvia. Their guidance and knowledge have been invaluable.

A special thanks goes to Col Elizabeth Scannell (Ph.D.), for her encouragement and support. She consistently provided expert guidance. Her energy became my energy and her belief in me and this study supported me in difficult times.

My appreciation is also extended to Col G.W. Seigneous IV, Lt Col Dian Atkins, and Lt Col Kathleen Schreck (Ret) for supporting and mentoring me during my first Air Force assignment at McConnell Air Force Base. Their encouragement and support have been instrumental in helping me pursue this educational opportunity. My success in the Air Force will be attributable to their leadership.

Grateful appreciation is also extended to the participants, who gave willingly of their time and shared their stories. Finally, a big thanks to Janet Anastasi for her assistance in producing a written thesis of which I am very proud.

TABLE OF CONTENTS

Chapter One	1
Aim of the Study	1
Chapter Two	3
Evolution of the Study/Review of the Literature	3
Literary Context	3
Role Theory	5
Nurse Practitioner Evolution and Primary Care	9
Military Nurse Practitioner	10
Primary Care	11
Disease and Non-Battle Injury	13
Summary	25
Chapter Three	27
Method of Inquiry	27
Applied	29
Subject Selection and Setting	30
Data Collection	32
Data Analysis	33
Reliability and Validity	35
Chapter Four	38
Finding of the study	38
Description of the Sample	38

Findings	38
Theme Category 1: Deploying to War and MOOTW	40
Theme Category 2: Developing the Role	41
Theme Category 3: Struggling with the Role	50
Theme Category 4: Implementing Our Nursing Dimension	51
Theme Category 5: Officership/Leadership	51
Theme Category 6: Cultural Dilemmas	52
Theme Category 7: Lacking Preparation	54
Chapter Five	58
Conclusions and Recommendations	58
Discussion	58
Significance for Nursing	62
Limitations of the Study	62
Recommendations for Further Research	63
Conclusions	64
Appendices	65
Appendix A. Annex F (HSD-TP-991-002)	65
Appendix B. Interview Guide	67
Appendix C. Consent Form	68
References	70

LIST OF TABLES

Table 1. Baseline Slight DNBI Rates	15
Table 2. Average Troop Illness Patterns	16
Table 3. Injury/Disease Incidence Rates	23
Table 4. Categories of Themes and Theme Clusters	39

CHAPTER ONE

Aim of the Study

In recent years, medical readiness has received increased emphasis and operational plans have undergone drastic change in response to the changing war-threat environment. Additionally, the United States (US) has a tradition of offering assistance to less developed countries in the area of health care, military operations other than war (MOOTW). The purpose of this qualitative, descriptive study was to explore and describe the role of the military nurse practitioner (NP) in military deployment. NPs are not currently deployed for their ability to fulfill the role of a primary care provider under their primary Air Force Specialty Code (AFSC), but instead are deployed under their secondary AFSC as medical-surgical nursing staff/administrators.

The exploration and description of the readiness role of the NP has been accomplished through naturalistic inquiry regarding recent deployments, wartime and MOOTW, to include the nature of patient care provided in the field, the actual role of the NPs that have deployed, and their perceived degree of preparedness, performance, and role congruence as a result of training and role expectation. While there are studies which peripherally address these deployment phenomena, there are no published reports specific to the role of the NP in medical readiness.

A qualitative, descriptive research method was selected by this novice researcher for its usefulness in studying an area in which no research has been reported. Qualitative research is useful in studying areas in which little previous research has been conducted and in gaining a new viewpoint in familiar areas of research (Burns & Grove, 1993).

Artinian (1988) has identified four qualitative modes of nursing inquiry [within grounded theory], each used for different purposes: descriptive mode, discovery mode, emergent fit mode, and intervention mode. According to Burns and Grove (1993):

The descriptive mode provides rich detail and must precede all other modes. This mode, ideal for the beginning researcher, answers such questions as what is going on? How are activities organized? What roles are evident? What are the steps in a process?

In many disciplines, old models, methods, and theories have been supplanted or supplemented by new paradigms, strategies, and techniques based on a naturalistic study of people in their social and cultural environment (Denzin & Lincoln, 1994). With the purpose of eliciting and describing the role of the NP in military deployment, qualitative research permitted the capture of a richer interpretation of the participants' perspectives. Descriptive studies are effective initial studies where there is a need to know "what is."

The potential contributions of this study include the description of the phenomenon for theory postulation regarding the role of the NP in medical deployment, specifically uncovering recommendations for readiness training curriculum (academic and operational readiness training) for NPs as members of the medical team. In addition, it may help to provide for a more "ready" NP force with resultant improved quality of care to the recipients of care during deployment whether they are U.S. military troops, host nation civilians, or enemy prisoners of war.

CHAPTER TWO

Evolution of the Study and Literary Context

Lofland and Lofland (1984) emphasized that qualitative research begins with the investigator's personal concerns and involves determining what he or she cares about independent of social science. These authors stated:

Starting where you are provides the necessary meaningful linkages between the personal and the emotional, on the one hand, and the stringent intellectual operation to come, on the other hand. Without a foundation in personal sentiment all the rest easily becomes so much ritualistic, hollow cant. (p 10)

As one of ten graduate nursing students enrolled in the Uniformed Services University of the Health Sciences (USUHS) program's first class of military family nurse practitioners (FNP) graduating in 1996, this researcher finds the question of the role of the FNP within the military health care system is ever-present. While the role of the nurse practitioner (NP) in the provision of health care is variably defined (Garland & Marchione, 1982; Edmunds, 1978; Pearson, 1994; DeAngelis, 1994; U.S. Congress, OTA-HCS-37, 1986), the question of how the *military* NP will contribute became more complex as this researcher encountered the first operational readiness training of military FNP students. Medical readiness capability and function is a unique dimension of the military nurse practitioner role which must be considered now. Especially important in the era of a smaller, ready medical component is what will be the role of the NP? What unique training/learning opportunities must be capitalized upon in this rich environment

of faculty and expert individuals and resources? Because this is a new role, will FNPs be adequately trained for their specific deployment missions?

Personal experience with readiness training has demonstrated that the training received is not always consistent with the role assigned or bestowed by default during actual field operations. While similar occurrences are too often the rule and not the exception in nursing, any attempts to avoid such role strain should be embraced. Post-deployment stories regarding recent deployments raise the question how NPs will be able to contribute most effectively if their readiness role is not known, and thus, not practiced.

Oiler Boyd & Munhall (1993), authors of a textbook on nursing research from a qualitative perspective, say this of the review of the literature and the evolution of a study:

The literature review conducted to document relevance and significance also serves the purpose of establishing the historical, experiential, and scientific contexts of the study for the researcher. This acknowledgment is an aid to the researcher in bracketing assumptions and preconceptions. It is entirely appropriate for the researcher to speak of personal experience to illuminate his or her orientation(s) and process of getting started in this research project. Inclusion of such information contributes to the reader's understanding of the full context of the study's origins. (pp 437-438)

In this literature review, the relevance and significance of studying the role of the NP in medical deployment is demonstrated through use of role theory as the conceptual framework linking the primary care role of the NP to the unique deployment role of the

military NP in providing disease and non-battle injury (DNBI) care in the field. Hence, there are 5 major subdivisions of the literature review--role theory, the nurse practitioner evolution, primary care, the military NP, and DNBI. Each is discussed separately and then summarized.

Role Theory

Because of its focus on persons and their behaviors, role theory lends itself well to constructing a framework for studying the patterned behaviors, or roles of the NP in the deployment context. Role theory is “a science concerned with the study of behaviors that are characteristic of persons within contexts and with various processes that presumably produce, explain, or are affected by those behaviors” (Biddle, 1979, p. 394). The major thread that ties the legitimacy of the NP to a deployment role is the role of primary care provider.

Roles are not isolated phenomena. Rather they are meaningfully tied to those social situations that embed them and they produce consequences. Indeed, many roles are performed because people are motivated to behave in a characteristic way, and roles tend to interlock with others and are related to the general phenomena of social accomplishment. Roles, then, can accomplish functions.

“It has been observed that professional socialization . . . results in a less integrated self-image in those institutions that are in a state of flux and in those professions undergoing a transition in role definition” (Lum, 1988, p. 266). Nursing, particularly NPs, provides a classic example of a profession undergoing dynamic reconsideration of

its social role in health care provision. Deployment is only one of these social contexts within the military setting.

TRICARE, a DoD managed care program initiative, and the Air Force implementation of a new organizational structure, the Objective Medical Group (OMG), are examples of changes which challenge the role status quo. TRICARE is designed to improve beneficiary access to care, assure affordable and high quality care, provide choice, and contain overall DoD costs. Not only does TRICARE emphasize teamwork, but also boasts health promotion/disease prevention as the cornerstone of managed care. Fully implemented it will take military medicine from managing sickness to building healthier communities. The Director of U.S. Air Force Nursing Services, Brigadier General Linda J. Stierle, says this about the TRICARE impact on nursing roles, "DoD's TRICARE initiative offers new expanded roles for all health care personnel, in particular nurses, to influence positive outcomes for disease prevention, and health promotion" (Department of the Air Force, Health Programs, 1995).

The primary driver of the OMG is to improve the ways in which services are delivered to the customer and to put the Air Force Medical Service structure in line with our operational structure. It is a new way of aligning the essentials, required in our daily work, in order to deliver a quality service. While it is designed to facilitate quality of care and patient satisfaction through better support and communication between health care professionals, it also applies the "wrecking ball" to the stovepipes within the previous health care delivery system. The impact upon role foundations is significant. While this is at first unsettling, it lays the groundwork for establishment of new roles for

health care professionals working together in creative new ways. As the Air Force Medical Service transitions to the OMG, the transitioning of roles is evident. As of September 1994, 48 senior level nurses had been selected by their Medical Groups to be the first squadron commanders (Forty-eight nurses selected as squadron commanders, 1994).

The activities of health professionals must be based upon sound knowledge of the phenomena they confront in their roles in order to avoid sources of role problems. According to Brigadier General Linda Stierle, Director of US Air Force Nursing Services, in her presentation to the Committee on Appropriations (1995):

Our first priority has been and continues to be, medical readiness; it is job one!...The primary way we ensure a high state of readiness is by day-to-day delivery of nursing care. It enables us to hone existing skills plus stay abreast of new knowledge and rapidly changing advances in technology....This fiscal year, humanitarian missions and operations other than war throughout the world demanded significant health care support and utilized the multifaceted capabilities of the Air Force Nursing Services. (Department of the Air Force, Health Programs, 1995).

Given the current setting, it is imperative that we begin defining the role of the NP in military deployment NOW.

The impact of changing role definitions on socialization has received little study (Lum, 1988). Lum further emphasizes the importance of clear role definition in evolving roles: "Unless there is consensus and clarity of the norms, values, and behaviors

expected within the given profession, it will be increasingly difficult to socialize the neophyte into its ranks” (1988, p. 267). Without this consensus and clarity, the NP in deployment is subject to encountering numerous and varied role problems.

The role problems which may be encountered include the following (Hardy & Hardy, 1988):

1. Role ambiguity - vagueness, lack of clarity of role expectations
2. Role conflict - role expectations are incompatible
3. Role incongruity - self-identity and subjective values grossly incompatible with role expectations
4. Role overload - too much expected in time available
5. Role underload - role expectations are minimal and underutilize abilities of role occupant
6. Role overqualification - role occupant’s motivation, skills, and knowledge far exceed those required
7. Role underqualification (role incompetence) - role occupant lacks the necessary resources

As an example, if a NP is deployed to work as a charge nurse in the ICU, but has not maintained critical care and management skills, the resultant problems may include feeling incompetent and at the same time underutilized, or even overqualified. Role incongruity would be inevitable.

This study seeks to provide some of the knowledge necessary for satisfactory role evolution and definition for the deployed NP, with a goal of providing the best health care in deployment situations while escaping role problems.

Nurse Practitioner Evolution and Primary Care

The major impetus for the utilization of nurse practitioners stemmed from a reputed shortage of physicians to provide primary care to children and from nurses' frustration with poor access to care for patients (DeAngelis, 1994). The basic concept was that with more education and training, nurses could provide greater access to primary care for underserved populations.

In 1963, Siegel and Bryson reported that public health nurses in California had assumed much of the responsibility for scheduled health maintenance visits in the first six years of children's lives. Several other reports about the role of the nurse in providing primary care in the public health and office-based arenas were published during the 1960s (Ford, Seacat & Silver, 1966; Austin, Foster, & Richard, 1968; Skinner, 1968; Schiff, Fraser, & Walters, 1969).

In 1965, the first formalized training program for nurse practitioners was established at the University of Colorado Schools of Medicine and Nursing by Loretta Ford, Ph.D. and Henry Silver, MD. Ford notes that the primary care physician shortage was an opportunity and not the reason for development of the nurse practitioner role and that nursing and potential for meeting societal needs led to its further evolution (Silver & Ford, 1968; Ford, 1982).

Nurse practitioners have continued to provide care in the United States for more than 25 years. Evaluations of the care they provide are uniformly positive, suggesting that quality and outcomes are equivalent to those of physicians and in certain respects are superior (Clawson & Osterweis, 1993; U.S. Congress, OTA-HCS-37, 1986; Brown & Grimes, 1993; Feldman, Ventura, & Crosby, 1987). The literature indicates that NPs can substitute for physicians in 75 to 90 percent of primary care functions (Osterweis & Garfinkel, 1993; OTA-HCS-37, 1986).

Military Nurse Practitioner

The military services have been utilizing NPs (adult, OB-GYN, pediatric and primary care) for more than 20 years (Southby, 1980; Air Force Nursing Service Newsletters, 1973,1974; Wells, 1973; Maroon, 1976). Many of these NPs have been educated at civilian institutions or certified at service-specific courses; however, in August of 1994 the first class of 10 active duty Air Force registered nurses was admitted to the Graduate School of Nursing at the Uniformed Services University of the Health Sciences (USUHS) in the Family Nurse Practitioner Program. Upon graduation in May of 1996 the USUHS enrollees will have earned a Master of Science in Nursing degree. Graduate education was mandated in November 1992 when the American Nurses Credentialing Center announced that beginning that year, candidates for all nurse practitioner certification examinations must hold a Master's or higher degree in nursing (American Nurses Credentialing Center, 1992).

The drivers of the growing national movement in health care from acute-care settings to community and ambulatory-care settings, such as nurse-managed clinics, have

placed similar demands on the military health care system. In order to meet these demands, the Department of Defense (DOD), in the fall of 1992, received authorization and appropriation from Congress to design and implement a nurse practitioner program at the USUHS (Levine, 1994). The purpose of the program is to provide Federal services with qualified graduate NPs who are effective providers of primary care services (Gardon, 1993).

While the needs assessment for the uniformed services conducted by Levine (1994) demonstrates a requirement for advanced practice nurses in the military nurse corps which can be supplemented by the Graduate School of Nursing (GSN) at USUHS, it may not meet its full potential in preparing nurses for military readiness without a clear understanding of that role.

Primary Care

Primary care is “a person’s first contact in any given episode of illness with the health care system that leads to a decision of what must be done to help resolve the problem; and the responsibility for the continuum of care” (Booth, 1981, p.110). The Task Force on Human Resources for Health of the Association of Academic Health Centers (AHC) conducted a workshop in April of 1993 designed to address the current and future roles for NPs and physicians assistants (PAs) in delivering primary care services, the educational and practice environments that shape these roles, and the public policies that require attention if greater numbers of people are to have access to primary care services. The workshop brought together more than 35 health care leaders, policy experts, and analysts from academe, the private sector, and the government. Physicians

assistants, nurse practitioners and physicians were among the participants (Osterweis & Garfinkel, 1993).

From the discussions, several major themes that emerged and overlapped included: the interchangeability of roles and functions, primary care in underserved areas, educational reform, practice patterns, professional barriers, policy restraints, and consumer issues. Participants agreed upon the need for more information and recommended gathering *more data on health care needs* and the *health care workforce*. Additionally, there was agreement on the need for innovation and change in education and practice to respond to a reformed health care environment (Osterweis & Garfinkel, 1993).

The themes and research needs emerging from the changing health care environment in the process of reform, as summarized in this workshop, are not so different from those evolving in military medicine. This, again, substantiates the prudence of researching and meshing the *health care workforce* (medical readiness deployment teams) with *data on health care needs* (those requiring care in the field).

So far, this review has looked at the health care work force issue, addressing the evolution and legitimate role of the NP in the provision of primary care services. The final section of this literature review, DNBI, is intended to focus on the provision of primary care services in all types of military deployment.

Disease and Non-battle Injury

Disease and non-battle injuries (DNBIs) have historically caused more death during war than battle injury (Withers, Erikson, Petrucci, Hanson, & Kadlec, 1994; Korenyi-Both, Juncer, & Dellva, 1991). In a study examining annual training medical support, Korenyi-Both et al. underscore, from a literature review of several battles, that soldiers lost from disease outnumbered those wounded by a ratio of 3 to 1 or greater. According to the report on estimating DNBI and battle-reaction casualties in the U.S. Air Force, “past experience shows that the numbers of casualties due to disease and non-battle injuries and battle-induced stress are at least comparable with, and sometimes even greater than those for direct battle casualties” U.S. Air Force, HSD-TP-1991-0002, 1993, p.1). “When units move from garrison/peacetime environments to field/wartime conditions, disease and non-battle injury (DNBI) prevention becomes far more important and should not become secondary to casualty evacuation and treatment” (Withers et al., 1994, p. 39). In addition, the U.S. has traditionally been involved in providing humanitarian assistance to third world countries in the area of health care (Blount, Krober, & Kozakowski, 1991). This care is predominantly primary care.

The findings of these studies demonstrate the requirement for primary care and preventive medicine education and practices in the field. The authors of a study conducted on a combined humanitarian-training mission to Bolivia stated, “the broad spectrum of illnesses seen would not have been handled effectively if we had had no primary care physicians” (Blount, Krober, & Kozakowski, 1991, p. 251).

This review of the literature on military medical care provided during deployment targets recent deployments (after Vietnam), as the content of battle, preventive medicine, and health care have changed considerably over the past few decades. It is not intended to be inclusive of all possibilities, but rather, provides an overview of the nature of health care rendered in the field during war, humanitarian, and training missions. A pertinent synopsis of several articles follows. By describing each deployment mission individually rather than collectively presenting/comparing study data and findings, the reader is able to view the many varied and potential deployment scenarios and roles in which a military NP may be required to function.

1. Estimating Wartime Disease, Non-Battle Injury and Battle Reaction Casualties in the U.S. Air Force (U.S. Air Force, Materiel Command, HSD-TP-1991-0002), Human Systems Program Office, Human Systems Center, 1993):

This technical paper presents the deliberations and conclusions of a series of USAF expert panels convened to derive a methodology and data for predicting the likely number of DNBI and battle reaction casualties to be expected among USAF personnel during future wartime operations. There were 74 references available to the panels for conducting this study. Review of this impressive reference list reveals coverage of all three services, peacetime and wartime, and most theaters of operation from World War II onwards.

Casualties are described as being “serious” (or “slight” according to the treatment they need and where this is to take place. Specifically, “serious” is taken to mean admission for treatment at Echelon 3 or above, “slight,” to mean returned to duty from

Echelon 1 or 2. Normally the return to duty will be within 24 hours including, on occasions, a short convalescence in quarters. Table 1 represents the categories of slight DNBI casualties and rates (U.S. Air Force, HSD-TP-1991-0002, 1993, p. 36):

Table 1

Baseline Slight DNBI Rates

Category	Designation	Proportion of Total Rate	#/1000/Day
A	Respiratory	24%	4.3
B	Gastrointestinal	10%	1.8
C	Dermatological conditions	10%	1.8
D	Non-battle injuries	18%	3.2
E	Sexually transmitted diseases	2%	0.4
F	Psychiatric conditions	14%	2.5
G	Minor medical	10%	1.8
H	Minor surgical	6%	1.1
I	Climatic	2%	0.4
J	Eye	2%	0.4
K	Fever	2%	0.4
	Total	100%	18.1

Annex F of the report (HSD-TP-1991-0002, 1993, F-1), while too lengthy to include in this review, provides a detailed description of each of these primary care categories of DNBI. A brief summary of Annex F is provided at Appendix A as a reference to understanding and defining DNBI.

2. Operational Medical Support of an Aviation Brigade Deployed during Operation Desert Shield (Molloff & Lockrow, 1991):

This is a brief report on the medical support provided to an aviation brigade from September 1, 1990 to November 1, 1990, deployed during Operation Desert Shield. The brigade consisted of 1,400 personnel including attachments. Medical support was provided by 3 physicians, a physician assistant, and 24 enlisted personnel. The average daily patient workload was approximately 35 personnel or 2.5% of the supported population. Approximately two-thirds of the patients presented during regular “sick call” hours, and the remainder came to the aid station throughout the day. The general illness pattern is shown in Table 2. Each category of illness is described in the report and a summary of treatment modalities for each is presented. Nearly all fell into the category of “slight DNBI” as defined by the USAF expert panel examining routine and MOOTW deployment, receiving primary care therapies and return to duty occurring immediately to within 24 hours.

Table 2

Average Troop Illness Patterns

Illness	%
Gastrointestinal	25
Musculoskeletal	20
Respiratory/allergy	20
Heat casualty	20
Dental	5
Other	10

3. Preventing Disease and Non-Battle Injury in Deployed Units (Withers, Erickson, Petruccelli, Hanson, & Kadlec, 1994):

Lindsay (1992) reports that during Operations Desert Shield and Storm, DNBI rates were historically low because of a unique combination of circumstances such as good medical intelligence, sound preventive medicine (PM) policies, the presence of a modern public health infrastructure, the seasonal ebb of insect vectors, the religious proscriptions of the host nation, an extended build-up phase, and a brief ground combat phase. It would be naive to expect this combination to recur. Despite success against DNBI, sporadic outbreaks occurred when PM principles were ignored (Withers et al., 1994). Had ground combat operations been prolonged, DNBI may well have become significant.

The authors state that most DNBI are preventable, but many unit surgeons and physician assistants may not have had the benefit of preventive medicine training or experience. The purpose of the paper is to assist unit/flight surgeons and physician assistants (PAs) in organizing their thoughts and preventive programs by providing a comprehensive framework focusing on 12 concepts to ensure the health (prevention of DNBI) of their deployed units. This preventive medicine framework includes the following: Preparation for overseas movement (qualification to deploy), water, food, personal hygiene, waste disposal, pests, harsh environments, medicines and vaccination, sexually transmitted diseases, combat stress, non-battle injury, and surveillance. The medical conditions resulting from inadequate monitoring of these 12 areas are described in the article and are predominantly encompassed in tables I and II of this literature

review, underscoring the prevalence of DNBI during wartime and the subsequent requirement for a strong primary care and preventive medicine component in the field.

4. Female Health Care during Operation Desert Storm: The Eighth Evacuation Hospital Experience (Markenson, Raez, & Colavita, 1992):

Operation Desert Shield/Storm involved the largest number of United States female service members ever deployed in combat. More than 35,000 women were deployed to the combat zone (Hackworth D.H., 1991). Although female soldiers would be expected to have unique health care needs in such an environment, little has been published concerning women's health requirements during wartime.

To provide some insight on this subject, a retrospective review was performed on the Eighth Evacuation Hospital's inpatient and outpatient records (sick call, emergency room, and specialty clinics) during the time it was deployed in the Gulf War. Additionally, a survey was distributed to women presenting for routine redeployment physical exams. This information was used to help identify the health care needs of women during this prolonged deployment from January 7 to March 30, 1991.

During this period, female patients accounted for 25% of the total outpatient visits which numbered 6,358. Obstetrical and gynecological patients accounted for a total of 300 visits, or 19% of all outpatient female visits. The most common gynecological complaints included rule out pregnancy, pelvic pain, desire for birth control pills, and abnormal periods. A review of outpatient pharmacy records revealed that during the study period, 4,858 prescriptions were written, of which 432 (9%) were for gynecological

conditions. These included birth control pills, non-steroidal anti-inflammatory drugs, antibiotics, and topical antifungal agents.

As can be seen, female soldiers had unique health care problems while deployed in Operation Desert Shield/Storm. Many of these were preventable, and nearly all fall into the category of primary care.

5. Non-surgical Medical Care of Enemy Prisoners of War during Operation Desert Storm (Keenan, 1991):

This article, summarizing the non-surgical medical care of enemy prisoners of war during operation Desert Storm by the 300th Army Field Hospital, provides a description of the experiences and difficulties encountered in providing medical care for approximately 20,000 enemy prisoners of war. It provides an account of DNBI as already captured in the summaries above, with the addition of a major challenge emerging from the need for medical screening of each prisoner of war coming into the camp. The author states:

Each prisoner coming into the camp had to be screened medically. This was usually done when they were stripped and searched at the time of entry into the camp. The inprocessing process was very time consuming, making the medical screening aspect very inefficient. It was not clear from the outset whose responsibility this was and whether physicians or physician extenders could be used. When the hospital was tasked to provide this, it removed a significant amount of medical manpower from

other responsibilities. While not a major problem at first, it became a major problem once the ground war began. (p. 649)

6. Into Iraq, Nursing Organization in a Combat Support Hospital (Stowe, 1992):

The 47th Combat Support Hospital (CSH) was the first hospital to become operational in Iraq and, at the time of the cease fire, was the farthest deployed hospital in enemy territory (more than 100 miles). The nurses of the 47th CSH cared not only for Iraqi soldiers, but for wounded Iraqi civilians and, fortunately very few wounded Americans.

There were a total of 37 Army Nurse Corps officers assigned to the 47th CSH. Of them, 6 were operating room nurses and 4 were nurse anesthetists; the remainder were medical-surgical nurses. Medical specialties that deployed included trauma, thoracic, orthopedic, ophthalmologic, urologic, and general surgery, as well as pulmonology, internal medicine, and family practice.

From October 28, 1990, to January 1, 1991, the 47th CSH saw 3,261 outpatients, 509 inpatients, and performed 112 surgeries. Although a wide variety of illnesses were noted, there was a high incidence of asthma, dehydration, and diarrhea. On the surgical side, sports resulted in a high number of orthopedic injuries.

7. The Role of the United States Army Active Component Pediatricians in Operations Desert Shield, Desert Storm, and Provide Comfort (Pierce, 1993):

In this study by Pierce, on the role of the pediatrician in Operations Desert Shield/Storm, and Provide Comfort, he stated that all physicians had, at one time or another, general medical duties of routine sick call and health maintenance of their troops

(primary care tasks). Many had additional duties of training the enlisted medical personnel of their units in basic life support, resuscitation and stabilization, proper handling and care of nuclear, biological, or chemical casualties, as well as other military medical skills (education tasks). During Operation Provide Comfort, these physicians dealt with problems common to all refugee populations: exposure to harsh weather, lack of adequate food and water, inadequate sanitation, and diarrheal and other infectious diseases. These disease entities were also described by Withers et al.(1994).

8. A Comparison of MEDRETE Practice Content to U.S. Ambulatory Care

(Blount, Krober, & Kozakowski, 1991):

A U.S. military medical team spent 2 weeks providing medical care in a rural area in Bolivia during a Medical Readiness Training Exercise (MEDRETE). Records of presenting complaints and physician diagnoses were kept for 2,169 patients seen during the exercises. Patients seen in Bolivia were younger than in typical U.S. clinics, with 53% being less than 15 years old. Digestive system complaints comprised 35% of the visits. Diagnoses made more often than expected on the Bolivian expedition included gastroenteritis, peptic diseases, low back pain, and headaches. The team consisted of physicians, dentists, a veterinary team, nurses, corpsmen, and a preventive medicine team.

The major causes of morbidity and mortality in Bolivia are reported to be malnutrition, diseases of the respiratory and gastrointestinal systems, and parasitic and infectious diseases (Defense Intelligence Agency, Medical Capabilities Study, Republic of Bolivia, 1988, DST-1810S-355-88). Approximately two-thirds of Bolivia's 6.5

million people live in poverty, with nearly half of its population living in rural areas. Bolivia faces a large problem of reaching its medically needy population with basic medical care. A few such rural areas are fortunate to have volunteer health care workers in their community who have been taught some basic medical skills by the nearest medical professional.

The comparison of a MEDRETE practice content to U.S. ambulatory care demonstrated the influences of patient characteristics on supply and personnel needs. While the study specifically details the differences in the ambulatory populations of Bolivia and the U.S. and the resultant impact on medical personnel and supplies in this humanitarian training mission, the authors state, “the broad spectrum of illnesses seen would not have been handled effectively if we had had no primary care physicians.” (Blount, Krober, & Kozakowski, 1991, p. 251). Clearly, these Bolivian epidemiologic descriptors parallel many of those which drove the evolution of the NP movement in the US, beckoning the exploration of the deployment role for military NPs providing for humanitarian needs while acquiring training for wartime missions.

9. Supply Consumption and Disease Surveillance during an overseas Training Exercise in Southeast Asia (Lesho, 1994):

This is a survey of the most common medical problems and most frequently used drugs during a 6-week deployment of 1,159 troops to Khorat, Thailand, from April 21 to June 1, 1992, for a training exercise. The survey was conducted in order to assist future medical officers in planning for overseas deployment. The mission was to provide echelon I and II health care. Accordingly, they had a primary medical team that consisted

of one physician, two physician assistants, one licensed practical nurse, and eight medics. The author suggests at least one Nurse Corps officer and three medics be added to the team.

The report provides a table itemizing the most commonly used pharmaceuticals during the entire exercise period, all of which are commonly prescribed by NPs (M.W. Edmunds, Ph.D., Director, FNP Program - USUHS, personal communication, August, 1995).

Table III lists the incidence rate of the most common medical problems treated during the exercise period (Lesho, 1994, p. 54).

Table 3

Injury/disease Incidence Rates

Disorder	Number Afflicted	Incidence Rate
Injury/ortho	113	9.7
Miscellaneous	111	9.6
Diarrhea	70	6.0
Dermatology	38	3.3
Respiratory	38	3.3
Heat injury	22	1.9
Fever	4	0.4
STD	3	0.3
Overall total	399	34.4

Each disorder in Table III was defined in the survey report. While some of the terminology is different from that in Appendix A, which describes DNBI categories as defined by a U.S. Air Force expert panel, the disorders are very much the same. In determining the incidence rates, only first-time visits were counted.

10. Annual Training Medical Support for a Reserve Separate Infantry Brigade (Mechanized) (Korenyi-Both, Juncer, & Dellva, 1991):

“Military history shows that typhus, plague, cholera, typhoid, and dysentery have often predetermined victory or defeat, and have decided more campaigns than Alexander the Great, Caesar, or Hannibal” (p. 272).

The study emphasizes the readiness/preparedness of medical personnel given the belief that a critical starting point for analysis of medical treatment is the training readiness of the medical personnel at annual training. The purpose of the paper is to expand the literature by reporting on the medical readiness of a Reserve Separate Infantry Brigade (Mechanized) during annual training using data collected from four consecutive annual training periods conducted in the same geographical location and during the same season as the basis for the study.

One of the conclusions drawn by the authors is that utilization of the nursing pool (training support reserve hospital) can be very valuable in aiding units with staffing shortages as described by Bombard and Kennedy (1987). The brigade’s experience with the nursing pool was very positive. The nurses deployed to the various medical treatment facilities during Annual Training (AT)-88 and AT-89, and assisted in the accomplishment of the mission of the brigade medical elements by first providing medical care to military personnel, with a secondary mission of improving medical readiness by training the medics. “The training mission cannot be accomplished in a more effective way than with this ‘in house’ training opportunity to work with health professionals” (Korenyi-Both, Juncer, & Dellva, 1991, p. 276).

Summary

A review of the literature supports a legitimate role for the military NP in wartime and peacetime deployments. This role encompasses the NPs primary care function in the areas of assessing, evaluating, diagnosing, and treating general medical problems and minor traumatic injuries, as well as the utilization of well-established nursing skills as an educator in the areas of preventive medicine and readiness training.

The first four studies which are reviewed here clearly demonstrate an overwhelming need for primary care services in the field. The review, by an expert panel, of 74 references covering all three military services in peacetime and wartime and most theaters of operation from World War II has predicted the “slight” DNBI rates to be a significant contributor to deployment medicine (HSD-TP-1991-002). According to Molloff and Lockrow (1991), two-thirds of the patients seen by the medical team of an aviation brigade during Operation Desert Shield presented during “sick call;” a familiar area of military medicine already being met by NPs. Additionally, nurses have been vested in a preventive medicine approach to health care since the days of Florence Nightingale and are very familiar with organizing health care with regard to the preventive medicine framework to be utilized during deployment, as proposed by Withers et al (1994). Further, military NPs are currently providing the kinds of gynecologic care encountered by the Eighth Evacuation Hospital during Operation Desert Shield/Storm deployment; the largest number of US females ever deployed to combat (Markenson, Raez, & Colavita, 1992).

While DNBI is not the only type of casualty encountered during military deployment, the article by Keenan (1991) demonstrates a perfect opportunity for the meshing of professional strengths in the field. The task of providing screening and primary health care services to enemy prisoners of war became a major problem once the ground war began. Employment of NPs in this situation would have permitted increased focus on combat casualties while ensuring quality primary care for our own troops as well as the enemy and host nation. Similarly, the 47th Combat Support Hospital, the farthest deployed hospital in enemy territory in Iraq, cared for Iraqi soldiers, Iraqi civilians, as well as our own (Stowe, 1992). Outpatients outnumbered inpatients by 6 to 1, with the highest incidence of illness being asthma, dehydration, and diarrhea, all of which are commonly treated by primary care and family practice professionals, including NPs.

The humanitarian efforts which have been discussed, Provide Comfort (Pierce, 1993) and the Bolivian training exercise (Blount, Krober, & Kozakowski, 1991), illustrate the health care provided to individuals, including a large pediatric population, in rural settings--a traditional setting for NPs. The article by Pierce (1993) and Korenyi-Both, Juncer, and Dellva (1991) highlight an additional duty component for which NPs are qualified, the medical-readiness training of enlisted personnel during wartime, humanitarian efforts, and field exercises. Finally, the study by Lesho (1994), reviewing an overseas training exercise, indicates that the common medical problems treated during the exercise period are very similar to the DNBI seen in other deployment situations. Therefore, deployment for training exercises provides the ideal, real-life environment for socializing the NP to the deployment role in wartime and peacetime.

CHAPTER THREE

Method of Inquiry

Method of Inquiry: General

“Qualitative research is a systematic, subjective approach used to describe life experiences and give them meaning. Quantitative research is a formal, objective, systematic process to describe and test relationships and examine cause and effect interactions among variables” (Burns & Grove, 1993, p.777). Qualitative research enables examination of a much broader scope of dimensions than is usually possible with quantitative research. The findings may be intuitively verified by the experiences of the reader. The description of the study phenomenon can allow greater understanding and, thus, more control of nursing practice. Here, the unit of analysis is words rather than numerical values.

Quantitative observations, conducted in situations deliberately designed to ensure standardization and control, differ markedly from observations framed by the qualitative paradigm. “Qualitative observation is fundamentally naturalistic in essence; it occurs in the natural context of occurrence, among the actors who would naturally be participating in the interaction, and follows the natural stream of everyday life” (Janesick, 1994, p. 378). Hence, naturalistic observers differ from quantitative observers in the scope of their observation. These differences are rooted not only in variations between the ways they observe, but in the types of question they pose.

The qualitative researcher begins with the question: What do I want to know in this study? This is a critical beginning point. After this question is clear, the

methodology for proceeding with the research project is selected. Of course, qualitative researchers design a study with real individuals in mind, and with the intent of living in that social setting over time. This is in contrast to the quantitative paradigm, which is perfectly comfortable with aggregating large numbers of people without communicating with them face to face. So the questions of the qualitative researcher are quite different from those of the quantitative researcher (Janesick, 1994).

The purpose of the descriptive method is to investigate the background and environmental interactions of a given social unit. According to Burns and Grove (1993):

Descriptive research attempts to provide an accurate account or portrayal of characteristics of an individual, an event, or group in real life situations for the purpose of discovering new meanings, describing what exists, determining the frequency with which something occurs, and categorizing information. (p. 766)

This study is one of qualitative description with the purpose of eliciting and describing the role of the NP in military deployment. Qualitative research has the ability to provide reasons behind the choices which would be obtained through pen and paper questionnaire employed in a quantitative research design. One characteristic of qualitative design is that it is holistic. It looks at the larger picture, and begins with a search for understanding of the whole; it refers to the personal and immediate. It requires the researcher to become the research instrument. This means the researcher must have the ability to observe behavior and must sharpen the skills necessary for observation and face-to-face interview (Janesick, 1994). Qualitative design incorporates room for

description of the role of the researcher as well as description of the researcher's own biases and ideological preference. It requires ongoing analyses of the data.

The logic of qualitative research is best summarized by Munhall and Boyd in the textbook of qualitative research cited previously (Burns & Grove, 1994) :

The qualitative approaches are based on a world view which is holistic and has the following beliefs: (1) There is not a single reality. Reality, based on perceptions, is different for each person and changes over time.

(2) What we know has meaning only within a given situation or context.

The reasoning process used in qualitative research involves perceptually putting pieces together to make wholes. From this process, meaning is produced. However, because perception varies with the individual, many different meanings are possible. (p. 61)

This reasoning process can be understood by exploring gestalts, knowledge about a particular phenomenon which is organized into a cluster of linked ideas (Burns & Grove, 1994). A theory is a form of gestalt.

Method of Inquiry: Applied

Nursing is a humanistic profession which is committed to caring for all persons. In order to care in a holistic way, nursing seeks to understand the contexts and meanings of human experience. The qualitative research approach enlarges our view of the world by seeking to explain and understand the lived experience of people from their own unique perspective.

As described in detail, a descriptive-qualitative research methodology was applied in this study for the purpose of gleaning and analyzing the necessary data to describe the role of the NP in medical deployment. The source of data has been the participants' responses to the researcher's questioning through interview. An interview guide (Appendix B) was utilized for the purpose of indicating rather than prescribing how this researcher would direct attention to the research question in a given conversation as the course of the interview could not be predicted.

Subject Selection and Setting

A purposeful sample of 10 military NP participants, derived through network sampling, were interviewed. There were only two criteria for participation in the study. The participant had to be a military nurse practitioner who had been deployed for a health care mission (wartime or MOOTW). Network sampling method, sometimes referred to as snowballing, was utilized for locating a sample which would be impossible to obtain otherwise. Network sampling takes advantage of social networks. Because NPs are not deployed as such, a list of nurses who met the aforementioned criteria did not exist. This researcher originally identified 3 subjects meeting the criteria for participation. These subjects were asked for their assistance in contacting others who met the criteria. Additionally, key nursing leaders from the Air Force, Army, and Navy provided names of potential subjects. Obviously there may be biases built into this sampling process since the subjects are not independent of each other. While 10 participants were the desired number for this study, the actual number of interviews conducted was dependent upon access and subject to the researcher's satisfaction that the data was complete. Such

satisfaction is evidenced in qualitative research by “redundancy” or “saturation,” which occurs when an area has been exhausted--nothing new is unfolding in the continued analysis and comparison of data. This is experienced when the researcher finds no further explanation, interpretation, or description of the phenomenon under study by the informants.

First contact with the participant was conducted by the researcher or the referring individual at that individual’s discretion as to the best method of access. The researcher/interviewer telephoned the potential participant, explained the study, and scheduled an appointment for the first interview to be conducted at the participant’s convenience in their personal work or private environment as they preferred. After initial phone contact, a copy of the interview guide and a consent form (Appendix C) were mailed to the participants in advance of the interview for those individuals interviewed by telephone. For those interviews that were conducted face-to-face, the interview guide was telefaxed in advance and the consent form was reviewed and signed just prior to the interview. Due to geographical constraints, six interviews were conducted by telephone, using a speaker phone, and four were conducted as face-to-face interviews. Interviews were conducted in the homes and offices of the participants according to their preference and when uninterrupted time was anticipated.

The data generated during each interview was confirmed and validated with the participant throughout the interview, with ongoing analysis occurring with subsequent interviews. All data were further validated by an auditor reviewing the audiotaped and transcribed interviews, analyzing content and categories. Ongoing data collection and

comparison with multiple participants did not reveal a requirement for further validation with the participant(s) through use of a second interview.

Data Collection

At the beginning of each interview, an explanation of the study was provided. The value of the participation of the subject was communicated by the researcher to the participant, and an offer made to share the findings of the study with the potential participant. Confidentiality was assured with names and telephone numbers maintained by the researcher in personal field notes only. Although some of the information the research subjects provided is documented in the thesis conclusions, their names are not associated with the publication. Consent forms were reviewed with the participants prior to interviewing and will remain confidential.

Tape-recorded, open-ended, interactive interviews were conducted with each participant. Interviews were conducted in a quiet, comfortable setting selected by the participant. At the beginning of the interview the participant was asked to what location they have deployed and for what mission (wartime, peacekeeping, humanitarian, disaster relief, etc.). They were asked to discuss their role during deployment, and based upon their deployment experience to describe what they believe their role should be. They also were asked to respond to the question, if operational readiness training could better prepare you for deployment, what recommendations would you make? The participants were asked broad questions and encouraged to respond in narrative form. Reflective probing questions were, at times, required to enrich the description of the experience and to focus the interview. A pilot study of this data collection method was conducted with

three NPs in order to evaluate the appropriateness of the questions and the approach and effective communication of the interviewer in obtaining and recording data.

Data Analysis

Interview data were transcribed from audiotapes to facilitate the researcher's contemplation and later organization of the data during analysis. Field notes were maintained in order to record observations and to facilitate reflections on the research process. However, simply observing and interviewing does not ensure that the research is qualitative, for the qualitative researcher must also interpret the beliefs and behaviors of participants (Janesick, 1994). "As Erickson (1986) so eloquently reminds us, the use of qualitative techniques does not necessarily mean that the research being conducted is qualitative. What makes the research qualitative is a matter of 'substantive focus and intent'" (Janesick, 1994, p. 213).

The term researcher-as-instrument refers not only to the researcher's influence on what is studied and how it is studied, but also to the possibilities and limits of the researcher's sense-making in data analysis. Unlike the case in quantitative research, conclusions are formed throughout the data analysis process. Conclusions are similar to the "findings" in a quantitative study. Boyd and Munhall (1993) suggest the following strategies which were applied to the data analysis in this study:

1. Ponder the meaning of data in parts and as a whole and on repeated occasions
2. Search for repeated instances that support each interpretation.

3. Reach for complex interpretations to account for variations in the data; contradictions in the data sometimes call attention to contradictions in people's lives.
4. Use all the data available, including field notes, the literature, and any other sources of inspiration. Do not be limited to transcribed interview data merely because they seem more scientific.
5. Identify the technical aspects of data analysis. If data analysis procedures from one of the qualitative methods is useful, adopt it in the design.
6. Relate the findings to preexisting knowledge, keeping in mind that although the project may be an end in itself in some ways, to qualify as science, it must be entered into a dialogue with one's colleagues.

Because data collection is occurring simultaneously with data analysis, the process is complex. Therefore, the researcher is attempting simultaneously to gather the data, manage a growing bulk of collected data, and interpret the data. Qualitative analysis uses words rather than numbers as the basis of analysis. In the initial stages of data analysis, this researcher became very familiar with the data by becoming immersed or saturated in the data. It was then clustered. "Clustering is the process of sorting elements into categories or groups" (Burns & Grove, 1993, p. 576). Data were clustered once they were conceptualized as having similar patterns or characteristics and from them themes emerged. Implementation of the described qualitative methodology was mentored by this researcher's committee chairperson and an adjunct research faculty member as it requires a certain expertise to be conducted effectively. This method of

conducting qualitative research is strongly recommended by leading qualitative researchers as stated by Burns and Grove (1993):

Developing and implementing the methodology of qualitative research require a certain expertise that some believe can only be obtained through a mentorship with an experienced qualitative researcher. The role of the researcher and the intricate techniques of data collection and analysis are thought to be best communicated through a one-to-one relationship. Thus, planning the methods of a qualitative study requires knowledge of relevant sources that describe the different qualitative research techniques and procedures (Chenitz & Swanson, 1986; Leininger, 1985; Marshall & Rossman, 1989; Munhall & Boyd, 1986; Parse et al., 1985) and interaction with a qualitative researcher. (p. 706)

During this process, this researcher seems to have developed a recognition of significant findings as described to Adler and Adler in personal communication with Carol Brooks Gardner: "I look for the 'Click!' experience--something of a sudden, though minor, epiphany as to the emotional depth or importance of an event or a phenomenon" (Adler and Adler, 1994, p.378).

Reliability and Validity

Miles and Huberman (1984) caution that people easily identify patterns, themes, and gestalts from their observations -- almost too easily. In qualitative research, data are compared and contrasted again and again, thus providing a check on their validity. Any pattern that is identified should be subjected to skepticism -- that of the researcher and

that of others. The data from this study was reviewed for validity by an adjunct member of the research faculty, USUHS-Graduate School of Nursing. This individual is a doctorally prepared qualitative researcher with 23 years of experience in the Air Force as a registered nurse. Participants were also provided the opportunity to validate the interpretations of the interview interactions throughout the interview. The researcher would summarize and repeat the data and interpretations to the participant for confirmation.

Both qualitative and quantitative research are concerned with trustworthiness of a study and its findings. However, each approach has a different way of addressing this issue. Lincoln and Guba (1985) suggested terms, other than validity and reliability, that are more in keeping with the nature of qualitative research. These terms include credibility, transferability, dependability, and confirmability. A few methods for enhancing these qualities, described by Lincoln and Guba in their book *Naturalistic Inquiry* (1985), were utilized.

Credibility refers to the truth value or believability of the findings. Confidence in the findings was obtained through evaluator triangulation described above.

Transferability refers to whether particular findings from one study can be transferred to another similar context or situation. While qualitative studies, particularly first-time studies, are not as concerned about generalizability as in-depth understanding, transferability can be accomplished through thick descriptions of the data and purposeful sampling. As a first time study, transferability is not required; however, the extent of transferability of this study has been substantiated by the findings of Lukacik (1993);

McGlooin, Ballantyne, and Armstrong (1994); and Murphy (1996) through a study of Navy nurses which implemented written and audiotaped interviews, documentation of personal accounts , and the researching performed in order to communicate the role of the Federal nurse practitioner. Dependability, similar to reliability, addresses consistency and determining if the findings of a particular study would be the same if repeated. Confirmability of a study is tied to neutrality, establishing the degree to which the findings are determined by the subjects and conditions of the inquiry and not the biases of the researcher. Dependability and confirmability were secured via independent auditing by an experienced qualitative researcher and by “audit trails” (Lincoln and Guba, 1985) directly from the study participants. This involves restating ideas for confirmation and validation to those who have shared them.

CHAPTER FOUR

Findings of the Study

This chapter presents the results of data analysis. It includes a brief description of the sample and the findings which are grouped according to themes. The theme became evident from analysis of significant statements where redundancy or saturation were achieved.

Description of the sample

The sample consisted of 10 military nurse practitioners who have been deployed for wartime operations or MOOTW. This included three nurses from the Army, three from the Navy, and four from the Air Force. Two participants were male. Two nurses were deployed more than once, for a total of 13 deployment experiences for the total study population. Four of the nurses are Family Nurse Practitioners (FNP), four are Pediatric Nurse Practitioners, and two are Women's Health Nurse Practitioners (WHNP). The deployment locations and missions are described as part of the findings.

Findings of the Study

The findings of this study are presented in the following table (Table 4) in order to depict the deployment experience of the nurse practitioner in a concise format. Each theme category contains a brief description of the theme followed by examples of significant statements depicting each theme cluster.

Table 4

Categories of Themes and Theme ClustersTheme Category 1: Deploying to War and MOOTWTheme Category 2: Developing the Role

Theme Cluster 2A: Acquiring the Practitioner Role

Theme Cluster 2B: Delivering Primary Care

Theme Cluster 2C: Providing for Women's Health Needs

Theme Cluster 2D: Providing Emergency Care

Theme Cluster 2E: Educating Health Care Professionals

Theme Cluster 2F: Case Finding/Community Outreach

Theme Cluster 2G: Expanding the Role

Theme Cluster 2H: Case Managing

Theme Cluster 2I: Traditional Nursing Practice

Theme Category 3: Struggling with the RoleTheme Category 4: Implementing Our Nursing DimensionTheme Category 5: Officership/LeadershipTheme Category 6: Cultural DilemmasTheme Category 7: Lacking Preparation

Theme Cluster 7A: Lacking Field Training

Theme Cluster 7B: Trauma Training Benefit

Theme Cluster 7C: Training as a Group

Theme Category 1: Deploying to War and MOOTW

The participants have described deployment missions taking them to places all over the world from the playful setting of a boy scout jamboree to the heat of the desert under SCUD missile fire. The findings that follow will represent their flexibility and the similarity in their role whether deployed for humanitarian assistance, training or wartime missions.

Significant Statements about Wartime Deployment:

I was deployed at Homestead Air Force Base during Desert Storm from November 1990 through April 1991 to backfill the positions for the Active Duty that had gone to Saudi.

Our Medical Group was deployed to Zagreb, Croatia for a period of six months starting in February 1995 to August 1995. Our mission was the medical care and treatment of approximately 44,000 United Nations peacekeepers. Our mission was predominantly peacekeeping in a war environment.

I was deployed during the Gulf War, Desert Shield/Desert Storm and I was assigned to the US Naval Hospital Ship Comfort, USS Comfort. I was sent out in January 1991 and stayed there until the conflict ended in the beginning of March.

I was deployed first to the King Faad National Airport during Desert Shield/Desert Storm and that is in the middle of Saudi, right beside Arabia. We had moved several times to set up our air evacuation unit.

That deployment (2nd) was to Saudi Arabia, Operation Desert Shield/Desert Storm, and I was deployed from August 1990 until St. Patrick's Day of 1991. We were at Fleet Hospital 5, which was in Jubail, Saudi Arabia -- sixty miles from the front line.

Significant Statements about MOOTW Deployments

My second deployment was a combination humanitarian/training mission. We were doing a joint mission with the country of Jordan. They allowed us to participate and use their base while we provided a humanitarian mission with respect to assessing their children with regard to concerns that they had.

The next deployment was to Guantanamo Bay, Cuba for Operation Sea Signal, a humanitarian mission to provide care to immigrants from a variety of countries, primarily Cuba and Haiti, that were trying to immigrate to the United States.

I was to be a PNP for a humanitarian visit to Christmas Island, also known as Keratomati Island, about 1500 miles south of the Hawaiian Islands. After going on the mission, I now believe it was more of a training mission for training the medical team and the troops.

I was deployed to Ft. AP Hill in Virginia for the National Boy Scout Jamboree.

I was deployed on the USNS Mercy which is a hospital ship from February to July 1987 on a humanitarian mission to the Philippines and the South Pacific.

I was deployed to Haiti. I think it was a humanitarian and peacekeeping mission.

I was deployed with a Combat Support Hospital to Haiti to support the deployed troops and all the other multi-national forces plus the civilians that were deployed.

I originally deployed on the USNS Comfort. However, at that time we were also invading Haiti, so those of us with obstetrical skills were off loaded in Cuba to develop the women's health and entire OB program on the island for the 55,000 refugees.

Theme Category 2: Developing the Roles

This theme presents the evolution of the nurse practitioner role. It does not represent every role in which the nurse practitioner engaged; there were others that emerged but weren't represented by redundancy. This section describes how the nurse practitioner acquired the provider role in deployment as well as the many clusters depicting the role.

Theme Cluster 2A: Acquiring the Practitioner Role

Significant Statements about Acquiring the Role

I was placed in the ER to work as a staff nurse. After a couple of days, I had asked the Chief Nurse if I might work as a NP on my days off and the more they looked at that they felt that they would better utilize me full time as a NP in the ER, and so that is what I did for almost the whole time. It took about 3 weeks to get my credentials in order.

I actually went over as a staff nurse, but when they found out that I was a nurse practitioner, I worked in a NP role in the ER, so it worked out pretty well.

I was called by Pacific Command and I was asked if I would like to go to Christmas Island as a NP and take care of the indigent children down there.

What they asked for and what they got with me were two different things. We were literally meeting in the ER with the Head Nurse, trying to figure out who was going to work when. The company commander came and called me out of the group and said he didn't want me to do what nursing wanted, but wanted me to see patients as a primary provider. So, right in the middle of the meeting I had to go back to the group and say I am going to be working as an NP in the ER

There were six or seven PAs and two NPs. There were no billets for the nurse practitioners, but the PAs did have billets. I was lucky enough that half of our pediatric department was deployed there and my department head lobbied for me to work as a provider. Otherwise, I would have been either a staff nurse or a charge nurse.

My actual role was as a ward nurse on the Intermediate Care Ward, but I had the opportunity, out of persistence, to work in the Emergency Room with the EMT as a FNP with a physician.

At about week 4 of the deployment, they started giving us a couple of days off. I was still a fairly new graduate and I wanted to keep up the skills that I had worked so hard to obtain, so I went to the chief nurse and I told her that I was willing to not have any days off if I could work in the ER as a NP. I told her for me to keep my mental health up, I wanted to practice as a FNP. But, the 28th wouldn't let me go. The PAs were drowning out in the aid station, working around the clock and the physicians were in full support of my effort. So, I was allowed to work in the ER one day a week.

Theme Cluster 2B: Delivering Primary Care

Throughout the study, numerous accounts of primary care populations were described. One hundred percent of the participants report encountering primary care as a large component of the nurse practitioner role in military deployment in both MOOTW and wartime settings.

Significant Statements about Primary Care

Whoever came in, the nurse would triage them either to me or to the physician and I would just take care of whatever came in, mostly it was basic, acute types of things.

I functioned as a nurse practitioner utilized in primary care during wartime deployment. Ironically, in the Reserves, I have been told all along that there is no position for nurse practitioners in the Reserves... We can take care of patients with chronic and acute needs, freeing up physicians for more technical needs or wounds.

I did primary care. We saw everything from the common cold to some weird diseases. We had malaria, we had injuries related to mines, and we had people shot by sniper. So, it was a wide variety of emergencies plus day-to-day primary care.

I was very comfortable seeing patients in the way I saw them in the ER, evaluating people for sick call and also being used in the Emergency Room as part of the trauma team.

My part was to care for the refugee children and babies. The work was almost like what we do in the states just under different conditions. We had well baby clinic, sick children, and did some preventive things. I think our role should be to work collaboratively with the doctors and nurses, as it is here at home.

We trained a lot for mass casualties but never received any other than the couple from the Iwo Jima incident. I volunteered my time in sick call but wasn't utilized. Sick call was fairly busy with dehydration and routine sick call type problems. The weather was so warm and people weren't aware of how easily they could become dehydrated.

There were a lot of common kinds of injuries during Desert Shield in preparation for Desert Storm where there were sports injuries, normal illnesses, STDs. It was that period of time that convinced me that maybe we are not looking at the role of the NP enough with respect to deployment for wartime scenario issues.

I was able to observe first hand the needs of primary care that were not being met because everyone was so focused on the wartime casualty role.

On ship, between ports, I was a NP and would pull twenty-four hour military sick call duty.

There were two NPs deployed with this mission and the role of the nurse practitioner was indistinguishable from the physicians. It was an interesting whirlwind of cursory kinds of screenings, spending approximately 5 minutes with each child. There weren't a whole lot of illness kinds of identifications, there was mainly a lot of congenital, environmental hygiene, dental health, and nutrition issues.

Our role in the interim political decision making process was to provide primary care to these groups of people, there were actually two categories, the Haitians and Cubans.

I was able to handle what came in without any problem and the docs were left to other more intense duties, especially in the ICU, we had a couple of fairly severe asthmatics and so forth, requiring more intensive follow-up. I was left to the regular stuff that came into the ER. I saw appendicitis, asthma, the chicken pox group, diarrhea,

vomiting, mononucleosis, colds and flu, and many small lacerations. If we could have used 2 or 3 more of anything, I think it would have been primary care NPs or physicians to lighten the load. The need for primary care in deployment has been demonstrated, it would be foolish to be used in any other fashion.

I was a PNP at the time. We would evaluate Philippine children that had many chronic diseases, such as TB, TB meningitis, infectious diseases such as schistosomiasis, measles, parasitic infection, a lot of dehydration, a lot of severe anemia. One of the main goals while I was there was to give immunizations. We did a lot of de-worming, a lot of hydration, and transfusions.

Because of the environment, I saw a lot of sinusitis. I saw the typical acute minor illnesses; costochondritis, a couple of pneumonias that we admitted, gastroenteritis, a lot of dehydration.

In addition to providing OB care for the refugee population of about 55,000, including every woman having a medical history, physical exam and all the necessary lab work that we do in the US, we were also responsible for the health of the crew who were all civilians. Those mariners were over the age of 50, obese, smoking, drinking, many, many chronic diseases in various stages of management.

Theme Cluster 2C: Providing for Women's Health Needs

Significant Statements about Providing for Women's' Health Needs

Whenever women came in with any problems, we had this tiny little GYN room in the ER and people would always call me.

There are a lot of women troops out there now and whether you are a WHNP or an FNP, I really think they can be utilized with sick call and just trying to do some routine health maintenance. Six months is a long time to be on a ship or overseas. There was an OB/GYN doc on the ship and I offered my services, but he wasn't too happy about being there, but he didn't want any help. I know from talking to other nurses and women on the ship, that they would have appreciated a female provider, but that was discouraged.

I was deployed as a flight nurse and of course most of my colleagues were women, and big issues with respect to women's health were absent. They had a lot of problems because they didn't have providers, people to address those issues at a variety of locations when we moved around.

One of the things that I did more than the physicians is that if there was a female patient coming in the door with a GYN problem, they wanted me to do that, they didn't want to do it. We had to treat everything empirically because we couldn't do cultures.

Then we started doing GYN and contraception. I did more DepoProvera than I have ever done in my entire life.

Theme Cluster 2D: Providing Emergency Care

Many of the participants described their comfort and discomfort with their role in emergent care. This will be better reflected later in the report of findings which discuss a perceived lack of training. This theme cluster demonstrates wide utilization of the nurse practitioner in trauma care.

Significant Statements about Working in Emergency Care

I worked as a NP in the ER. If there was anything life-threatening, then the physician would take care of them, although I would often be the first one to see the patient and would consult with the physician immediately and take care of the patients, but I really functioned as a provider, taking care of just about anything that came into the ER.

What I did on a day to day basis was that I worked in the ER, I did a lot of sick call. We usually saw between 40 and 50 patients a day during sick call.

Maybe the most severe situation should be handled by the doctors. In most cases (emergency) I think we should work along side them and look to them for support and then we should be able to carry more responsibility or even greater responsibility; we should be willing to do as much as we can do to work with them and share the work.

There were approximately 250,000 people. It was August and very hot. The services we provided were Emergency Room care for acute minor illness, sick call, ACLS (Advanced Cardiac Life Support).

During casualty events, the NPs were also slotted as triage officers in casualty receiving.

I saw orthopedic injuries like ankle sprains. I actually triaged a couple of MVAs. The physicians wanted me to do primary, secondary survey and then tell them what I thought we should do. There was a lot of education. I had done triage before but never where it was up to me to decide if they were going to go or whether to order a C-spine on this patient. I never was the one standing there making those decisions. Before, I would

be standing next to the person making the decisions. The physician was there if I needed him, but he wanted me to do it all, and I did.

Theme Cluster 2E: Teaching Other Health Care Professionals

Significant Statements about Teaching Other Health Care Professionals

It was an excellent opportunity to really practice some preventive issues, to identify public health issues, and to do some teaching and educating of local health care providers in the country.

A huge role that we, the NPs, were involved in was teaching the Cuban medical team how to take care of infants and small children, addressing the assessment of the neonate and what kinds of problems they can get into in those conditions, nutrition, breast feeding, things of that nature. They, in turn, were able to go out through the camps and to help the mothers.

The health care that they had there was provided by a midwife in training from Fiji. After her one year internship, she went back to the Fiji Island. I taught her a lot about wound care, medicines and vitamins.

We taught some classes at the local universities and we just don't know if we really helped as much as we wanted.

We were tasked to be the trainer for all these different endemic diseases and readiness-type issues and that was difficult for us because we didn't feel like we had been properly trained. We taught the corps staff, other nurses, and people from different areas that were not in direct patient care areas, like lab and pharmacy personnel.

It got to the point that they (translators/host medical professionals) were well enough trained and had been so much a part of us over the six months that we could say, Sergio, I want you to talk to her about DepoProvera and he would.

Theme Cluster 2F: Case Finding/Community Outreach

Significant Statements about Case Finding and Community Outreach

So I had a plan, but I didn't get to stay there long enough to carry it out. I was going to take an interpreter back into the camp and try a different system with the well babies by making a list of all the babies...

A Navy NP and myself were working on this whole project of trying to look at the population of pediatrics. We were not getting any support from our medical colleagues

because their idea of how to do this was that they were here, they had a clinic and appointments, and if patients showed up, fine. We, as NPs, were trying to manage the population, looking at it from a wellness, health promotion, community health, and public health point of view. I was sent to provide primary care in the clinic, seeing appointments, but my physician colleagues were doing that.

The flight surgeon and Military Public Health were looking at hard issues and they are hard issues such as sanitation, water, and food, and that's about as rudimentary as they got because those are such difficult issues to address. There was a void, a nursing void, quite frankly. There was basically a void in assessing the population and seeing exactly what their needs were, in addition to the overall needs of just day-to-day sustenance like water, food, and housing.

One of the things that we did find on this mission, is that they should have been checked beforehand. The natives would just line up waiting to be seen, whether they had a problem or not. It would have helped to have someone from outside to assess them. A lot of what we did was to assess what would be helpful to the people on the island, like maybe bringing in certain other foods. I recommended bringing in vitamins and iron for the children and immunizations for the children.

The Air Force obstetrician said he would not provide care in this setting. So when we came in, he was elective surgery at the Naval Hospital and nobody was providing any OB/GYN care to the Cuban population. So the first thing the four of us had to do was find who these pregnant women were. Those of us with a community health background had to figure out how to go about doing that. We used the Chaplains as our access point to get into the camps. The first week we were therein the camp, we identified about 200 pregnant women. By the time we left, there were an excess of about 600.

Theme Cluster 2G: Expanding the Role

Significant Statements about Expanding the Role

I learned to suture while I was there, since then I continue to do a lot of minor surgical procedures and suturing.

IDMTs and NPs worked the night shift, we usually didn't have physicians in the tent. Our living facilities were about a 5 minute walk from the MASH unit. Physician back-up was available by radio. Our role was somewhere between the physician and the IDMTs. As far as the role of the physician, there was very little for them to do except when we had mass casualties or we had a big trauma case.

They told me that I was just going to be doing pediatrics, but I saw all ages.

The dentists were swamped. They got to be so busy that the dentist taught us how to pull teeth.

Because the GMO officer was brand new out of school, I ended up being the person who she deferred to most of the time, so I ended up being the source of medical care in the Emergency Room. I also had admitting privileges to the wards.

That (running a code) was probably the most I was asked to do that was really beyond my normal scope of practice.

If we had really gotten overwhelmed with admissions, the PAs and the two NPs were slotted to become ward attending. In fact, several times when I was there, I was able to help out the ward charge nurse with writing some prescriptions for medications that were needed and I would just tell the physician in charge of those patients that I did that and he said fine, thanks for helping.

The physicians let me admit a couple of patients and the next day I went and took care of them. The surgeons would push me further than anyone else to do minor surgical procedures. They wanted to teach and it was neat. I removed a couple of foreign bodies, a thrombosed hemorrhoid, and did some suturing.

The NPs were assigned to the medical directorate and located physically in the military medicine sick call arena. Our operational assignment was to run sick call for the ship and to be the ward medical officer for the medical wards that were projected to take disease and non-battle injuries.

Theme Cluster 2H: Case Managing

Significant Statements about Case Managing

We treated illness and we sometimes referred them to specialists. Sometimes we would start making recommendation for them to go to the states. There was a group of doctors from Miami Medical and other groups with political agendas referring the immigrant to the US for care. We had an idea of whether they really needed to be referred back to the states or not, and we wouldn't refer them if we didn't feel like they needed it

We did our own health assessment, sent it up through the Command, and impacted the decisions that were being made about prioritizing the immigration of the children to the US. We ended up writing the prioritization recommendation for which children and families should leave first based upon risk.

There is one other thing that we should be doing, and I know it is a hot issue, that's the case management role out there in deployment. There is a care coordination thing going on out there and I think the NP is uniquely qualified to do that because they understand and have that depth of knowledge about the process. They have the knowledge base about what services are probably more appropriate and can speak to providers because they are one themselves.

Theme Cluster 2I: Traditional Nursing Practice

Significant Statements about Providing Traditional Nursing Care

During the first of my deployments, I was a general duty nurse, a flight nurse.

I understood that I would be a nurse practitioner and take care of the kids. I was the only nurse on this mission so the people kept calling me the chief nurse. The other provider was a physician and they didn't ask him anything.

I want to interject this because I had not worked as a ward nurse for twelve years and I was full of anxiety about being a basic nurse. It took about one day of orientation and it was like I was back. It was not hard to do. I took report, assessed patients, gave them medications, called the doctors as needed, took off orders and followed orders, drew blood and started IV's, and reported off.

Our supply of medication was adequate, but we had to mix our own, that was different.

I worked as a staff nurse in the ER, just as any other nurse; triaging and taking care of patients.

There were six nurses in the ER. I was the only NP. We were also assigned to trauma teams and that job varied from being the medication person to the IV nurse to the airway person.

I was assigned as a ward nurse to the only ward open on the ship at the time for post-op. Patients and medical patients, and for various units throughout the Gulf who needed surgery or more intense medical attention. That was my first experience as a staff nurse in the military, which meant I supervised a lot and didn't do so much hands-on.

Theme Category 3: Struggling with the Role

Significant Statements about Role Problems:

I had just graduated about 6 months prior to being deployed and I didn't want to lose the skills that I had by reverting to strictly staff nurse duties for up to 6 months.

It was very uncomfortable to have been a provider and then all of the sudden now you are back to being a staff nurse. It was hard for me sometimes to differentiate when I worked in the ER as a staff nurse, knowing that I had been a provider, I could have done a lot of things. Sometimes it is hard to remember where the boundaries are. Also, I am just not as qualified. Right now I couldn't go back into critical care and work, it's just been too long.

The nurses had to go to 12 hour shifts when I was pulled to work as a provider. It is not unusual to have 12 hour shifts, but I actually got the short end of the deal. Initially, I think, they thought that I was getting away with not having to work overnight, but I think they quickly realized that I had been put into a more demanding role in terms of time commitment...My work days could be 20 hours. For instance...

It is not that nursing are bad people. I think we have different agendas, we speak different languages, and have different needs. That's been the hard thing. So with all this deployment business, I think they honestly sometimes don't know what to do with us.

My relationship with nursing was a little testy for awhile. It was unfortunate. I had more on my side than she had on hers (Chief Nurse). She probably hated me quite much after that. The department head and director of medical services were very much in support of me as a nurse practitioner and they overruled her saying that I'm going to lose two nurses that way. It might have changed had there been a lot more inpatient numbers.

During the deployment, when the hospital bed number was cut in half, the physicians wanted me to work more in the EMT because they knew that's what I wanted. But the nursing staff wouldn't let me do that. Then I got to work two days a week as an FNP in the ER.

I spent a lot of time educating nurses about what NPs do. My head nurse had a problem with me working part time as a provider. She didn't approve of it, but everyone else was supportive, including the chief nurse.

Someone like myself who last was considered a regular nurse back in 1983, I have lost a lot of nuances that the practicing nurse has. I don't understand about following orders, I don't think like that anymore. I can't think like that. I think you would have to train me, retrain me in several things.

I spent a lot of time being frustrated because I felt that I was being underutilized. I was very frustrated because I didn't get to use my brain.

Theme Category 4: Implementing Our Nursing Dimension

Significant Statements about Nursing

They are knowledgeable about our descriptors, but they really don't understand the role of the NP, our essence of ability. We are viewed as PAs or physician extenders, as substitutable, and the essence of what we bring from the advanced practice role, the nursing aspect is missing, so that contribution is something that is yet to be utilized. People haven't really looked at those additional skills that Masters education brings to the role and how they can be applied in wartime and peacetime scenarios, such as globally looking at things, having the ability to do research, how to manage large populations, how to advocate for populations, the caring role with respect to different cultural presentations.

We are more geared toward looking at the whole picture and the entire patient better than a lot of people do and we're concerned with how the individual is doing aside from the pneumonia that they have. I think we do that well in any setting, whether or not it is an operational or an on shore setting. We can provide that in a deployment setting.

In so many deployment situations, there is a whole lot more to it than treating and streeting, certainly a lot of the humanitarian missions. We have the ability to do so much more than just look at the medical side or just be the nurse, but to see through a whole spectrum of the care of the patient.

We had to see the person as a whole person because they were going back to a barracks or to a cot. So if you didn't really look at them and figure out the whole big picture, maybe the problem wasn't what they presented with.

Physician assistants are often deployed when we aren't and that's because the medical side is more attuned to that kind of thing than the nursing side. Physicians assistants would balk at this, and it is not true for everyone, but I think we offer a deeper depth of knowledge and scope of practice and that extra nursing dimension.

Theme Category 5: Officership/Leadership

Significant Statements about Officership

The people and young troops preceding me in the deployment were terribly burned out. I felt that part of my mission there was to encourage other people there and that is what I did.

I think that the younger folks needed just a little more direction. When we are deployed as officers, we need to have more officership and officers need to know what their role is in deployment, because it is a lot different.

The story goes that a FNP was deployed and was so unhappy and felt so very underutilized that they sent her back early. I was told that I would operate as a NP on the ship. When I got there I was told that they were not expecting a NP, that they had just sent a NP back, and that there was no place for a NP there and that I would have to work on the ward. I figured that I'm commissioned as a Navy officer and I would work on the ward if that was what they needed for me to do.

I have to say that the other side of this whole piece too is officership. The people just didn't have the discipline that I felt was really necessary to be examples to the troops.

The only other thing that I would add is that I think the NPs are nurse leaders. We are role models for other nurses. They may be more likely to approach us about something clinically than they would the medical director or the family physician, creating a better team.

As a nurse practitioner, you are going to find you are going to be the leader and the manager, so you need to go to deployment with an open mind, not thinking that you are solely going to do practitioner work and just be a primary care provider. You will be the staff nurse or the chief nurse, the officer, the one in charge. You will be the one in charge of setting up the hospital/clinic, being the administrator, and considering sanitation issues. You will always be the jack of all trades and they will expect that of you.

Family practice docs and PAs were deployed with us. I think being part of team, we should go too. We are part of the service and that is part of the service agreement. I guess if you get down to the nitty gritty, if you signed on the dotted line and that means service to your country, if service to your country means you will deploy and support the fleet, then you go. I think that we are just as trained as anyone else and I think, why not go?

Theme Category 6: Cultural Dilemmas

Significant Statements about Cultural Sensitivity

One translator said, I know these people and they are not going to leave unless they have some medication. I wouldn't do this all the time, but in that case, the little girl looked healthy enough and we checked and she didn't have any chronic problems, so I

went ahead and gave her a dose of Maalox. He could tell by her that she wouldn't be reassured without some kind of dose of medication.

It was very difficult for our host physicians to understand how a nurse could be doing this. They had no concept of the nurse practitioner at all. You have to be very aware that the rest of the world is not moving along with respect to the role of the nurse practitioner.

The female practitioner had to wear the clothing that was necessary for women to wear in that particular religious climate and it was an issue as far as some of the boys that we saw that they were being seen by a woman because that was a real cultural issue to have to broach.

We had the American conceptualization that all we have to do is set up our hospital and say we are open for business, we have appointments, come and see us. That did not work.

If there is anything that I want someone to get on being deployed, this is the issue. People did not respect the cultural orientations of the people we were caring for. I heard the conversation numerous times in the emergency room and various clinics, that these people are "thugs" and they would say to their face, "I think you are lying." I can't tell you how many times I had to give direct orders to med techs who were basically giving patients a hard time about accessing our health care system instead of trying to solve the problem. There was a total disrespect for cultural differences. I saw a real lack of ethics in medical practice, nursing practice, and med tech practice. I had real difficulty with this and tried to address it in my role. The ethics issue is one that I think was my biggest take home message; the lack of transcultural respect.

This was a very male dominated society. The best fisherman was the assistant leader. Nobody spoke English. I had to communicate through signals. You would be surprised that you can do it okay. Let me go back to their mealtime and then you can relate to how that affected who you would care for first. The elderly eat first, then the male hunters. What food was left went to the women. Then the last that were fed were the children. It would be very hard, I would be checking a woman out and all of the sudden she would get a slap on the shoulder and the man would sit there. Now, I tell you what, that's their custom, and the woman does not want you to interfere.

I would try to explain and demonstrate how and when to take a medication, and the next thing you know, this bottle would be passed around so the other natives could taste it.

There were so many different dialects in each town that the translators eventually would answer the questions before they would even ask the patient. A lot of times we weren't even sure what the patients had.

IUDs were a form of birth control used in Cuba. Women have no choice about whether or not they got them, they just got put in. They all had a great many symptoms that relate to the IUD and they all wanted to have their IUDs pulled out. There also was the rumor going around that if you got pregnant that you got to go to the US, so we negotiated that we would pull the IUD if they would take Depo shots.

Abuse is an accepted form of family management in Haiti. Well, rightfully so, one of the NPs felt that was not acceptable. She began to work with the women to be more assertive. However, it worsened the abuse cycle.

Theme Category 7: Lacking Preparation

Many participants provided significant statements about the inadequacy, frequency, and content of medical readiness training. Many of the following statements were made in response to the question, if medical readiness training could better prepare you for deployment, what recommendations would you make for training education/exercises?

Theme Cluster 7A: Lacking "Field" Training

Significant Statements about Lacking Training

We all need operational field experience, C4 or something, and to be ACLS and ATLS trained. Until you have used a porta potty and eaten MREs and lived in a tent and slept on one of those horrible cots, living in the same pair of socks and underwear, you think of it as, you couldn't possibly be serious, situations. Forget about privacy, who worries about privacy, you just want to get clean underwear on. We were all feeling sick and realized that we weren't eating or drinking in order to avoid all of that. We were literally dehydrated.

I believe the main thing is they need to do it more often. I am only required to do medical readiness training every 2 years and that is simply not enough. In fact, I have never had any kind of gas mask training until I was deployed during Desert Storm. I think we need it at least yearly.

Readiness training needs to be done with more regularity. Certain items are required annual training from ethics issues, Equal Opportunity stuff, but I have never experienced annual medical readiness. Is it part of our annual training or is it not?

Part of the training that we got was learning how to put a gas mask on, on the plane on the way over. So, a lot of us had no training prior to that at all.

I think training needs to be on a routine basis, maybe one or two weeks out of every year, every person in the military would have operation readiness in some respect.

Our main goal is to support the fleet, but a lot of us now are deploying with the sailors. We need more ship training, I mean there are those of us who have never been on a Navy ship. Maybe one day a month or one day every six months just to get reacclimated.

As much as I wouldn't like to do it, just having to train for longer periods of time. When we have our two days of CMRT training, probably have more of it and actually having patients there because when the NPs ahead of me went through the hardship of having to move the tents and supplies, they also had patients at the same time. I think it would help to have more practice with more patients.

I guess if I had just had a little more practice at managing setting up the place it would have helped. I had been out on field training exercises where the hospital would already be set up and organized.

I think for an OB/GYN NP, triage and casualty receiving is incorrect. That's what was happening. I didn't feel comfortable with having no trauma training at all. I can understand how a NP can be a triage person because we have assessment skills, but I still felt uncomfortable being the main medical officer on a team. I didn't think that was an appropriate use without training.

I just did mobility training last week and all we do is go out and set up tents and that is where mobility stops. We really don't look at where the rubber hits the road in getting large numbers of casualties, different kinds of scenarios, right in the middle of all these casualties having to move, looking at how your casualty flow is going, we just don't train enough with that mode.

I would like to see them continue to do a lot of things in the field. We just sit around and read books...it is not really educational to me. I do think the gas mask training and that type of thing is important. Even if you are never actually exposed to that, you can understand what your patients may have gone through.

I really think we ought to be more prepared. I am so busy seeing patients, I don't have time to go away for two week to a fleet hospital course, unless somebody really makes an effort to make the time, but it is really not built into our practice or expected of us and not encouraged. Yet, if war breaks out, like I experienced, you go.

Theme Cluster 7B: Trauma Training Benefit

Significant Statements about Trauma Training

I think the trauma training, the Trauma Nurse Course, is definitely needed. I think that the Air Force should look at that when they are deploying people. Whenever we had a mass casualty, all staff would have to come to the ER and fill in wherever they could at trauma tables. It came to me that the Air Force should make that a requirement of people being deployed.

I think we should all have more knowledge of mass casualties, deployment platforms, that kind of thing. I guess I am focusing on my experience in war, but you have to be prepared for disaster at any time. I really think if I had been a little more prepared, particularly for receiving casualties, then I think it could have been a little bit smoother emotionally and mentally while I was there.

There are folks that deal more with adult health or have more of a critical care background, but if we all had trauma training, we could do it.

We all had assignments when we would do mass casualty drills, I felt pretty uncomfortable with that because I had no trauma experience, I had no training as far as the wartime medicine.

We structured our mobility training based upon our Desert Shield/Desert Storm experiences. I made sure that every med tech was an EMT, every nurse had some sort of training with respect to critical care, trauma, and we got people trained and sent to ATLS (Advanced Trauma Life Support). People just weren't prepared for trauma. I think every nurse needs to be ATLS trained.

We have been shut out of certain training like air assault and ATLS. I have been turned down several times because I'm a NP. They have no NP slots.

I think that if there is any risk of being deployed to a war or conflict area, the provider should go to combat casualty course on a routine basis.

One of the courses that they gave over there was ACLS, so I took it while I was over there. If they are going to make us be providers in an operational setting, then make it mandatory for us to take trauma training and ACLS.

I think that if you are going to work in the dual role in the EMT which I think is a place for the NP, you need to have ACLS, ATLS.

Theme Cluster 7C: Training as a Group

Significant Statements about Training as a Group

This piecemeal kind of deployment and re-compositing groups in the field just makes no sense at all. If you train together, you are more likely to have success if you know your people. That includes support units as well as medical personnel. For instance, the supply or CE types of people who can do those things that they do or at least give you some guidance on how to do it. This allows the medical people to be more focused on the education training that is needed prior to accepting casualties and to train for different scenarios. That was absolutely not done at all.

You know, it's hard to assign them different jobs and duties when you don't know them. I had never met them. It would be nice to meet who you are going to be with and know what their roles are. It would be nice if before you deployed you could kind of get together as a team. I heard that happened in Desert Storm too.

For deployment perhaps we could do more training with the actual staff and hospital.

CHAPTER FIVE

Conclusions and Recommendations

Discussion

In the past 200 years, from the Revolutionary War to Operation Desert Storm, more than 2 million women have served in the Armed Forces; until recently, most of these trailblazers were nurses (Vaught, 1994). Nurse practitioners continue this legacy, whether forging ahead or using the “back door,” nurse practitioners are carving out a deployment role, with or without deployment billets. The role of the nurse practitioner in military deployment has been studied very little; noted are two unpublished studies (McGlooin, Ballantyne, and Armstrong, 1994; Lukasik, 1993). The deployment role of the NP is therefore relatively unknown or unspoken.

The findings of this study, illuminated by the repeated statements of the participants, strongly reflect the assumptions bracketed in the literature which was reviewed as the study evolved. What is the role of the nurse practitioner in military deployment? What recommendations can be made to better prepare for deployment? The literature on military medical deployment has demonstrated that primary care, preventive health maintenance, and education of the troops are essential foundations of deployment medicine (Blount et al., 1991; Korenzi et al., 1991; Markenson et al., 1992; Morloff & Lockrow, 1991; Stowe, 1992; Withers et al., 1994). The fact that the NP is rooted in each of these permits theory postulation, through the use of role theory, regarding the legitimate role of the NP in military deployment. This study however goes beyond speculation of the role by comparing and contrasting the health care needs of the

populations being served to the qualifications and role of the NP. Through the descriptive disclosures of the lived experiences of NPs that have deployed, the gap has been closed. Not only do the study participants provide accounts of the overwhelming ratio of primary care to trauma care, but they describe their effective utilization in the emergency and trauma care arena, the challenge of delivering culturally sensitive care, their niche in the caring for a growing population of female troops, their ability to expand their role when needed, and the obstacles they've encountered while implementing their numerous and sometimes overwhelming and conflicting roles. This is further strengthened and supported in the work by Lukacik (1993) and McGlooin, Ballantyne, and Armstrong (1994), "There were no specific 'billets' for nurse practitioners at the time of this mission, but nurse practitioners who were deployed were utilized in their role" (p.7). Lukacik (1993) states, "In regard to contingency roles, it seems clear that nurse practitioners have proven themselves on board ships and in situations like Desert Storm and the Haitian refugee camps" (p.111).

While this study focused more on the nature of patient care than it did the psychological, social, and emotional component of the NP role during deployment, the professional role problems became evident. The NPs in this study have described conflicts with other health care team members, such as peers, executive nurse staff, physicians, and foreign health care providers. They have shared their frustration with experiencing role strain in the area of overqualification (underutilization) as well as underqualification--related to lack of training and being asked to practice outside of their scope of practice. The same qualifications that encouraged keeping them in the field

longer and made them a valuable asset to the deployment team-- the ability to fill dual roles and see the big picture, also led to role conflict, overload and ambiguity. The problems that resulted from lacking preparation were addressed by nearly every participant, and the need to train for a specific deployment role was well presented by one of the participants in the following statement:

That is something in our Headquarters, somebody is going to have to begin to address because you cannot train everybody for everything. People need to be given a mobilization billet and then they need to spend years training for that billet, going to that billet to maintain and refresh their skills. (Study participant, personal communication)

McGlooin, Ballantyne, and Armstrong (1994) express their agreement, obtained during their own separate deployment experiences, in the following:

The experienced and formally educated nurse practitioner could effectively manage many minor and some major traumatic injuries. Nurse practitioners could also successfully manage many inpatient medical and surgical problems associated with operational and humanitarian missions. It is strongly recommended by the authors that the Navy, Army, and Air Force re-evaluate their current mission statements and contingency plans, in order to effectively incorporate nurse practitioners into the deployment teams. (p. 9)

In summary, it is evident that there is a role for the NP in wartime, as well as MOOTW deployments. Defining the role of the deployed NP as it emerged from the data

is multifaceted. The most effective utilization of the NP during military deployment is to maintain a role in primary care provision. Primary care of DNBI is practiced daily by most NPs. It has been demonstrated that NPs can do this well and in many deployment settings--the ER, the ward, the aid station, and self-made mobile clinics.

While incorporation into a primary care deployment team may be the best utilization of the NP, their leadership, officership, and nursing experience permit them to be effective contributors when stepping outside of their primary care role. This is demonstrated in their ability to assume responsibility for positions from charge nurse and chief nurse to staffing a medical ward, to providing trauma care in the ER. To each of these roles, the NP brings an additional dimension not provided by most other health care professionals--the caring for the *whole* person. This holism is at least as important during wartime and humanitarian efforts as it is during peace.

Most NPs, while flexible and adaptable, agree that the deployment role for the NP needs to be re-evaluated and incorporated into contingency plans. Based upon the data, it is the recommendation of this author that each NP should have a defined mobilization role supporting the mission for their specific command and practice that role. This became especially evident in the delivery of trauma care. Trauma care training and triage training are essential. Additionally, readiness training needs to be performed regularly and nurses should be involved in planning field exercises which have been described by participants as not meeting their needs. A known mobilization/contingency role would go a long way in avoiding common role problems, for the NP but more importantly, in providing the best quality of care.

Significance for Nursing

The findings of this study demonstrate several areas of significance for nursing. The Director of the Air Force Nurse Corps has stated that readiness is "Job One." Never before have the accounts of deployed NPs been examined. This study provides one of the critical first steps in defining the most effective utilization of the NP in military deployment, which is identifying that role and the obstacles to the successful implementation of that role--lack of knowledge at the decision making level, the need for billets within written platforms, and role- appropriate medical readiness training. Military nurses do not find medical readiness training beneficial. Further, while nursing strives to substantiate and maintain advanced practice, removing the NP from the advanced role does not contribute to perpetuation of the role. The military member of the future must be qualified and capable of contributing in an operational mode. The unready military individual will cease to thrive in the military.

Limitations of the Study

As previously mentioned during the description of applied methodology, there is inherent limitation in the process of subject selection, "snowball sampling." One cannot ignore that the findings of the study may be somewhat different if a random sample had been selected from an available list of NPs that have deployed. Such a list is not available. This limitation is somewhat reduced by the fact that the sample did not begin with just one or two sources, but several leads were followed to obtain the final sample. Additionally, the sample was obtained from all three armed forces and numerous and various deployment locations.

Another limitation may be the manual manipulation of a large amount of data. Approximately 200 pages of transcription have been analyzed without aid of a computer program designed to code and sort data. As discussed in detail, this limitation has been negated to the extent possible by submersion in the data with repeat audiovisual exposure and frequent and constant comparison, and the triangulation of data with audit trails, field notes and the mentoring and review of the data collection and analysis processes by an independent researcher. Data was submitted to this reviewer in stages and various forms, ie. complete written transcripts, audiotapes, and preliminary and final data analysis format.

Recommendations for Further Research

The recommendations for further research include examining the role of the NP during deployment while in the field, as opposed to a retrospective account. Additionally, it may be helpful to examine the role from the perspective of other health care team members, such as physicians, PAs, and nurse managers. Looking at the subject from a specific service point of view may provide more concrete and specific recommendations for training, since this study identified differences among the services in utilization and readiness training of NPs. An attempt was made to interview Nurse Corps Chiefs in this study, but was unsuccessful due to time constraints and the full schedules of these nurse executives. Obtaining information from them would be invaluable. A quantitative study involving the data collection from the entire NP population also would be of benefit. The psychological, social, and emotional pieces of the NP role in deployment were not a focus of this study. While not emerging as a

theme, the lack of psychological and emotional preparation and the personal lived experiences of these nurses beckon research consideration. One example is that of a NP who, having received orders to Saudi Arabia during the Gulf War, left her 6-month-old daughter with her active duty husband. She boarded a military transport plane and celebrated her birthday by learning how to don a gas mask on the flight to Saudi Arabia.

Conclusions

In conclusion, this study of the role of the nurse practitioner in military deployment has been productive in defining the role as well as recommending improvements in the readiness training of NPs. Additionally, this study extended the scant amount of research that has been conducted about this population. In today's military, the contingency role must be known, practiced, and constantly ready to be implemented. This qualitative descriptive study has been an effective means of exploring the deployment role of the military nurse practitioner.

Appendix A

ANNEX F SUMMARY (HSD-TP-1991-002, 1993, F-1)

- A. Respiratory - Diseases of the upper and lower respiratory system (for example, colds, pharyngitis, bronchitis, pneumonia, sinusitis, otitis, and reactive airway condition).
- B. Gastrointestinal - Infectious and noninfectious disorders of the gastrointestinal system, including diarrhea, acute gastroenteritis (AGE), dysentery, gastritis, gastritis, ulcer disease, diverticular disease, food poisoning, food intolerance, and constipation.
- C. Dermatological Conditions - Rashes and other skin disorders, including superficial infections; contact dermatitis; infestations; and external skin growths, such as warts, moles, and skin tags; as well as infections or disorders of the external ear canal.
- D. Nonbattle Injuries (NBI) - Nonbattle injuries, including sprains, strains, overuse syndrome, muscle pulls, spasms and pain, fractures, bone bruises, ligament and/or cartilage tears, lacerations, abrasions, contusions, hematomas, burns, animal bites, snake bites, and insect bites, but excluding eye injuries.
- E. Sexually Transmitted Diseases (STD) - Sexually transmitted diseases, such as syphilis, gonorrhea, genital herpes, pelvic inflammatory disease, chlamydia.
- F. Psychiatric Conditions - Casualties with psychological or psychiatric conditions who are expected to be returned to duty within 24 hours. These conditions include, but are not limited to, depression, stress reaction, alcohol or drug abuse, or suicidal gestures, etc.
- G. Minor Medical - Conditions not included in any other group that are normally treated without surgery, such as chest pain, cardiac disease, hypertension, neurological

problems, syncope, genital-urinary conditions, hemorrhoids, headaches, and immunizations.

H. Minor Surgical - Any condition that requires surgery and/or surgical follow-up, but excluding ophthalmological; included are minor procedures, such as removing sutures, removing foreign bodies; excising warts, moles, and other skin lesions; draining superficial abscesses; visits for surgical follow-up after discharge from the hospital.

I. Climatic - Disorders directly related to the climate or geographical location, such as sunburn, heat cramps, heat exhaustion, heat stroke, dehydration, frostbite, hypothermia, immersion syndrome, exposure, and altitude sickness.

J. Eye - Any disorder or minor injury to the eye, tear ducts, or eye lids, including conjunctivitis and foreign bodies.

K. Fever - Febrile illness not attributable to any particular organ system or other medical condition.

Appendix B

INTERVIEW GUIDE

1. What was the mission during your deployment (wartime, peacekeeping, humanitarian, disaster relief, etc.) and to what location have you deployed?
2. Please discuss the role of your unit during this deployment (describing the health care team) and specifically your role during deployment.
3. Based upon your experience, what do you think the role of the nurse practitioner should be during deployment?
4. If medical readiness training could better prepare you for deployment, what recommendations would you make for training education/exercises?

Appendix C

CONSENT FORM

The Role of the Nurse Practitioner in Military Deployment

I have been asked to participate in a research study investigating the role of the military nurse practitioner during medical deployment. The purpose of this study is to identify and describe the role of military nurse practitioners during deployment for war-time missions and military operations other than war. This study may be of further benefit in identifying the training needs of nurse practitioners. I have been asked to participate because I am, or have been, a military nurse who has deployed for one or more military operations. I am one of approximately 10 nurses in this study. This project is under the direction of Captain Michelle D. Lavey, RN, a student in the Nurse Practitioner Program at the Uniformed Services University of the Health Sciences. There is no other sponsorship or funding for this project.

If I choose to participate in this project, I understand that I will be asked four core questions with additional follow-up questions aimed at clarifying my responses. I understand that this interview will be either face-to-face or a telephone interview, and both types will be tape recorded. The initial interview will last approximately 60 minutes. A brief follow-up interview will be conducted for the purpose of confirming that data is interpreted correctly. The core questions will focus on my experiences as a nurse practitioner during deployment for the purpose of providing medical care, as well as my thoughts and feelings about my experiences, and any current recommendations I would make regarding the role and deployment of military nurse practitioners in the future. I understand that there are no physical risks from participating in the study, however, I may experience some emotional discomfort associated with responding to the questions dependent upon my deployment experiences. If I want to discuss these feelings, I may call the researcher at 301-208-8175 or the military mental health clinic at my current location. I understand that I may not be personally benefited by the study, however, the study may contribute to a better understanding of the deployment

experience of the nurse practitioner which, in turn, may improve the training and mission performance for this group of professionals.

I understand that the information gathered from me will not be reported to anyone outside the research project in any manner which personally identifies me. My identity will only be known to the researcher; the thesis committee will only know my interview number. A report of the study results will be submitted as a written thesis document and will also be available to me. The researcher (Michelle Lavey) has offered to answer any questions that I may have about my involvement in the study. All audiotaped and transcribed interviews will be maintained by interview number by the researcher. I understand that my participation is completely voluntary and that I may withdraw from the study at any time without penalty or loss of benefits to which I am otherwise entitled. Confidentiality is protected to the best extent provided under law. I understand that a signed statement of informed consent is required of all participants in the study. My signature indicates that I understand and voluntarily agree to the conditions of participation described above, and have received a copy of this form.

DATE

SIGNATURE OF PARTICIPANT

PARTICIPANT'S PRINTED NAME

Using language that is understandable and appropriate, I have discussed this project and the items above with the subject.

DATE

SIGNATURE OF THE INVESTIGATOR

Michelle D. Lavey
PRINTED NAME

WITNESS SIGNATURE

PRINTED NAME

REFERENCES

- Adler, P.A. & Adler, P. (1994). Observational techniques. In Denzin, N.K. & Lincoln, Y. S. (Eds.). Handbook of qualitative research, pp. 377-402. Thousand Oaks, California: Sage Publications Ltd.
- American Nurses Credentialing Center: Letter to certified nurse practitioners. Washington, DC., November 26, 1992.
- Artinian, B.A. (1988). Qualitative modes of inquiry. Western Journal of Nursing Research, 10(2), 138-149.
- Austin, F., Foster, W. & Richard, J.C. (1968). Pediatric screening examinations in private practice. Pediatrics, 41, 115-119.
- Biddle, B.J. (1979). Role theory: Expectations, identities, and behaviors. New York: Academic Press.
- Blount, B.W., Krober, M.S. & Kozakowski, M. (1991). A comparison of MEDRETE content to U.S. ambulatory care. Military Medicine, 156, 248-251.
- Bombard, C.F. & Kennedy R.E. (1987). An aid to temporary staffing shortages: The nursing pool. Military Medicine, 152, 136-138.
- Booth, R.Z. (1981). The preparation of primary care nurse practitioners. International Nursing Review, 28, (4), 110-113.
- Brown, S. & Grimes, D. (1993). A meta-analysis of process of care, clinical outcomes, and cost-effectiveness of nurses in primary care roles: Nurse practitioners and nurse-midwives. Presented at the Third Annual Primary Care Conference, Agency for Health Care Policy and Research; January 11-12, Atlanta Ga.

Burns, N. & Grove, S.K. (1993). The practice of nursing research: Conduct, critique, and utilization (2nd ed.). Philadelphia: W.B. Saunders Co.

Clawson, D.K. & Osterweis, M. (Eds.) (1993). The roles of physicians and nurse practitioners in primary care. Washington, DC: Association of Academic Health Centers.

DeAngelis, C.D. (1994). Nurse practitioner redux. JAMA, 271 (11), 868-871.

Defense Intelligence Agency: Medical capabilities study, Republic of Bolivia (DST-1810S-355-88). Washington, DC, U.S. Government Printing Office, September, 1988.

Denzin, N.K. & Lincoln, Y. S. (Eds.). (1994). Handbook of qualitative research. Thousand Oaks, California: Sage Publications Ltd.

Department of the Air Force, Health Programs: Presentation to the Committee on Appropriations, Subcommittee on Defense, United States Senate, 104th Cong., 1st Session (1995).

Edmunds, M.W. (1978). Evaluation of nurse practitioner: An overview of the literature. Evaluation and the Health Professionals, 1(1), 69.

Feldman, M.J., Ventura, M.R., & Crosby, F. (1987). Studies of nurse practitioner effectiveness, Nursing Research, 36 (5), 303-308.

Ford, L.C. (1982). Nurse practitioners: History of new idea and predictions for the future. In H. Aiken & S.R. Gortner, (Eds.), Nursing in the 1980's: Crises, opportunities, challenges, (pp. 231-247). Philadelphia: Lippincott.

Ford, P.A., Seacat, M.S., & Silver H.K. (1968). Relative roles of the public health nurse and the physician in prenatal and infant supervision. American Journal of Public Health, 56, 1097-1103.

Forty eight nurses selected as squadron commanders. (1994, September). HQ USAF SGN, 94(9), 1.

Gardon, K. LtCol., (1993). Talking paper on USUHS graduate nurse practitioner program. HQ USAF SGN.

Garland, N. & Marchione, S. (1982). A framework for analyzing the role of the nurse practitioner. Advances in Nursing Science, 4(2), 19-29.

Glendon, M.D. (1993). Point of view: Saudi, SCUDS, and survival. Journal of the American Academy of Nurse Practitioners, 5(6), 245-248.

Hackworth, D.H. (1991). War and the second sex. Newsweek, August 5.

Hardy, M.E. & Hardy, W.L. (1988). Role stress and role strain. In Role theory: Perspectives for health professionals (2nd Ed). Norwalk, Connecticut: Appleton & Lange.

Janesick, V.J. (1994). The dance of qualitative research design, metaphor, methodolatry, and meaning. In N.K. Denzin & Y.S. Lincoln, (Eds.). Handbook of qualitative research (pp. 209-219). Thousand Oaks, California: Sage Publications Ltd.

Keenan, W.F. (1991). Non-surgical medical care of enemy prisoners of war during Operation Desert Storm, Military Medicine, 156, 648-651.

Korenyi-Both, A.L., Juncer, D.J., & Dellva, W.L. (1991). Annual training medical support for a reserve separate infantry brigade (mechanized). Military Medicine, 156, (6), 272-279.

Lesho, E.P. (1994). Supply consumption and disease surveillance during an overseas training exercise in southeast Asia. Military Medicine, 159, 53-55.

Levine, E. (1994). Needs assessment for advanced practice nurses for the uniformed services. Military Medicine, 159, 650-654.

Lincoln, Y. & Guba, E. (1985). Naturalistic inquiry. Newbury Park, CA: Sage.

Lindsay, G.C. (1992). Infectious disease rates in Operations Desert Shield/Storm. Army Research, Development, and Acquisition Bulletin, 28-29, May-June.

Lofland, J., & Lofland, L. (1984). Analyzing social settings: A guide to qualitative observation and analysis. Belmont, CA: Wadsworth.

Lukasik, S.D. (1993). Nurse Practitioners in the United States Navy: A historical perspective. Unpublished Master's Thesis, University of Washington, Seattle.

Lum, J.L.J. (1988). Reference groups and professional socialization. In M.E. Hardy & W.L. Conway, Role theory perspectives for health professionals (2nd Ed), p 226. Norwalk, Connecticut: Appleton & Lange.

Markenson, G., Raez, E. & Colavita, M. (1992). Female health care during Operation Desert Storm: The eighth evacuation hospital experience. Military Medicine, 157, 610-613.

Maroon, H.J. (1976). My experiences and conflicts as a primary care nurse practitioner. USAF Medical Service Digest, 27 (3), 28-29.

McGlooin, E.B., Ballantyne, K.A., & Armstrong, K.K. (1994). The Nurse practitioner in the Navy and Army: Past, present and future. Unpublished Master's Scholarly paper, Duke University School of Nursing.

Miles, M.B., & Huberman, A.M. (1984). Qualitative data analysis: A sourcebook of new methods. Beverly Hills, California: Sage.

Molloff, A.L., & Lockrow, E.G. (1991). Operational Medical Support of an Aviation Brigade Deployed during Operation Desert Shield, Military Medicine, 156 (8), 416-417.

Munhull, P.L. & Oiler Boyd, C. (1993). Nursing research, A qualitative perspective. New York: National League for Nursing Press.

Murphy, P.C. (1996). Federal healthcare nurse practitioner. In J.V. Vickey, R.M. Ouimette, and S.L. Vengoni, (Eds). Advanced Practice Nursing, (pp. 341-348). Philadelphia, PA: Lippincott.

Oiler Boyd, C. & Munhall, P.L. (1993). Qualitative research proposals and reports. In P.L. Munhall & C. Oiler Boyd, (Eds.). Nursing research, A qualitative perspective, (pp. 424-453). New York: National League for Nursing Press.

Osterweis, M. & Garfinkel, S. (1993). The roles of physician assistants and nurse practitioners in primary care: An overview of the issues. In D.K. Clawson, & M. Osterweis, (Eds.). The roles of physicians and nurse practitioners in primary care, (pp. 1-10). Washington, DC: Association of Academic Health Centers.

Pearson, L.J. (1994). Annual update of how each state stands on legislative issues affecting advanced nursing practice. The Nurse Practitioner, 19,(1).

Pierce, J.R. (1993). The role of the United States Army active component pediatricians in Operations Desert Shield, Desert Storm, and Provide Comfort, Military Medicine, 158, 105-108.

Schiff D.W., Fraser, C.H., & Walters, H.L. (1969). Pediatric nurse practitioners in the office of pediatricians in private practice. Pediatrics, 44, 62-68.

Siegel, E. & Bryson, S.L. (1963). Redefinition of the role of the public health nurse in child health supervision. American Journal of Public Health, 53, 1015-1024.

Silver, J.K., Ford, L.C., & Day, L.R. (1968). The pediatric nurse practitioner program. Journal of the American Medical Association, 204, 298-303.

Skinner, A.L. (1968) Parental acceptance of delegated pediatric services. Pediatrics, 44, 1003-1004.

Stowe, H.O. (1992). Into Iraq, nursing organization in a combat support hospital, JONA, 22 (2), 49-53.

Southby, J.R. (1980). Primary care nurse practitioners within the Army health care system, expectations of the role. Military Medicine, 10, 659-665.

U.S. Air Force (1973). U.S. Air Force Nurse Corps Newsletter. Bolling Air Force Base, Washington, DC.

U.S. Air Force (1974). U.S. Air Force Nurse Corps Newsletter. Bolling Air Force Base, Washington, DC.

U.S. Air Force, Materiel Command, Human Systems Center, Human Systems Program Office (1993). Estimating wartime disease, non-battle injury, and battle reaction casualties in the U.S. Air Force (HSD-TP-1991-0002).

U.S. Congress, Office of Technology, Nurse practitioners, physician assistants, and certified nurse-midwives: A policy analysis (Health Technology Case Study 37, OTA-HCS-37 (Washington, DC: U.S. Government Printing Office, December 1986).

Wells, S.P. (1973). Educational opportunities for Air Force nurses. Digest, 24 (7), 17-20.

Withers, B.G., Erickson, R.L., Petrucelli, B.P., Hanson, R.K., & Kadlec, R.P. (1994). Preventing disease and non-battle injury in deployed units, Military Medicine, 159, 39-43.

Vaught, W.L. (1994). In Defense of America: Women who serve. USA Today, 122, 86-92.