PERCEPTIONS OF THE UTILIZATION OF FAMILY NURSE PRACTITIONERS BY CURRENT OUTPATIENT AIR FORCE PHYSICIANS

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BERTZ

APPROVAL SHEET

Title of thesis: "Perceptions of the Utilization of Family Nurse Practitioners by Current Air Force Outpatient Physicians"

Name of Candidate: Patrick Edward Bertz
Master of Science in Nursing
Family Nurse Practitioner

APPROVED:

Marilyn W. Edmunds — 3-26-96
Committee Chairperson — Date

Barbara Szwia — 3-26-96
Committee Member — Date

Gloria Dea — 3-26-96
Committee Member — Date

APPROVED:

Faye G. Abdellah — 4-30-96
F.G. Abdellah, Dean — Date

CURRICULUM VITAE

NAME: Patrick Bertz
[redacted]

RANK OR GRADE: Captain
AFSC: 46N3C
RN LICENSURE: Florida

EDUCATION (Military):

8/94-5/96 M.S.N. Family Nurse Practitioner at the Uniformed Services University of the Health Sciences in Bethesda, MD GPA 3.96
6/93-9/93 Nursing Service Management by Correspondence from Air Force Institute of Technology
8/91-9/91 Military Indoctrination of Medical Squadron Operations. Sheppard AFB, TX

EDUCATION (Civilian):

6/92-5/94 M.S.N. Advanced Clinical from George Mason University, Fairfax, VA GPA 3.9

8/87-5/89 B.S. Health Care Administration from Saint Leo College, Saint Leo, FL (Cum Laude) GPA 3.5

8/80-5/84 A.D. Nursing from Madison Area Technical College (MATC), Madison, WI.

CERTIFICATIONS:

TYPE	ORGANIZATION	DATE
Critical Care Registered Nurse	AACN	6/91

CIVILIAN AND MILITARY RN WORK EXPERIENCE (Last 10 years in reverse chronological order-- most recent first first)

12/94-8/94 Staff RN in the Emergency Room at Malcolm Grow Medical Center, Andrews AFB, MD 20331.

8/91-12/94 Staff/Charge/Staff Development Nurse in a 10 bed ICU at Malcolm Grow Medical Center, Andrews AFB, MD 20331.

3/89-8/91	Staff/Charge Nurse in both a 10 bed Neuro-surgical ICU and a 10 bed Cardio-vascular surgical ICU. Tallahassee Memorial Regional Medical Center, Magnolia and Micasucki, Tallahassee, FL 32308.
8/87-3/89	Staff/Charge Nurse in a 10 bed CCU. Also worked part-time in acute and chronic hemodialysis in Bayonet/Hudson HCA Medical Center, 14000 Fiveay Road, Hudson, FL 34667.
10/86-4/89	Critical Care Agency Nurse. Working in the Critical Care Units in the Tampa Bay, FL area. Stantons, Inc. P.O. Box 186 Palm Harbor, FL 34682.
5/85-9/87	Staff/Charge Nurse in a 24 bed Combined ICU. Medical, Surgical, Cardio-vascular, Trauma and Neuro-surgical Intensive Care patients. Orlando Regional Medical Center, 1414 S. Kuhl Ave, Orlando, FL 32806.
10/84-5/85	Home Health RN for Home Health Services of Greater Savannah, Worked as a community health nurse serving Savannah and the surrounding rural area. 7805 Waters Ave #8B, Savannah, GA 31403.
6/84-2/85	Staff Nurse in a 32 bed step down Surgical Floor and Cardio-Vascular Intensive Care Unit. Memorial Medical Center, P O Box 23089. Savannah, GA. 31403.

HONORS AND AWARDS (MILITARY)

TYPE	LOCATION	DATE
Good Conduct Metal	Zaragoza AB, Spain	6/79
Honorable Discharge USAF	McGuire AFB, NJ	3/80
Company Grade Officer of the Quarter	MGMC, Andrews AFB,MD	12/92
Air Force Commendation Medal	USUHS, Bethesda, MD	9/94
Who's Who in American Colleges and Universities	GSN, USUHS, Bethesda, MD	11/95

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Patrick Edward Bertz
Graduate School of Nursing
Uniformed Services University
of the Health Sciences

ABSTRACT

The United States Air Force is in the process of introducing family nurse practitioners (FNP's) in their medical treatment facilities worldwide. Acceptance of the nurse practitioner by the health care team is critical to their effective utilization. Therefore it is essential to take steps to investigate the out patient health care environment within the Air Force. In this descriptive study, information was collected regarding the attitudes of current Air Force outpatient physicians (N=131) at four Air Force medical treatment facilities regarding the utilization of the FNP. This study involved tool development and a pilot study. The questionnaire used consisted of 24 questions pertaining to utilization of NPs, physician experience, comfort with NPs, and demographic data. Data analysis included descriptive and inferential statistics.

Results indicate that physicians perceive the utilization of FNPs to increase the amount of education and counseling given to patients, to allow physicians to spend more time on complex cases, and to increase the number of patients seen in the clinic. Physicians surveyed believe that FNPs should be placed in the primary care or family practice clinics. The length of time since the physician graduated from medical school, and length of time a physician has worked with a NP was related to a greater level of comfort in working with NPs or under the care of an NP.

PERCEPTIONS OF THE UTILIZATION OF FAMILY NURSE PRACTITIONERS BY CURRENT OUTPATIENT AIR FORCE PHYSICIANS

by

Patrick E. Bertz RN, MSN

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PREFACE

When I entered the United States Air Force five years ago I had a goal of pursuing an advanced nursing degree. I was given an opportunity to actualize that by being accepted at the Uniformed Services University of the Health Sciences as a family nurse practitioner. With the new role came new interest in the relationship between nurse practitioners and physicians. This study has contributed greatly to my interest.

Family nurse practitioners are a new concept within the Air Force and being new must be tested and tried. It is another attempt by the Medical Service to meet the needs of Air Force people. I hope this study will, in some way, aid those who are nurturing the family nurse practitioner program within the Air Force in their evaluation of what is happening, and help them to make changes if they are required. Physician perceptions on the utilization of family nurse practitioner are important to the Air Force Medical Service, and it is this question that this research paper addresses.

Many persons contributed to this work. I am deeply indebted to the following people, whose dedication to their profession goes far beyond what is expected, and whose selflessness should be known.

Special thanks must go to Dr. Marilyn Edmunds my thesis chairperson, for her expert guidance throughout this paper. She helped direct me to this topic and showed patience and

insights with editing and flow of the manuscript. She is a true inspiration to all nurse practitioners for her clinical knowledge and published works within the profession.

I am also indebted to Dr. Barbara Sylvia a committee member for her calm reassuring attitude in guiding me through the data analysis and statistical processes contained herein. She fostered and nourished an interest in research and will always remain a mentor for me.

Further appreciation must be expressed to committee member Retired Lieutenant Colonel Gloria Deniz for her assistance and critiques at critical moments in the development of this paper. She is a skilled writer and editor. Her knowledge of the United States Air Force medical environment was an incredible help in setting up the logistics for this study.

Last, and most important, I must thank the Air Force physicians for their participation. It was most encouraging.

In closing I must express appreciation to all the interest and support I have been given for this study. Even before final completion I have been selected to present this research as a poster presentation for the Sixteenth Annual Graduate Research Colloquium at the Uniformed Services University of the Health Sciences in April, 1996. I hope this study contributes to family nurse practitioner utilization within the Air Force Medical Service Environment and in the pursuit of medical excellence.

Patrick E. Bertz, Captain, USAF, NC

Uniformed Services University of the Health Sciences

Bethesda, Maryland

March, 1996

DEDICATION

To Lorinda,

Sarah, and Samuel

for their prayers, patience,

support, and the love of God.

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CHAPTER ONE

Introduction

The purpose of this thesis is to survey the attitudes of current Air Force outpatient physicians regarding the utilization of family nurse practitioners (FNPs). Air Force outpatient physicians are an integral part of the existing health care environment within the Air Force and their attitudes toward nurse practitioner utilization are unknown. This study will describe a sample of current Air Force outpatient physicians attitudes towards the utilization of family nurse practitioners prior to their introduction into Air Force clinics.

Numerous studies have documented the effectiveness, utilization, and acceptance of nurse practitioners and their impact on the delivery of health care in the civilian setting (Edmunds, 1978; Prescott, 1994; Sullivan, 1982) but few have been done within the military health care environment and none within the Air Force. Acceptance of the nurse practitioner by the physician is critical to the effective utilization of the nurse practitioner in the delivery of health care. It is, therefore, very important to assess the health care climate which new nurse practitioner graduates will enter. This insight may help provide nurse practitioners with a realistic transition into their new medical model environment.

Background

Civilian nurse practitioners have practiced in a wide variety of health care settings since the inception of the role in the mid-1960s (Hupcey, 1993). The role of the nurse practitioner has expanded to include all types of outpatient and inpatient settings (Edmunds & Ruth 1991). The responsibilities FNPs assume are nearly as varied as the settings in which they work. Despite the variations in practice settings and responsibilities of the nurse practitioner, the physician still plays an important role in helping or hindering FNP utilization within medical practice.

Among the 25,000 - 30,000 NPs in the civilian setting, nurse practitioners work independently or, more often, in collaboration with a physician. They perform health histories, physical examinations, diagnose and treat minor acute illnesses, order medications and laboratory tests, and provide patient counseling and education. They provide care to all ages and work primarily in clinics, long-term care facilities, hospitals, offices, managed care corporations and private industries (Moore, 1993).

The Air Force has used OB-GYN, pediatric, and primary care nurse practitioners in their medical missions for many years. Most of these practitioners were and currently are being educated in civilian colleges and universities in the United States.

The Air Force is now educating FNPs who will be utilized throughout Air Force medical facilities at the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland in the Masters of Science in Nursing program. Their education consists of a five semester, twenty-two month, sixty-three credit curricula with focused clinical semesters in advanced assessment, the well/sick child, the well/sick adult, the well/sick elderly, and women's health.

In the Air Force, a nurse practitioner is defined as a registered nurse who has received special training and has been certified by a national certifying organization in their specialty. They perform not only nursing functions, but many of the functions traditionally performed by physicians. They work under the direct administrative and professional supervision of the physicians in charge of their functional areas, supplemented by professional guidance from military and civilian consultants as needed (Air Force Manual 36-2105, 1995).

The Air Force has educated their own nurse practitioners in continuing education programs since 1969, starting with the preparation of several nurses in cancer detection. The nurse practitioner program within the Air Force expanded in the 1970's to include OB/GYN, pediatrics and primary care. Every year a designated number of career nurses are enrolled as full time students under the Air Force's educational program to obtain their masters degree

in selected Air Force sponsored, or civilian nurse practitioner programs. In the past, the Air Force had established their own nurse practitioner programs in OB/GYN, pediatric and primary care. If their needs could not be met by the Air Force schools, personnel were sent to comparable civilian schools (Wells, 1976).

The primary care nurse practitioner (PCNP) program was established in 1974 and it functioned to educate PCNPs within the Air Force. At that time, the role of the PCNP was instituted to combat the shortage of physicians in the military. PCNPs functioned in the primary care clinic, the emergency room, or both. They took the history, performed a physical examination, requested necessary diagnostic laboratory tests and x-rays, made a diagnosis, treated the patient, and developed a plan of therapy. If necessary, the patient was referred to a specialist for more definitive care (Maroon, 1976).

The initial PCNP program was established with the enrollment of twelve Air Force nurses. It consisted of a six month course (phase 1) at the University of Arizona, with a follow up precepted clinical experience (phase 2). The program was then moved to the School of the Health Care Sciences at Sheppard Air Force Base, Wichita Falls, TX supporting the same type of curriculum. The second class had twenty-one nurses and the third class had twenty six. In June of 1975 there were a total of 99 primary care nurse practitioners working in the Air Force (United States Air

Force, 1975). In March, 1976, the PCNP program was terminated (United States Air Force, 1976). No further applications were accepted and official reasons for their termination were unretrievable. PCNP utilization ended with normal attrition.

Captain Hana Jane Maroon, an Air Force primary care nurse practitioner, educated as an FNP, and faculty at the University of Arizona PCNP school, published an article about her many experiences and conflicts as a PCNP in the Air Force. These conflicts originated within herself about establishing her own identity and role as a health care provider, as well as conflicts with the insufficient educational preparation necessary to meet with the role expectations of the Air Force (1976). The PCNP students in the University of Arizona - Air Force PCNP program revealed their feelings of inadequacy in the areas of anatomy, physiology, radiology, and diagnostic laboratory/therapeutic patient management skills. Difficulties of patient acceptance, conflicts between nursing service and professional service, and conflicts of practicing in a teaching hospital versus a small clinic were the concerns of many of the PCNPs.

A careful analysis of factors surrounding the utilization of FNPs may give insight into longer utilization of the FNP versus the PCNP. Therefore it is essential to understand the current Air Force health care environment and the role expectations of FNPs by physicians.

Significance of the Study

This topic is important because family nurse practitioners have never been utilized in the Air Force and their utilization and role are in the process of being determined. This study will provide important evaluative information, as there is no information available on physician attitudes towards FNP utilization in the Air Force. How will Air Force physicians react to their introduction? How do Air Force physicians feel they should be utilized? This study will attempt to answer some of these questions.

Although military nurse practitioners are not hired by military physicians, the nurse practitioners and physicians will have to work side by side. They will be required to collaborate with each other and be willing to work with each others' strengths and weaknesses. Consequently surveying the physicians about their attitudes and perceptions of the role and utilization may serve multiple purposes that include:

1. Determination of the area which FNPs may best be utilized from a physicians' perspective.

2. Determination of a sample of the attitudinal environment in which nurse practitioners will be practicing.

3. Creation of an awareness that FNPs will soon be utilized in the Air Force.

4. Provision of an opportunity for physicians to state how they feel about FNPs.

This information will help the new family nurse practitioners by providing them with additional knowledge regarding current physician attitudes. Hence, their utilization expectations might be more realistic as they transition into their new medical model environment.

Statement of the Problem

The following research questions were formulated for this study:

1) What are the perceptions of Air Force outpatient physicians regarding the utilization of FNPs?

2) Is there a significant relationship between type of physician specialty and physician extent of comfort working with NPs?

3) Is there a significant relationship between type of physician specialty and physician comfort under the care of an NP?

4) Is there a significant difference in physicians extent of comfort working with NPs for physicians who graduated earlier versus more recently from medical school?

5) Is there a significant relationship between the physician year of graduation from medical school and physician comfort under the care of an NP?

6) Is there a significant relationship between the time a physician has worked with an NP and physician extent of comfort under the care of an NP?

7) Is there a significant relationship between physician specialty and physician experience working with an NPs?

Conceptual Framework

The relevant theoretical perspective chosen for this study was derived from Edgar H. Scheim's model of change. "If change is to occur, therefore, it must be preceded by an alteration of the present stable equilibrium which supports the present behaviors and attitudes" (Scheim, 1969). Family nurse practitioners will be implemented to function as health care providers throughout Air Force medical treatment facilities. Their introduction will provide a change stimulus to the stable equilibrium within the Air Force medical environment. If change is to be quantified, a survey of the behaviors and attitudes within the stable equilibrium must transpire. To quantify this within the current Air Force environment, an evaluation must be made of the current Air Force health care system. The attitudes of current Air Force outpatient physicians regarding the utilization of family nurse practitioners will provide a sample of attitudes for this study. Change theories will offer insight into the behaviors that evolve when significant change occurs within an environment (George, 1990).

Operational Definitions of Relevant Terms

For the purposes of thesis study, the following definitions will be used:

1. Air Force outpatient physician.

A physician who works in any of the non-inpatient clinics at the time of this study.

2. Family nurse practitioner.

A nurse practitioner possessing skills and legal authority necessary for the detection and management of acute self-limiting conditions and management of chronic stable conditions within a family. A FNP provides primary, ambulatory care for families in collaboration with primary care physicians. The FNP provides health care and guides or counsels families as required. Consultation, joint-practice and referral to associated physicians are aspects of the FNP's practice.

3. Health care provider.

Nurse practitioner, physicians, and other persons identified by the subjects as health care providers.

4. Military.

The armed forces of the United States.

5. Patients.

A recipient of a health care service, a health care recipient who is ill or hospitalized, or a client in a health care service.

6. Air Force outpatient physician perceptions.

A mental image of a place, person, object, or event, interpreted in light of ones' own life experiences related by an Air Force outpatient physician. Perceptions are

measured by a four point rating scale in this study's questionnaire.

7. Physician comfort felt with an NP.

The degree of ease or satisfaction that a physician has with the way an NP practices health care as measured by a four point rating scale in this study's questionnaire.

8. Physician specialty.

A branch of medicine in which the professional is specifically qualified to practice by having attended an advanced program of study, by having passed an examination given by an organization of the members of that specialty, or by having gained experience through extensive practice in the specialty.

9. Under the care of an NP.

Having a nurse practitioner provide medical/nursing care to the physician. this includes subjective and objective assessment with diagnosis and treatment for the observed medical condition with follow up.

10. Utilization of the family nurse practitioner.

To put into practice. The appropriate work place and use of available skills and services of the FNP.

11. Year of graduation from medical school.

The chronological year that the physician graduated from medical school.

Limitations

There are several limitations to this study. One must consider the characteristics of the Air Force outpatient

physicians who tend to volunteer for research compared to those who do not participate. There is the question of the reliability of self reporting.

This study is applicable only to the Air Force medical service environment and Air Force outpatient physicians perceptions of NPs as described in the section on data collection. Since the sample is not randomly selected and is relatively small in size, done under limited time constraints and limited financial budget, findings cannot be statistically generalized to other medical environments.

Assumptions

Several assumptions have been made for the purpose of this study:

1. That the outpatient Air Force physicians were answering the survey in good faith and character, giving answers that were representative of their beliefs.
2. That the instrument had content validity, being accurately able to measure the attitudes of Air Force outpatient physicians perspectives on utilization of NPs.
3. That all Air Force outpatient physicians had an assessable mail box to which the survey could be distributed.

Chapter Summary and Overview

This chapter has described the purpose and importance of surveying the attitudes of current outpatient physicians. It is important to examine and quantify the current Air Force health care environment. The remaining chapters will

review the relevant studies and critique them relative to their research significance to this study. Description of the methodological research process used in this study will be presented in a step by step process to include pilot tests, instrumentation, and protection of human subjects. The data collected will be described and related with each research question to provide support or non-support of the research questions. With all this information conclusions will be drawn and recommendations made.

CHAPTER TWO

Introduction

The purpose of this thesis is to survey the attitudes of current Air Force outpatient physicians regarding the utilization of family nurse practitioners (FNPs). Air Force out-patient physicians are an integral part of the existing health care environment within the Air Force and their attitudes toward nurse practitioner utilization are unknown. This study will describe a sample of current Air Force out-patient physicians attitudes towards the utilization of family nurse practitioners prior to their introduction into Air Force clinics.

Review of Literature

This review of literature will try to historically retrace the literature on utilization of nurse practitioners with some discussion of areas that are significant or that directly impact on the utilization of nurse practitioners. Most of the literature on nurse practitioner utilization is intertwined in studies dealing with role, acceptance, and cost effectiveness. The literature dealing with nurse practitioner utilization is of two types. One type focuses on surveys of physicians undertaken to determine their attitudes toward utilization of nurse practitioners. The other type of literature

concerning utilization of nurse practitioners is descriptive,based on specific cases of nurse practitioners, and is generally developed from the experiences of one practice.

Historical Overview

For over a quarter of a century, the nurse practitioner model of advanced nursing practice has progressed from an aberrance of yesteryear, to the norm of today, and the tradition for tomorrow (Ford, 1979). Countless research, descriptive articles and opinion pieces have been written on the effectiveness, efficiency, utilization, and economic analysis during the evolution of the nurse practitioner. Numerous comprehensive review articles by Abdellah (1982), Crosby, Ventura, and Feldman (1987), Edmunds (1978), Feldman, Ventura, and Crosby (1987), LaRochelle (1987), Molde and Diers (1985), Safriet (1992), Shamansky (1984), Stanford (1987), and Yankauer and Sullivan (1982), provide extensive discussions of the research. It is important to note their work and acknowledge that NPs have a rich and well written tradition.

The authors of numerous reports have concluded that nurse practitioners are successful and effective, no matter what measure is used or what question is addressed: access, availability, acceptance, satisfaction, utilization, or clinical outcomes. There are many older studies that could be more methodologically rigorous, but more recent studies are both methodologically and conceptually sound. The

overwhelming majority of findings supports the effectiveness of nurse practitioners.

Literature Review of the 1960s

The earliest writings about nurses used as practitioners dates back to the early 1960's. A study conducted in 1963, but later published in 1973, evaluated nurses effectiveness. Nurses were studied working with a physician team caring for chronically ill patients in an ambulatory setting. The nurses had constant caseloads, did patient education, instruction, interpretation of laboratory work, though they neither examined patients nor performed physical assessments. The authors of this study indicted that "patient acceptance has been high" of nurses in this limited role and utilization. The major contribution of the study was its promotion of the idea of nurses as team members taking greater responsibility for the chronically ill (Stoeckle, Farrisey & Sweatt, 1973).

The development of the first nurse practitioner program in 1965 by Loretta Ford, R.N., Ed.D., F.A.A.N. and Henry Silver, M.D. was based on a "nursing model focused on the promotion of health in daily living, growth and development for children in families, as well as the prevention of disease and disability" (Ford, 1982, 1986). Ford notes that societal needs and nursing potential led to this development and utilization. The primary care physician shortage, which is described as a contributing factor in other parts of the country (Elder & Bullough, 1990; McGivern, 1986), is

defined by Ford as the opportunity, and not the reason, for the new role (Ford, 1982).

In a 1967 study, nurses were utilized as primary care providers for adults with chronic illnesses. In this study primary care clinic patients were interviewed and tested via a structured questionnaire regarding nurses effectiveness as health care providers. Patients were randomly assigned to either experimental (nurse-run) clinics, or to control (physician-run) clinics. After one year patients were re-tested using the same questionnaire. The study revealed that the nurse was accepted as a primary source of care, there was greater adherence to scheduled appointments and better time utilization by nurses, and the overall cost of the nurse run clinic was lower. This study also showed that patient satisfaction of the nurse run clinic was higher (Lewis & Resnick, Schmidt & Washman 1969). Although this was a frequently cited study it did have several limitations in that it did not describe how the nurses were selected for participation in the group, nor was any information provided regarding their educational preparation or advanced skills. However this study remains valuable both for its methodology and for the influence which its conclusions have had on subsequent role development (Edmunds, 1978).

Literature Review of the 1970s

In the 1970s, schools of nursing responded vigorously to the need for additional practitioners capable of being

utilized in primary care by developing family, adult, and pediatric nurse practitioner programs. Many people, especially the poor and minorities, were still without primary care services. The demand for nurse practitioners to be utilized in primary care continued to expand (Safriet, 1992).

Much of the early writing about nurse practitioners, as well as evaluation of them, came from several pediatric nurse practitioner (PNP) programs in Colorado and Massachusetts. Observers at both programs examined their graduates to ascertain exactly what they could do and how well they could do it. Quality of care evaluated was of high standard and the increased time released to pediatricians was documented (Ford & Silver, 1967). Probably the major contribution of this early research was promotional. The visibility of the PNP concept helped win support for continuing development of the role and led to a domination of nurse practitioner research by the PNP programs for the next few years (Edmunds, 1978).

Theiss (1976) reported in a study of 30 nurses that the thought of the nurse practitioner in an ambulatory clinic was generally accepted by the nurses being surveyed. However, there were discrepancies and disagreements on which functions were acceptable role behaviors by the nurse practitioner. The data also indicated that both the licensed practical nurses and registered nurses participating in the study perceived the nurse practitioner

as a threat. Additionally there was a general consensus of opinion that the nurse practitioner was consistently utilized in more of a physician's assistant type role rather than the preferred broader nurse practitioner role (Theiss, 1976). However the generalizability of this study is in question due to the small sample size.

In a national longitudinal cohort study in which 500 nurse practitioners and their 407 employers were surveyed, five factors were found to influence the utilization of NPs:

1. Ingrained psychological barriers of both NPs and physicians (that physicians were paternalistic and that nurses were subservient).

2. Attitudes of other providers to the nurse functioning in an expanded role, among them was the attitude of resistance from physicians.

3. The ambiguous legal status of the NP.

4. Organization of the traditional medical care system (centralized organizational structures that left nurses feeling powerless because all the power was held by physicians and board members).

5. Absence of a consistent policy for reimbursement of NP services.

This article left out much of the research methodology used for the study. In the study the word "utilization" was not clearly defined conceptually or operationally. Nevertheless, this study points out that it is important for NPs, physicians, health planners, consumers, and local,

state, and federal legislators to realize that barriers are to be expected when NPs are utilized (Sullivan, Dachelet, Sultz, Henery, & Carrol, 1978).

Nurse practitioners were utilized in the 1970's in solo and group practice settings that included family practice, internal medicine, pediatrics, obstetrics and gynecology, neighborhood health centers, and school health programs. NP responsibilities ranged from teaching and counseling of patients to a number of clinical tasks. The main reason physicians utilized nurse practitioners was to decrease their patient load (Levine, Orr, Sheatsly, Lohr & Brodie, 1978).

Another comprehensive study performed in the summer of 1974 addressed the effectiveness, responsibilities and utilization of nurse practitioners in various practice settings. Data on nurse practitioners in a number of locations in Virginia and in the Philadelphia metropolitan area were collected and analyzed to determine how the nurse practitioners' time was allocated among various duties and to evaluate nurse practitioner performance by physician and patients. Five instruments were developed to collect data. The first instrument was a questionnaire that was mailed to nurse practitioners who were currently unemployed or working in a capacity other than that of nurse practitioner. The second instrument was a nurse practitioner activities log where NPs kept an accurate record of their activities for two days. The third was a nurse practitioner interview

questionnaire. The fourth was a physician questionnaire which was conducted by interview and the fifth was a patient questionnaire which determined patient experiences and satisfaction with the nurse practitioners. To ensure that the diversity of NP practice was fully reflected in the study results, the entire specified populations of NPs were surveyed. A roster of nurse practitioners was developed using the records of the University of Virginia School of Nursing, the Virginia State Board of Medicine, and professional associations. The participating NPs were asked to indicate the name and address of the physician with whom they worked most closely. A letter was then mailed to the supervising physician requesting that they also participate in the study. In some cases, such as the military, it was necessary to obtain approval from a higher authority. Acceptance of the nurse practitioner by the physician was found to be crucial to the successful utilization of nurse practitioners in the delivery of health.

Dunn and Von Ruden (1978) found that physicians in general responded favorably to the concept of the nurse practitioner role, but were at times hesitant to delegate functions requiring more judgment and evaluation to the nurse practitioner. The physicians reported that nurse practitioners should be under close supervision of physicians. There was also indication that physicians believed nurse practitioners were utilized more as physician assistants than as nurses in expanded roles.

Another study investigated the effect of clinical settings on the utilization of nurse practitioners. This study evaluated 143 medical and pediatric nurse practitioners in 61 agencies and identified problems in role implementation and formulated recommendations for more effective utilization in clinical settings which employ or plan to employ nurse practitioners. The term "medical nurse practitioner" was not specifically defined in this study. They used a questionnaire that they designed to collect data on five classifications of data. The first classification dealt with the demographic characteristics of the practitioners age, type of generic preparation, years of experience in nursing, and length of employment with the sponsoring agency. The second dealt with nurse association (either medical or pediatric) and education session in which they were enrolled. The third classification dealt with agency characteristics including questions pertaining to the practitioners' relationship with their preceptors and with other physicians. The fourth was the type of sponsoring agency. The fifth was rate of role formalization and rate of role implementation. These were constructed from responses to a series of items which probed the timeliness with which the sponsoring agency provided resources necessary to implement the role. In their research they found that role formalization was one of the most important aspects needed for an agency to adequately implement the nurse practitioner role. The characteristics of an agency, not type of agency,

appeared to be linked to role formalization and implementation. Physician-intensive settings appeared to utilize nurse practitioners least effectively and more practitioners left such settings, citing inability to implement the role, than did practitioners employed by other types of health agencies (Zammuto, et al., 1979).

Literature Review of the 1980s

Southby (1980) conducted a study trying to compare and describe expectations and perceptions of the role of primary care practitioner held by nurse practitioners and nurses within the Army health care system. Using a exploratory/descriptive research design data was collected within 13 United States Army medical treatment facilities from 224 subjects representing four groups: nurse practitioners, nurses, patients of nurse practitioners, and patients of other health care providers. No significant differences were found between the role expectations held by primary care nurse practitioners and staff nurses.

The perceptions of nursing staff regarding the utilization of nurse practitioners in inpatient settings was studied in 1982. The responses of fifty four nurses from a large general medical center in the northeast who completed questionnaires indicted generally favorable attitudes toward utilization of nurse practitioners in an inpatient setting. However there were a number of uncertainties in the types of skills they should be able to perform i.e. testing eye grounds, body reflexes, interpreting EKG readings, or x-

rays. The researcher determined there was a need for both better delineation of the role of the nurse practitioner and resocialization of nurses to that role (Theiss, 1982).

Bezjak (1987) conducted a study concerning physician motivation to associate with nurse practitioners. Data was collected via mailed questionnaires from 58 Arizona physicians who were associated in practice with nurse practitioners. The questionnaire consisted of 19 suggested incentives for physician association with nurse practitioners. Questions evaluated on a 4 point degree of importance scale. Two demographic questions were included on the questionnaire. The results indicated that physician subjects are aware of the nurse practitioner's ability to increase accessibility to health care and the quality of the care. Economic incentives on the whole were a low priority for a majority of responding physicians. Year of graduation from medical school did not influence the physicians' perceived incentives for association. What was important was the physicians specialty area of practice. Low importance ratings of the internal medicine physicians may indicate resistance to extension of hospital privileges to nurse practitioners.

By the end of the 1980s nurse practitioners were differentiated by a number of additional categories, e.g., adult, geriatric, occupational health, women's health, school health, primary care, and psychiatric/mental health. NPs were employed in a variety of settings including rural

clinics and physician offices as well as health departments, hospitals (in ambulatory care, emergency departments, and inpatient units), industry and business, schools, nursing homes, and home health agencies (Bellet & Leeper, 1982; Bennett, 1984; Brooks & Johnson, 1986; Cruikshank & Lakan, 1986; Glasscock, Webster-Stratton, & McCarthy, 1985; Haden, Davies, & Clore, 1982; Scharon & Bernacki, 1984; Sobolewski, 1981; Weston, 1980; Wilber, Zoeller, Talashek, & Sullivan, 1990; Zimmer, Groth-Juncker, & McCusker, 1985). This differentiation and broadening of the utilization of nurse practitioners clearly points to the fact that the nurse practitioner role is an advanced practice role in nursing, not merely a physician substitute role.

Literature Review of the 1990s

Hupcey (1993) investigated factors that the work setting may influence nurse practitioner practice. In this study 91 nurse practitioners were surveyed with a questionnaire that was developed to compare the roles and utilization of master's-prepared nurse practitioners and non-master's-prepared nurse practitioners. Findings were consistent with earlier studies on the utilization of nurse practitioners. These studies showed that the main barrier to nurse practitioner practice was resistance from physicians and other health care workers.

Historically numerous comprehensive articles have been written on utilization of the nurse practitioner during the evolution of the role. The strengths of this literature lie

in amount of literature and the overwhelming majority of findings supporting the effectiveness of the nurse practitioner.

Limitations of this literature are the fact that many of the older studies could be more methodologically rigorous and better organized. Many of the initial articles were published during the early evolution of the role in the early 1970's and the amount of information published since then has tapered off.

Summary and Overview

In summary, the majority of these investigations about physician expectation for utilization of NPs were developed from specific cases of employment of individual nurse practitioners in one practice. Generally such studies were of short duration, involved a small sample of physicians, didn't relate to the military population and yielded limited descriptive information. Despite these limitations the recurrent findings in all these studies is that physicians have a strong influence on the role and utilization of nurse practitioners. With this conclusion it is therefore important to try to understand the current attitudes of outpatient Air Force physicians on the utilization of FNPs.

This review of literature represents thirty plus years of nurse practitioner utilization and shows a modest change in their utilization since their conception. The environment must be evaluated for changes in behaviors and attitudes

after implementation of these family nurse practitioners. Change theories will offer insight into the expected behaviors that evolve when significant change occurs within an environment (George 1990).

The next chapter will describe the research methodology and process. More specifically, it will be presented in a step by step process to include pilot studies, validity and reliability testing, instrumentation, approval process and protection of human subjects.

CHAPTER THREE METHODOLOGY

Introduction

The purpose of this thesis is to survey the attitudes of current Air Force outpatient physicians regarding the utilization of family nurse practitioners (FNPs). Air Force out-patient physicians are an integral part of the existing health care environment within the Air Force and their attitudes toward nurse practitioner utilization are unknown. This chapter will discuss the research design and research methods that were under taken in this study. It will describe the development of the questionnaire and techniques used to establish validity and reliability. It will also provide information on data collection, protection of human subjects, and research methodology in a step wise approach.

Description of Research

This study can be looked upon as a descriptive quantitative study in which the goal is to describe a sample of current Air Force out-patient physicians attitudes towards the utilization of nurse practitioners prior to their implementation.

Instrument Development

No valid, reliable tool was available for this study. Therefore a questionnaire for data collection was developed.

It was developed around the conceptual framework, Scheim's model for change. The change for the purposes of this study would be the introduction of FNPs into the Air Force health care environment. The environment being surveyed was the Air Force out patient physicians behaviors and attitudes towards NPs. Each question in the questionnaire was critiqued and analyzed as to its ability to asses current behaviors and attitudes of Air Force physicians perspectives on utilization of nurse practitioners.

Most of the survey questions were derived from the literature. The questions, "to increase the number of patients seen in the clinic" and "to increase the amount of patient education", were obtained from a 1985 study in which physician perceptions were surveyed for association with nurse practitioners (Bezjak, 1985). The questions, "to increase physicians' time for other professional activities" and "to increase the number of patients seen in the clinic", were tasks that were frequently performed by nurse practitioners as cited in a 1978 study (Levine et al., 1978). The questions, "to work as a practitioner in the Emergency room" and "to work as a practitioner in the primary care clinic" were questions regarding sites of utilization derived from information regarding the prior Air Force Primary Care Nurse Practitioner (Maroon, 1976). The question, "to be used for global humanitarian relief efforts" considers the potential for utilization within the current and projected Air Force health care environment.

The survey was designed to be short enough that subjects would complete it, but long enough to obtain the required information. Much thought was put into its arrangement and development regarding the integration of change theory and what impact each question has to potential change within the Air Force medical environment.

The instrument consisted of four parts. The first part included 14 items concerning factors that were suggested for the utilization of nurse practitioners. These factors were developed from the review of literature and included all ways NPs could, or have been utilized in both civilian and military settings. The category response was on a four-point scale ranging from "very important" to "not important".

The second part of the questionnaire had one yes/no question as to whether the surveyed physician had worked with an NP. Physicians who indicated they had worked with NPs were asked to respond to two additional questions regarding length of time they had worked with an NP and degree of comfort (rated on a four point scale)they felt working with NPs. The degree of comfort working with NPs was used because it hints at the confidence or trust that a physician may have in working with a NP. The final question in part two asked them if they would feel comfortable under the care of an NP? This question was used to help quantify the degree of confidence or faith that the physician has with NPs. Although this question topic was not discussed in the review of literature, this question was used in the

questionnaire because it could help quantify physician comfort with NPs.

The third part of the questionnaire included demographic information regarding the physicians' background, such as year of graduation from medical school and physician specialty area. The questionnaire ended with an open ended comments section that was deliberately placed to facilitate physician reactions to their own responses. See sample questionnaire in Appendix section.

Face and Content Validity

To ensure face validity all questionnaire items were inspected by thesis committee members during the proposal defense process to see if the instrument contained items relevant to the research questions. This was an interactive discussion and much input was debated to appropriately measure the variables.

Content validity experts in the field of nurse practitioner utilization were then asked to examine each item and to make judgments regarding how well the items and the instrument as a whole reflected the physicians' perspectives on utilization of nurse practitioners. Content experts were selected after discussion of nurse practitioner utilization with multiple members of the faculty at Uniformed Services University of the Health Sciences at Bethesda, MD.

The content experts consisted of a physician specialist with five years of extensive experience working with NP's

in multiple medical treatment facilities and a nurse practitioner, currently a doctoral candidate with 20 years of experience working with physicians in a variety of different settings.

Both content experts had extensive knowledge of the role and utilization of nurse practitioners. They also separately rated the degree of relevance of the items to the objective of the questionnaire. A Content Validity Index (CVI) of 0.89 was achieved, which is adequate for the purposes of this instrument(Polit & Hunger 1991). No revisions were made in the instrument after content validity was established by the content experts. Estimates of reliability were then obtained in the pilot study.

Pilot Study

A pilot study of the questionnaire was done with Air Force outpatient physicians at the family practice clinic at Malcolm Grow Medical Center, Andrews AFB, MD. These subjects were selected for the pilot study because it was believed they were representative of the population of all outpatient physicians in Air Force medical treatment facilities. They were also an easily assessable population.

Reliability

In order to determine stability of responses to items on the instrument, a form of reliability, a test-retest procedure was performed. With the permission of the commander of the family practice clinic at Andrews Force Base MD a pilot study was conducted using the family

practice interns and staff physicians. At morning report on June 15, 1995 14 physicians volunteered to participate in the study and completed the questionnaire. Two weeks later at morning report under the same conditions 11 of the original 14 physicians voluntarily filled out the survey a second time. The 11 physician respondents questionnaires were compared to determine if the responses would be the same over time. The responses were determined to be similar on 86 percent of the items. Hence supporting evidence for stability or test-retest reliability was obtained using this instrument with this population. For most purposes, reliability coefficients above 70% are considered satisfactory. The higher the coefficient, the more stable the measure. (Polit & Hunger 1991).

Approval Process

Approvals for this study were obtained from the thesis committee, Institutional Review Board (IRB) at Uniformed Services University of the Health Sciences, and the Air Force survey approval branch at Randolph AFB, TX. Once an approval number was assigned to the questionnaire, there was no need to contact each individual medical treatment facility IRB for individual facility approval. A courtesy letter was sent to representing medical treatment facility commanders and nurse executives to notify them of the prospective research, its purpose and the name of principle investigator for follow up contact. Every effort was made to ensure a high quality of research procedures that adhered to

professional, legal, and social obligations to the research subjects.

Protection of Human Subjects

This was an anonymous survey and participation was voluntary, filling out the questionnaire was perceived as consent to participate. Anonymity of the subjects was preserved at all times. Names of individuals participating were not known and no follow-up was attempted. There was no risk to participants. All data was presented on the aggregate.

Sample

A convenience sample was drawn from the population of active duty Air Force outpatient physicians. The sample was drawn from four Air Force medical treatment facilities. These facilities ranged in size from a major medical center to a clinic. The four selected Air Force facilities were chosen due to their proximity and mixture in sizes. No sample control was implied in the selection of the various medical treatment facilities.

The questionnaire was distributed to the mail boxes of all current Air Force outpatient physicians at the four Air Force medical treatment facilities. It is assumed that each outpatient Air Force physician has an accessible mail box. Provisions were not made to identify from which facility the surveys were received.

Process

Due to the close proximity of several of the facilities the principle investigator was able to hand deliver the survey. Contact people were selected to distribute the questionnaires to facilities outside of the immediate area. These people were chosen due to previous working experience with the principle investigator and witnessed integrity. Listed below are the four sites or facilities and the contact person at each site responsible for distribution of the questionnaire.

Site 1: A 200 bed Air Force Medical Center in the Northeastern, U.S. The survey was distributed by the principle investigator.

Site 2: A free standing Air Force Clinic in the Northeastern, U.S. The survey was distributed by the principle investigator.

Site 3: A 60 bed Air Force Hospital in the Mid Atlantic region of the U.S. The survey was distributed by a research proxy, an Air Force active duty Captain.

Site 4: A 300 bed Air Force Regional Medical Center located In the Midwestern U.S. The survey was distributed by a research proxy, an Air Force active duty Lieutenant Colonel.

Contact people were instructed in the importance of attempted distribution of the questionnaire to all Air Force outpatient physicians and were given a list of all clinics that were participating in the study.

Each physician received a cover letter, a questionnaire and a pre-addressed stamped envelope. The cover letter described the purpose of the study and provided information regarding how to contact the principal investigator if there were any questions. Physicians were instructed to complete the questionnaire, place it in the pre-addressed stamped envelope, and mail to the home address of the principle investigator.

Summary and Overview

This chapter describes the methodology used in this research study. The study was conducted at four Air Force medical treatment facilities in the Eastern and Midwestern United States. Estimates of reliability and validity were obtained for use of this instrument with this population. The instrument was placed in physicians mailboxes and mailed back to the principle investigator. The next chapter will discuss the way the data collected from the questionnaire was coded and analyzed.

CHAPTER FOUR DATA ANALYSIS

Introduction

The purpose of this thesis is to survey the attitudes of a sample current Air Force outpatient physicians regarding the utilization of family nurse practitioners (FNPs). Air Force out-patient physicians are an integral part of the existing health care environment within the Air Force and their attitudes toward nurse practitioner utilization are unknown. This study will describe a sample of current Air Force out-patient physicians attitudes towards the utilization of family nurse practitioners prior to their introduction into Air Force clinics.

This chapter will discuss the variables individually using descriptive statistics and when applicable comparatively using inferential statistics. Each variable and comparison will include a written narrative summary or summary table with emphasis placed on clarity and understanding of its components.

Data were collected from the Air Force out patient physician subjects via a mail questionnaire and explanatory cover letter given to 260 physicians at four Air Force medical treatment facilities. Thirty days after the initial distribution, 53 % (N=137) of the questionnaires were returned. Six of the returned questionnaires contained insufficient information and were therefore omitted from

data analysis. One hundred twenty three questionnaires were not returned. The study group comprised a total of 131 subjects, a 51% total response rate, from 17 different physician specialties, with a maximum of 33 years of physician experience. Data were analyzed using descriptive and inferential statistics, Using the SPSS programs.

This chapter is organized so that the findings regarding each statistical application will be presented. The data analysis will include descriptive and inferential statistics to examine the research questions that will be discussed later in Chapter 5. At the conclusion of the chapter the written comments on the survey will be discussed.

Findings Regarding Utilization of FNPs

The first 14 questions of the survey were suggested factors for utilization of Family Nurse Practitioners within the Air Force. These questions were derived from the review of literature as potential factors for utilization within the Air Force. These fourteen questions were intended to answer the first research question.

The physicians noted the 14 factors that describe reasons for utilization of FNPs on a four point scale that measured degree of importance (Table 1). After entering the data into SPSS program it was reverse coded so that "1"

indicates "not important" and "4" indicates "very important" so that the higher the grade translated to greater the importance.

Table 1

Ranked physician responses regarding degree of importance of suggested factors for the utilization of FNPs.

Suggested Factors for Utilization	Mean	SD
*To increase the amount of patient education provided?	3.44	.76
*To increase the amount of counseling given to patients?	3.35	.78
*To allow physicians to spend more time on complex cases?	3.28	.74
*To increase the number of patients seen in the clinic?	3.05	.83
*To work as a practitioner in the primary care clinic?	2.97	.82
*To provide comprehensive health services?	2.95	.95
*To work as a practitioner in the family practice clinic?	2.91	.84
*To increase time for other professional activities?	2.75	.86
*To work in any clinic that has the need?	2.67	.95
*To increase attention given to secondary problems and symptoms?	2.55	.87
*To be used for global humanitarian relief efforts?	2.48	.99
*To work as a practitioner in the emergency room?	2.18	.97
*To take some of the "on call" load?	1.93	.95
*To replace physician assistants?	1.43	.76

The suggested factors for utilization are ranked in order of mean rating. Responses with a higher mean score are more important factors for the utilization of nurse

practitioners. Standard deviations of the mean are also shown in Table 1.

This sample of current Air Force outpatient physicians showed more consistency in the responses to the questions: to increase the amount of patient education provided, to increase the amount of counseling given to patients, and to allow physicians to spend more time on complex cases.

Findings regarding comfort with NPs

When the sampled physicians were asked the "extent of comfort felt with a nurse practitioner" their responses were very favorable towards NPs. Sixty five percent felt "comfortable" or "very comfortable" with NPs. Only three percent felt "not comfortable" with working with an NP. Once entered into SPSS, the four point rating scale was reverse coded so that "1" indicates "not comfortable" and "4" indicates "very comfortable".

Findings Regarding Physician Specialty

Table 2

Descriptive statistics to Physician Specialty

Physician Specialty	Frequency	Percent
Pediatrics	26	19.8
Internal Medicine	25	19.6
Family Practice	23	17.6
Emergency Room	15	11.5
OB-GYN	11	8.4
Surgery	11	8.4
Other*	20	15.3
Total	131	100.0

* Physician Specialties with 10 or less respondents

This table shows that the majority of respondents were from three main physician specialties, Pediatrics, Internal Medicine, and Family Practice.

Due to the varied response rate of 18 different physician specialties 12 physician specialties were truncated into a category called "other" because they had 10 or less respondents. Physician specialties truncated were Orthopedics, Cardiology, G.I., Intern/General Medical Officer, Rheumatology, Urology, Flight Surgery, Infectious Disease, Pulmonology, Neurology, and Neonatology. Another reason for this truncation is that it was felt that with

such a minimal response rate in these physician specialties that they did not truly represent that physician specialty. The remaining 6 physician specialties had frequencies equal to or greater than 11 and therefore their responses reflect a more accurate representation of the specialty.

Findings Regarding Physician Specialty and Physician Comfort Working with NPs

This comparison could be analyzed using both inferential and descriptive statistics. When physician specialty and physician comfort were compared using descriptive statistics the results were listed in Table 3.

Table 3

Mean ratings comparing type of physician specialty with physician level of comfort working with NPs.

Physician Specialty	Number	Mean	SD
Pediatric	26	3.30	.88
OB-GYN	11	3.18	.87
Family Practice	23	2.50	1.41
Surgery	11	1.9	1.75
Internal Medicine	25	1.8	1.57
Emergency Room	15	1.73	1.83

This table shows that there is a difference in physician comfort in working with NPs between the different sampled physician specialties throughout the Air Force. Pediatric and OB-GYN physicians have a much higher level of

comfort (mean > 3)and more consistent responses (standard deviation <1) than do Surgery, Internal Medicine, and Emergency Room physicians (mean <2).

The data were analyzed by ANOVA as seen in Table 4.

Table 4

ANOVA comparing type of physician specialty with physician level of comfort working with NPs.

Source	Sum of Squares	DF	Mean	F
Main effects	9.332	6	1.55	1.462
Residual	131.890	6	124	1.462
Total	141.221	6	130	1.462

The F value for the ANOVA comparing the group physician level of comfort in working with NPs by specialty is 1.462, not significant at the .05 level.

Findings Regarding Physician Comfort Under the Care of an NP

In the question "Would you feel comfortable under the care of an NP", seventy four percent (n=97) of the sampled physicians indicated they would feel comfortable under the care of an NP. This is a significant amount of trust that they show towards NPs.

Findings Regarding Physician Specialty and Comfort Under the Care of an NP.

Due to the nature of the variables a crosstabs and chi-

square analysis were performed. These procedures reveal both descriptive (crosstabs) and inferential (chi-square)result. Results of the analysis are listed in Table 5.

Table 5

Crosstabs comparing physician specialty with physician comfort under the care of an NP.

Physician Specialty	Number	% Who felt comfortable
OB-GYN	11	91%
Pediatric	26	85%
Family Practice	23	78%
Internal Medicine	25	68%
Emergency Room	15	67%
Surgery	11	64%

Table 5 suggests a difference in sampled physicians specialties and comfort under the care of a NP. OB-GYN and Pediatric physicians have greater comfort than Internal Medicine, Emergency Room, and Surgery.

The chi-square value of 5.72 with six degrees of freedom p=.4548, however, indicated no statistical significant relationship between physician specialty and physician comfort under the care of an NP.

Findings Regarding Demographic Data

Sampled physicians responses to the question regarding "year of graduation from medical school" shows a wide range

of years in practice. This information was collapsed into two categories of ten or less years since medical school and ten or more years since medical school (1962-1984 and 1985-1995)respectively. This was a distinction that needed to be made between ages of physicians to differentiate between physician groups. One group being new physicians and the other being older experienced physicians. The majority of physicians surveyed were younger. Eighty one percent (n=106) of the physician respondents had graduated from medical school within the last 10 years and nineteen percent (n=25) had been out of medical school for more than ten years.

Findings Regarding Physician Year of Graduation From Medical School and Comfort Level With NPs

Due to the nature of the variables a crosstabs and chi square analysis were performed. Results are on Table 6.

Table 6

Crosstabs comparing physician year of graduation from medical school and physician comfort (1-4 scale) working with NPs.

Graduation from school	Very Comfortable	Slightly Comfortable	Comfortable	Not Comfortable
1962-1985	56%	34%	5%	5%
1986-1995	43%	39%	9%	9%

As seen in Table 6 there is a difference in the sampled physicians time of graduation from medical school and the comfort they have in working with NPs. Older physicians (graduated between 1962-1985) have a higher "very comfortable" rate (56%) than younger physicians (graduated between 1996-1995)whose "very comfortable" response rate was (43%). This difference was significant at the .05 level using a t-test of the difference between populations.

Findings Regarding Physician Year of Graduation From Medical School and Reported Comfort Under the Care of an NP

Due to the nature of the variables a crosstabs and chi-square analysis were performed. These data investigations reveal both a descriptive (crosstabs) and inferential (chi-square)result. Results of the cross tabs analysis are listed in Table 7.

Table 7

Crosstabs comparing physicians year of graduation from medical school and physician comfort under the care of an NP.

Year of graduation from medical school	Comfortable Yes
1962-1985	92%
1986-1995	70%

This table shows that the longer it has been since the sampled physicians have graduated from medical school the more comfort they feel under the care of a NP.

The chi-square value for these variables shows a pearson value of 5.18 with one degree of freedom and a significance of .023. This shows a significant relationship between the variables. Inferential statistics indicate that the longer it has been since a physician has graduated from medical school the more comfort they would feel under the care of a NP.

Findings Regarding Length of Time Physician Has Worked With NP

Sampled physicians responses to the question "How long have you worked with a Nurse Practitioner?" were collapsed into three categories. The first category consisted of physicians that had not worked with NPs (26%), the second category consisted of physicians that had worked with NPs between 1-24 months, simulating an initial orientation type work relationship(45%), and the third category was labeled as greater than 24 months simulating an extensive work relationship (29%). It was reasoned that for the purposes of this study these intervals were sufficient to accurately

reflect variations in working relationships due to length of time having worked with an NP.

Findings Regarding Length of Time Physician Has Worked With an NP and Comfort Under the Care of an NP.

Due to the nature of the variables a crosstabs and chi-square analysis were performed. These data investigations reveal both a descriptive (crosstabs) and inferential (chi-square) results. Results of the crosstab analysis are listed in Table 8.

Table 8

Crosstabs comparing the time a physician has worked with an NPs and physician comfort (yes/no) under the care of an NP.

Time worked NP	Percent Yes
Never worked with NP	57%
1-24 months	76%
25 or greater months	86%

Table 8 shows through descriptive statistics that the longer that the sampled physicians have worked with a NP, the greater the comfort that they would feel under their care. Physicians that have never worked with NPs had an even lower (57%) comfort rate.

Chi-square results of this analysis reveal a pearson value of 8.33 with two degrees of freedom and a significance of .01549. This indicates through inferential statistics that there is a significant relationship between year of graduation from medical school and physician comfort under the care of a NP within the sampled physicians. The longer that a physician has worked with a NP, the greater the comfort that they feel under their care.

Findings Regarding Physicians Working With NPs.

Seventy three percent (N=107)of the sampled physicians indicated that they had worked with a NP. This indicates that the majority of physicians have worked with NPs.

Findings Regarding Physician Specialty and Physician Experience Working With an NP

Due to the nature of the variables a crosstabs and chi-square analysis were performed. These data investigations reveal both a descriptive (crosstabs) and inferential (chi-square)result. Results of the crosstab analysis are listed in the next table.

Table 9.

Crosstabs comparing physician experience with NPs (yes or no) and physician specialty.

Physician Specialty	Percent Yes Response
OB-GYN	100%
Pediatrics	96%
Family Practice	83%
Surgery	64%
Internal Medicine	60%
Emergency Room	53%

This table shows that sampled physician specialties have different response rates in working with nurse practitioners. All the OB-GYN physicians that responded to the survey had worked with a NP and 96% of the pediatric physicians had also. Conversely only 60% on Internal Medicine and 53% of Emergency Room physicians had worked with NPs.

The chi-square value for this analysis reveals a pearson value of 21.21 with six degrees of freedom and a significance of .0016. This demonstrates significance between the variables of physician specialties and experience with nurse practitioners.

Findings Regarding Physician Responses to "Where do you Think FNPs Should Work?"

One hundred ninety seven responses were obtained from

96 physicians, with some physicians providing more than one response. Responses were organized by location categories as illustrated in Table 10.

Table 10

Physicians responses to "where do you think FNPs should work" (N=197).

Physician Response	Number	%Total
Primary Care Clinic	69	36
Family Practice Clinic	54	27
Any Clinic	34	17
Emergency Room	16	8
OB-GYN Clinic	10	5
Pediatric Clinic	8	4
Internal Medicine Clinic	6	3
Total	197	100

This table illustrates that a clear majority of sampled physicians (63%) indicate that FNPs should work in either family practice or primary care clinics. Conversely few physicians think FNPs should work in the Pediatric Clinic (4%) or the Internal Medicine Clinic (3%).

Questionnaire Comments

Approximately 30% of the Air Force outpatient physicians that responded to the questionnaire provided additional comments in the designated space. All those pertinent to this study were printed in their entirely.

Every effort was made to copy the remarks as they were written with the omission of names and vulgar terms.

After discussion and reflection with several peers these comments were placed in four arbitrary categories. Positive comments about the utilization of FNPs comprised 36% of the responses. Negative responses about the utilization of FNPs encompassed 22% of the responses. Neutral responses (responses that could not be determined to reflect bias about the utilization of FNPs) constituted 32% of the responses. Comments that reflect opinion on the utilization of nurse practitioners versus physician assistants were 10% of the responses.

Positive Comments

Comments that reflect a positive use or utilization within the Air Force health care environment. Examples:

* NPs are an under utilized resource.

* I have little exposure with nurse practitioners, but on interacting and working with them my limited experiences have been solid.

* I really respect nurse practitioners. I am in favor of their presence in our clinic.

* I love having PNPs to work with. With few exceptions, PNPs provide BETTER pediatric care then Family Practitioners. The only drawback is they (PNPs) can't take call, and probably shouldn't have to.

* I've had a very good experience with a Nurse Practitioner. I trust them.

* NP's are an under utilized resource in the Air Force. If we had only one NP here I could probably increase my practice by 50%.

* We use 2 GYN NP's in our clinic which has been very successful.

* My one experience with a NP was very positive!! Should replace PA's over time and stop wasting your money with dumb questionnaires and just do it!

* I choose to go to a NP for routine GYN care.

* NP's can deliver high quality primary Care. I've worked with an exceptionally good PNP.

* A well trained NP is invaluable to primary care clinic care area.

* Better patient care and increased number of patients seen would be better accomplished with decreased paperwork.

NP can help by decreasing number of daily acute patients and same day appointments.

Negative Comments

Comments that reflect a negative use or utilization within the Air Force health care environment. Examples:

* In my experience NP's have greatly increased our workload by inappropriately referring many patients. They should not be allowed to refer patients to a specialist unless they have been seen by a physician.

* In the Air Force they tell us to see fewer patients and spend less money. We don't need PA's or Nurse Practitioners we need more technical support and I could see 3-4 times as many patients.

* My experience is that poorly trained NPs generate more work by inappropriate consults than assuming routine workload.

* There are too many so called physician extends already. If you want to play doctor go to medical school !!

* The best approach to increasing the number of patients we see a would be to increase technician support.

Neutral Comments

Comments that are informative but neither positive nor negative towards the utilization of nurse practitioners. Examples:

* Nurse Practitioners Programs are not well standardized. Quality of NP product varies greatly among institutions and must be evaluated on case by case basis. Air Force should develop standards to which NPs should be held and a means to test them.

* Excellent survey subject.

* I think NP's have a role, but it should be limited to Primary Care Clinic, GYN, and possibly pediatric well clinic. They also can play an important role in patient education (DM training, HTN, diet, etc.). They should not be working directly with patients who have multiple medical problems, such as Internal Medicine. As example of how I have seen NPs used in a great way is in routine GYN (PaP, Pelvic, Breast) Exams.

* Role should be limited to routine complaints, including coryza, physical exams, pelvics, and patient education.

* Enhancing quality of care should be the emphasis rather than replace other providers.

* Supervision of nurse practitioners by physicians is important. I don't support independent practice.

* I have had little experience with FNP's. I did work with PNP's for 2 years who was very knowledgeable, remained current, was thorough and knew when a clinical problem was greater than her skills.

* My feelings regarding FNPs mainly derives from numerous FP-PA's that I have worked with. My concerns with them is that the majority were not fully trained to tackle the vast array of clinical diseases that encompass FP. in contrast to more specialized PA's (ortho, ER, etc.). And so, by comparison, I have reservations that the short duration of training in an FNP program may be inadequate to cover the scope of clinical problems in FP. Certainly, there can be exceptions (i.e., the FNP who pursues ongoing medical education after formal training, and who is able to seek help for complex cases.)

* Their utilization depends on the person, like all else in medicine.

* Would avoid expansion of nurse practitioner responsibility for which they were not trained.

Nurse Practitioner Versus Physician Assistant Comments

Comments that reflect opinion on the utilization of physician assistants versus nurse practitioners. Examples:

* I wish the Air Force would replace all PA's with NP's as NP's have better knowledge and know when they need help. (And I say this as someone who was physician director of Air Force PA Phase II training at one time!).

* As a former Physician Assistant I find question # 9 (To replace physician assistants) distasteful. I think that mid-level health care providers are an important concept and that there is certainly room for both disciplines.

This form suggests that at least in some ones mind, nurse practitioners are a preferable alternative. Obviously, I am speaking from a somewhat biased perspective, but I fervently believe that physician assistant are as well trained as NP's and are capable of performing in all the ways outlined in this survey on the reverse.

Further I would like to point out the wonderful incentive that physician assistant training has provided for

out-standing young enlisted people in the Air Force. I am proud to have served over the years with these officers, and feel confident that they will continue to excel in their fields.

One last thought - ask some of the hundreds of thousands of patients who have been treated by physician assistants throughout the Air Force Medical Service. It would be interesting indeed to see how many of them would feel that they would have been better served by a nurse practitioner.

* NP's should not be utilized to replace PA's who often have more extensive training but to supplement shortage. As where I do extensive counseling and do not buy off on the assumption that Doctors, provide poor counseling and patient teaching and that only nurses do this well. Same goes for comprehensive care.

Summary and Overview

This chapter has described the sample characteristics of the data collected from the physician responses on the survey. It discussed the variables individually using descriptive statistics and comparatively using inferential statistics to answer the research questions.

CHAPTER FIVE CONCLUSIONS

Introduction

The purpose of this thesis is to survey the attitudes of current Air Force outpatient physicians regarding the utilization of family nurse practitioners (FNPs). Air Force out-patient physicians are an integral part of the existing health care environment within the Air Force and their attitudes toward nurse practitioner utilization are unknown. This study will describe a sample of Air Force out-patient physicians attitudes towards the utilization of FNPs prior to their introduction into Air Force clinics.

As stated in the theoretical framework, "if change is to be quantified, a baseline survey of the attitudes within the stable equilibrium must transpire." Although this convenience sample of current Air Force physicians may not be representative of all current out patient Air Force Physicians. This sample can be considered a "snap shot" in time of the physicians attitudes in the various facilities being surveyed. It must be prefaced that each research question was analyzed with the intent of gathering information to quantify change, although it is not feasible to do so with this particular sample of physicians.

This is the final chapter and it will present each research question and interpret the findings for each question. Discussion will include the significance of the study, recommendations on use of this information, suggested modifications and additional research in this area that would be a logical outgrowth of this work.

Conclusions regarding Research Question Number One

What are the perceptions of Air Force outpatient physicians regarding the utilization of FNPs?

This research question is answered with the four most important and four least important factors for utilization listed below.

The four most important factors for utilization:

1. To increase the amount of patient education provided.

2. To increase the amount of counseling given to patients.

3. To allow physicians to spend more time on complex cases.

4. To increase the number of patients seen in the clinic.

The four least important factors for utilization associations:

1. To be used for global humanitarian relief efforts.

2. To work as a practitioner in the emergency room.

3. To take some of the "on call" load.

4. To replace physician assistants.

In conclusion, These Air Force outpatient physicians seem to have a good grasp on the traditional utilization of the nurse practitioner. The perceptions of current Air Force out-patient physicians regarding the utilization of FNPs are similar to the NP scope of practice which emphasizes counseling and education of clients as their primary focus. The other factors of utilization such as allowing physicians to spend more time on complex cases and to increase the number of patients seen in the clinic are also strongly based in the NP literature as factors for utilization. The factors that were least important for utilization were factors that were consistently minor factors for utilization of NPs an noted in the review of the literature. One exception to this would be the factor "to be used for humanitarian relief efforts" and that factor is unique to the military.

Conclusions Regarding Research Question Number Two

Is there an association between type of physician specialty and physician level of comfort working with NPs?

This question was analyzed by using Analysis of Variance (ANOVA) with an F value of 1.462 observed. It could not be determined that the sampled physician specialties reflected different comfort levels with NPs.

Conclusions Regarding Research Question Number Three

Is there a significant relationship between type of physician specialty and physician comfort under the care of an NP?

Using chi-square analyses with significance placed at the .05 level, The chi-square value of 5.72 with six degrees of freedom and p=.4548 indicates no significant relationship between sampled physician specialty and physician comfort under the care of an NP.

A moment may be taken here to comment on the significance of this chi square value. Bias and altered significance can result from small sample size and low degrees of freedom in the analysis of chi square (Shontz, 1986). Since the sample size within each group is relatively small it could affect the ability to detect statistically significant differences in the groups.

Conclusions Regarding Research Question Number Four

Is there a significant relationship between the physicians year of graduation from medical school and physicians comfort with working with NPs?

Initial analyses were directed at establishing comparability's between sampled groups. (t =.002) It was found that these two groups differed significantly with the longer since graduating from medical school group having a higher mean comfort score than the group of physicians graduating more recently from medical school.

Within this sample of current Air Force out-patient physicians, the longer they have been out of medical school (graduation dates between 1962-1985) the more comfort they have in working with NPs.

On the other hand newer physicians may have had direct experience in school and training with NPs. In other studies resistance to NP role has come from older physicians who have not worked with NPs.

Conclusion Regarding Research Question Number Five

Is there a significant relationship between physicians year of graduation from medical school and physician comfort under the care of an NP?

Using chi-square analyses with significance placed at the .05 level, a significant relationship was found between sampled physicians year of graduation from medical school (categorized as before 1986 or earlier and after 1986) and physician comfort under the care of an NP.

Perhaps older physicians are more confident in their professional medical attitudes and are open to other practitioners suggestions and treatments. They may perceive the nurse practitioner as non competitive due to their focus on connecting with patients, offering patient education, and counseling options rather than pharmaceuticals.

Conclusion Regarding Research Question Number Six

Is there a significant relationship between the time a physician has worked with an NP and physician comfort under the care of an NP?

Chi-square results of this analysis reveal a Pearson value of 8.33 with two degrees of freedom and a significance of .01549. This indicates that there is a significant relationship between year of graduation from medical school and physician comfort under the care of a NP.

Sampled current Air Force, out-patient physicians that had worked longer with a NP had a significantly greater

number of respondents that indicated that they would be comfortable under the care of an NP.

Air Force out patient physicians gain confidence in Nurse Practitioners the longer they work with them. This confidence is manifested by the physician having enough comfort and trust in the NP's abilities to let them care for them.

Conclusions Regarding Research Number Seven

Is there a significant relationship between physician specialty and physician experience with an NP?

The chi-square value for this analysis reveals a Pearson value of 21.21 with six degrees of freedom and a significance of .0016, falling below the .05 level of significance. This demonstrates a significant relationship between the sampled variables of physician specialties and experience with nurse practitioners.

Within the sampled Air Force out-patient environment there are physician specialties that have worked more with NPs. This may be reflective of the current utilization of pediatric and woman's health nurse practitioners in the Air Force. All of the OB-GYN physicians have worked with NPs and 96% of the pediatric physicians have worked with NPs.

The Air Force has not traditionally used adult nurse practitioners in their other clinics.

Conclusions Regarding Unplanned Matters

The question "to replace physician assistants" was the topic of much debate on the written responses by the physicians. Some of the sampled physicians have opposition to this and several of the physicians supported it. This question was in no way intended to judge preferences as to which type of mid-level provider is better suited for out-patient clinics in the Air Force. It was only intended to be a suggested factor for the utilization of FNPs.

Upon distribution of the questionnaire, several of them were inadvertently placed in PA mailboxes and returned to the principal investigator. These questionnaires contained aggressive and threatening information. This information suggests that some PAs may perceive NPs as a threat to them.

A telephone call was received from one of the PA's who had inadvertently received a survey. He received the principle investigators telephone number from the cover letter. He voiced concerns about PAs loosing their jobs to NPs and he did not want this to happen. He had observed in the past that most of the Air Force Clinics have Nurse Corps

office managers. Nurses tend to have higher rank and therefore more power within the Air Force medical environment than PAs. He had a high ranking clinic Nurse corps manager verbally admit to him that she wished that the Air Force would replace PAs with NPs and this was disheartening to him. He therefore perceived NPs as a threat to his job.

Summary

The results indicate that this physician sample perceives the utilization of FNPs to increase the amount of education and counseling given to patients, to allow physicians to spend more time on complex cases, and to increase the number of patients seen in the clinic. Physicians surveyed perceive that FNPs should be placed in the primary care and family practice clinics. The longer a physician has worked with an NP the greater the level of comfort that the physician has with NPs and they feel more comfortable under the care of an NP. The longer it has been since a physician has graduated from medical school the greater the level of comfort that the physician has with NPs and more comfortable they would feel under the care of an NP.

Recommendations for Research

A research study similar to this with much tighter control of the sample population should be performed. An attempt to establish base line estimates to better represent the environment and the change within the health care environment with subsequent surveys is paramount.

If this instrument is to be used several survey questions need to be modified or omitted. The question "Have you ever worked with a nurse practitioner" did not address several important aspects about physician / NP workings. To what extent did they work together? What type of working relationship did the physician have with the NP? Did they directly supervise, have a collegial relationship with, or did they simply take referrals or from NPs? Did the physician say yes to the question if they simply were aware that NPs worked in the same facility? This question was left up to the physician to interpret what "worked with" meant.

The question "to replace physicians assistants" could be dropped from the questionnaire. It could potentially place strain on the NP/PA relationship and this was not the intent nor the focus of this study. Mid level providers should work collectively and collaboratively within the

health care environment as a team. However it was perhaps the most provocative finding and it could be pursued rather than omitted.

Recommendations for Clinical Practice

Since there are currently no FNP's in current clinical practice within the Air Force. Recommendations should be made to do follow up studies on the attitudes of FNPs on how they perceive their utilization after two years of practice. Are physicians as receptive to their utilization as this study would indicate? Is their practice restrictive? Should they be utilized in other areas? These and many other questions should be asked to evaluate their clinical practice.

Recommendations for Education

This study should be published in a professional military medical journal where it will be read by all allied health professions from all branches of the military services. All allied health professions will benefit from this information especially the medical and nurse practitioner groups.

Physicians will benefit by knowing how a sample of their peers and colleagues feel and perceive the utilization

of nurse practitioners. That many physicians are receptive and interested in the utilization of FNPs. It may be helpfull to share that this sample of curent Air Force out patient physicians perceptions of utilization of FNPs is congruent with traditional NP practice.

This study should be disseminated to nurse practitioners within the Air Force and other military services to educate them on the results of this sample Air Force physicians have towards their utilization.

This study should be made part of the curriculum in the Nursing Role course offered to first semester graduate nursing students at Uniformed Services University of the Health Sciences as part of their studies. This information may influence their attitudes of the nurse/physician relationships within the Air Force medical environment and their eventual utilization as a family nurse practitioner.

Final Conclusions

Along the course of the study there was one serendipitous issue that was very perplexing. That was the issue of power and gender relationships between physicians, nurse practitioners, and physician assistants within the

health care environment. Time should be found to study these issues.

This study has many strengths in its methodologically rigorous instrument development with satisfactory test-retest and content validity index scores. The research process was upheld with high moral character with human subjects, survey control number approvals and courtesy letters. The response rate was at 51% and the total number of respondents (N=131) was greater than similar studies of the same kind in the civilian environment (Bezjak, 1987; Levine et al, 1978). Statistical analysis was focused to analyze the data with the most statistically relevant procedure available.

This study also has many limitations in the area of sampling. Because of the size, cost of surveying, time involved in sampling and lack of accessibility to the total sample, major limitations were acknowledged. With the convenience and nonprobability sampling performed in this research it leaves the study with no ability to estimate the findings to the target population with any given degree of certainty.

It is hoped that this study has contributed to the Air Force medical service environment by providing a "snap shot" of the perceptions of the sampled current Air Force outpatient physicians. As with much initial research, growth can be experienced from its work. It has attempted to answer the initial research questions within the confounds of its limitations. Further research is needed in this area.

Appendix A

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCE
GRADUATE SCHOOL OF NURSING
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

NURSE PRACTITIONER SURVEY

The following questions have been suggested as factors for utilization of Family Nurse Practitioners within the Air Force. Please circle the number or answer you feel appropriate.	Very Important	Important	Slightly Important	Not Important
1) To increase the number of patients seen in the clinic?	1	2	3	4
2) To allow physician(s) to spend more time on complex cases?	1	2	3	4
3) To increase physician's time for other professional activities?	1	2	3	4
4) To take some of the "on call" load?	1	2	3	4
5) To provide comprehensive health services?	1	2	3	4
6) To increase the amount of counseling given to patients?	1	2	3	4
7) To increase the amount of patient education provided?	1	2	3	4
8) To be used for global humanitarian relief efforts?	1	2	3	4
9) To replace physician assistants?	1	2	3	4
10) To increase the amount of attention given to secondary problems and symptoms?	1	2	3	4
11) To work as a practitioner in the family practice clinic?	1	2	3	4
12) To work as a practitioner in the primary care clinic?	1	2	3	4
13) To work as a practitioner in any clinic that has the need?	1	2	3	4
15) To work as a practitioner in the Emergency Room.	1	2	3	4

16) Where do you think an FNP should work?

_____

17) Have you ever worked with a nurse practitioner (NP) ? Yes No If yes how long? Years_____ Months_____

	Very Comfortable	Comfortable	Slightly Comfortable	Not Comfortable
18) If yes, extent of comfort you felt with the NP?	1	2	3	4

19) Would you feel comfortable under the care of an NP? Yes No

20) Physician specialty:_____

21) Year of graduation from medical school:_____

Comments:_____

THANK YOU FOR YOUR TIME!!

Air Force Survey Control Number SCN 95-53

Appendix B

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCE
GRADUATE SCHOOL OF NURSING
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

Dear Outpatient Physician:

Please take several minutes to fill out this simple survey. Your time will be greatly appreciated. Seal it in the addressed envelope provided, and then place it where it can be mailed through the U. S. Postal system.

The information provided by you and your colleagues will be anonymous and the confidentiality of the returns will be preserved. This information will be used to help prepare family nurse practitioner (FNP) students for the Air Force medical service environment they will be entering upon their graduation in the spring of 1996.

This survey has been approved by the Air Force Approval Branch, Randolph AFB, TX. Much time and thought has been put into its development. Any comments or opinions on its improvement can be written on the survey and they will be greatly appreciated.

Once again Thank You!

Sincerely

Capt Patrick Bertz, NC, USAF
FNP Student, USUHS, Bethesda, MD
HP: (301) 599-0661
WP:(301) 295-1992

Appendix C

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCE
GRADUATE SCHOOL OF NURSING
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

Dear Nurse Executive, 19 August 1995

The Graduate School of Nursing at the Uniformed Sciences University of the Health Sciences (USUH are educating Family Nurse Practitioners (FNPs). The Air Force will soon be implementing these FNP graduates in its medical treatment facilities. The first class of FNPs will be graduating from USUHS in May 1996. A concern of the school and its students is the health care environment in which they will be practicing. To better understand this environment a survey has been developed to help determine and understand the attitudes of current Air Force out patient physicians towards the utilization of FNPs.

This is a courtesy letter to let you know you that the physicians in your facility will soon be asked to fil out this survey. It will be placed in their mail box with an addressed stamped envelope included to expedite its return. The survey has been approved by the Survey Control Branch within the Air Force, at Randolph AFB, TX. With this approval it is not required for this study to be approved by the Institutional Review Board at your facility.

If you would like more information on this survey or its results please contact,

Capt Patrick E Bertz
2023 A Bedford SQ
AAFB, MD
20335

(H) 301 599-0661
(W) 301 295 1992

Appendix D

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCE
GRADUATE SCHOOL OF NURSING
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

Dear Hospital Commander,

19 August 1995

The Graduate School of Nursing at the Uniformed Sciences University of the Health Sciences (USUHS) are educating Family Nurse Practitioners (FNPs). The Air Force will soon be implementing these FNP graduates in its medical treatment facilities. The first class of FNPs will be graduating from USUHS in May of 1996. A concern of the school and its students is the health care environment in which they will be practicing. To better understand this environment a survey has been developed to help determine and understand the attitudes of current Air Force out patient physicians towards the utilization of FNPs.

This is a courtesy letter to let you know you that the physicians in your facility will soon be asked to fill out this survey. It will be placed in their mail box with an addressed stamped envelope included to expedite its return. The survey has been approved by the Survey Control Branch within the Air Force, at Randolph AFB, TX. With this approval it is not required for this study to be approved by the Institutional Review Board at your facility.

If you would like more information on this survey or its results please contact,

Capt Patrick E Bertz
2023 A Bedford SQ
AAFB, MD
20335

(H) 301 599-0661
(W) 301 295 1992

Appendix E

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

September 25, 1995

MEMORANDUM FOR PATRICK E. BERTZ, CAPT, NC, USAF, GRADUATE STUDENT, GRADUATE SCHOOL OF NURSING

SUBJECT: Human Subject Use Approval for Protocol N06101-01

The Graduate School of Nursing thesis protocol entitled "Perceptions of the Utilization of Family Nurse Practitioners by Current Outpatient Air Force Physicians" is approved as exempt from human subject use review under the provision of 32 CFR 219.101 (b)(2). Approval is valid for one year from this date or the end of the project, whichever come first.

Please notify this office of any amendments you wish to propose which involve human subjects. If you have any questions, please call this office at 295-3303.

for Michael J. McCreery, Ph.D.
LTC, MS, USA
Director, Research Administration

Appendix F

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE MILITARY PERSONNEL CENTER
RANDOLPH AIR FORCE BASE TEXAS

25 September 1995

MEMORANDUM FOR UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES, GRADUATE SCHOOL OF NURSING
ATTN: CAPTAIN BERTZ

FROM: AFMPC/DPSAS
550 C Street West, Ste 35
Randolph AFB TX 78150-4737

SUBJECT: Your Follow-up Question About Survey Approval

Your survey is approved for use within the Air Force under survey control number USAF SCN 95-53 which expires on 31 Dec 95. The survey is approved for voluntary participation by 125 outpatient physicians at four medical treatment facilities. While individual base-level approval is not required, you might provide each of the MTFs a courtesy copy of your research abstract and survey. If, however, you are placing an additional administrative burden on the MTF, e.g., asking them to distribute or collect surveys, they have the right to decline participation. However, no other survey approval procedures should apply. The Air Force Personnel Survey Program is detailed in AFI 36-2601, 25 June 1991.

CHARLES H. HAMILTON
Chief, Survey Branch

References

Abdellah, F. (1982). The nurse practitioner 17 years later: Present and emerging issues. Inquiry, 19(2),105-116.

Air Force Manual 36-2105. (1995). Professional Policies, United States Air Force, Bolling Air Force Base, Washington D.C.

Bellet, P., & Leeper, J. (1982). Effectiveness of the pediatric nurse practitioner well-baby clinics in West Alabama. The Alabama Journal of Medical Sciences, 19(2), 126-128.

Bennett, M. L. (1984). The rural family nurse practitioner; The quest for role identity. Journal of Advanced Nursing, 9(2), 145-155.

Bezjak, J. E. (1987). Physician-perceived incentives for association with nurse practitioners. Nurse Practitioner, 12(3), 66-74.

Brooks, E. F., Johnson, S. L. (1986). Nurse practitioner and physician assistant satellite health centers: The pending demise of an organizational form? Medical Care, 24(10), 881-890.

Brown, F. L., Amos, J. R., & Mink, O. G. (1975). Statistical Concepts A Basic Program. 2nd Ed. Harper & Row, New York.

Crosby, F., Ventura, M., & Feldman, M. J. (1987). Future research recommendations for establishing NP effectiveness. Nurse Practitioner, 12(1), 75-79.

Cruikshank, B. M., & Lankan, J. A. (1986). Use of physician consultation by nurse practitioners in community health and ambulatory clinic settings. Journal of Community Health Nursing, 3(4). 211-223.

Dunn, M., & Von Ruden, J. (1978). A study of physicians attitudes toward the utilization of nurse practitioners in primary care settings. Military Medicine, 143. 417-420.

Edmunds, M. W., & Ruth, M. V. (1991). NPs who replace physicians: role expansion or exploitation? Nurse Practitioner, 16(9), 46, 49.

Edmunds, M. (1978). Evaluation of nurse practitioner effectiveness: An overview of the literature. Evaluation Health Professional, (1), 69-82.

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

Elder, R., & Bullough, B. (1990). Nurse practitioners and clinical nurse specialists: Are the roles merging? Clinical Nurse Specialist, (4), 78-84.

Ford, L. (1986). Nurses, nurse practitioners: The evolution of primary care: Review of Nurses, nurse practitioners. Image: Journal of Nursing Scholarship, 18, 177-178.

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

Ford, L. C. (1979). A nurse for all settings: The nurse practitioner. Nursing Outlook, 27(8), 521.

Ford, L. C., Silver, H. K. (1967). The expanded role of the nurse in child care. Nursing Outlook, 15, 43-45.

George, J. B. (1990). Nursing theories the base for professional Nursing Practice. 3rd. ed. Englewood Cliffs, New Jersey. Prentice-Hall International Inc.

Glasscock, J., Webster-Stratton, C., McCarthy, A. M. (1985). Infant and preschool well-child care; Master's- and non master's-prepared pediatric nurse practitioners. Nursing Research, 34(1), 39-43.

Goodwin, L. (1981). The effectiveness of school nurse practitioners: A review of the literature. The Journal of School Health, 51(11), 951-964.

Haden, K.,L., Davies, L., & Clore, E. (1982). Facilitators and inhibitors of the emergency nurse practitioner role. Nursing Research 31(5), 294-295.

Martin, A., & Davis, L. (1989). Mental health problems in primary care: A study of nurse practitioner practice. Nurse Practitioner, 14(10), 50-56.

Hein, E. C., Nicholson, M. J. (1994). Contemporary Leadership Behavior, 4th Ed. Philadelphia, PA: Lippincott.

Hupcey, J. E. (1993). Factors and work settings that may influence nurse practitioners practice. Nursing Outlook, 41(4), 181-185.

Johnson. M. M., Martin, H. W. (1965). A sociological analysis of the nurse role. Social Interaction and Patient Care. p. 30., Philadelphia, PA. J.B. Lippincott Company.

LaRochelle, D. (1987). Research studies on nurse practitioners in ambulatory health care: A review, 1980-1985. Journal of Ambulatory Care Management, 10(3), 65-75.

Levine, J. L., Orr, S. T., Sheatsly, D. W., Lohr, J. A., Brodie, B. M. (1978). The nurse practitioner: Role, physician utilization, patient acceptance. Nursing Research, 27(4),245-254.

Lewis, C. E., Resnick, B. A., Schmidt, G., Wasman, D. (1969). Activities, events and outcomes in ambulatory patient care. New England Journal of Medicine, 280, 645-649.

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

McGivern, D. (1986). The evolution of primary care nursing. In M. Mezey & D McGivern (Eds.), Nurses, nurse practitioners: The evolution of primary care. pp.3-14.Boston. Little, Brown.

Molde, S., & Diers, D. (1985). Nurse practitioner research: Selected literature review and research agenda. Nursing Research, 34(6), 362-367.

Moore, S. (1993). Promoting advanced nursing practice, AACN Clinical Issues in Critical Care Nursing, 4(4), 603-608.

Nathanson, C., & Becker, M. (1973). Doctors, nurses, and clinical records. Medical Care, 11, pp. 214-223.

Polit, D., & Hungler, B. (1991). Nursing research principles and methods. Fourth Ed. Philidelphia, PA: J.B. Lippincott Company.

Prescott, P., Driscoll, L. (1979). Evaluating nurse practitioner effectiveness: A review of physician-nurse comparison studies. Evaluation and the Health Professions, 2(4), 387-411.

Prescott, P., Driscoll, L. (1980). Evaluating nurse practitioner performance: The nurse practitioner. American Journal of Primary Health Care, 28(4), 32-53.

Prescott, P. A. (1994). Cost-effective primary care providers. Assessment in Health Care, 10(2), 249-257.

Safriet, B. (1992). Health care dollars and regulatory sense: The role of advanced practice nursing. Yale Journal on Regulation, 9, 417-488.

Scheim, E. H.(1969). The mechanisms of change, in the planning of change. Bennis, W.G. et al., eds, P.99. New York.

Scharon, G. M., Bernacki, E. J. (1984). A corporate vote for nurse practitioners. Business and Health, 1(9).

Shamansky, S. (1984). Nurse practitioners and primary care research: Promises and pitfalls. Annual Review of Nursing Research, 3.

Shontz, F. C. (1986). Fundamentals of research in the behavioral sciences principles and practices. Washington, DC: American Psychiatric Press, Inc.

Simborg, D. W., Starfield, B. H., & Horn, S. D. (1987). Physicians and non-physician health practitioners: The

characteristics of their practices and their relationships. American Journal of Public Health, 68(1).

Sobolewski, S. (1981). Cost-effective school nurse practitioner services. The Journal of School Health, 51(9).

Southby, J. (1980). Primary care nurse practitioners within the army health care system: Expectations of the role. Military Medicine, 10.

Stanford, D. (1987). Nurse practitioner research: Issues in practice and theory. Nurse Practitioner, 12(1).

Stevens, P. P. (1983). Concepts of stress. In S. M. Lewis & I. C. Collier (Eds.), Medical-Surgical Nursing: Assessment and Management of Clinical Problems, (pp. 1145-1155). New York: McGraw-Hill.

Stoeckle, J. D., Farrisey, & Sweatt. (1973). Medical nursing clinic for the chronically ill. American Journal of Nursing, (63).

Sullivan, J. A. (1982). Research on nurse practitioners: Process behind the outcome? American Journal of Public Health, 71(1).

Sullivan, J. A., Dachelet, C. D., Sultz, H. A. Henery, Carrol, H. D. (1978). Overcoming barriers to the employment and utilization of the nurse practitioner. American Journal of Public Health, 68(11).

Theiss, B. E. (1982). Perceptions of nursing staff regarding utilization of nurse practitioners in inpatient settings, Military Medicine. (147).

Theiss, B. E. (1976). Investigation of the perceived role functions and attitudes of the nurse practitioner role in a primary care clinic. Military Medicine, (283).

United States Air Force (1975). United States Air Force Nurse Corps Newsletter, Bolling Air Force Base, Washington D.C.

Welkowitz,J., Ewen, R., Cohen, J. (1991). Introductory statistics for the behavioral sciences, (4th ed). New York: Harcourt Brace Javanich College Publishers.

Wells, S. P. (1976). Educational opportunities for the air force nurses. United States Air Force Medical Service Digest, 24(7).

Weston, J. L. (1980). Distribution of nurse practitioners and physician assistants: Implications of legal constraints and reimbursement. Public Health Reports, 95(3), 253-258.

Wilbur, J., Zoeller, L., Talashek, M., & Sullivan, J. (1990). Career trends of master's prepared family nurse practitioners. Journal of American Academy of Nurse Practitioners, 2(2), 69-78.

Yankauer, A., & Sullivan J. (1982). The new health professionals: Three examples. Annual Review of Public Health, 3, 249-276.

Zammuto, R. F., Turner, I. R., Miller, S., Shannon, I., & Christian, J. (1979). Effect of clinical settings on the utilization of nurse practitioners. Nursing Research, 28(2), 98-102.

Zimmer, J. G., Groth-Juncker, A., & McCusker, J. (1985). Randomized controlled study of a home health team. American Journal of Public Health, 75(2), 134-141.