

ATTITUDES TOWARD AND ACCEPTANCE OF NURSE PRACTITIONERS'
ROLE FUNCTIONS: A SURVEY OF REGISTERED NURSES IN
TEXAS AND MASSACHUSETTS

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CHAPTER 1

INTRODUCTION

The health care delivery system is not adequate to meet the demands of the public for high quality primary health care. Increased specialization of health care providers and a maldistribution of services have had a negative impact on the health care system. The gap is further accentuated by an increased public awareness as to what constitutes quality health care.

Nurses have been delivering limited primary care for many years. Within the past two decades additional educational preparation has evolved as a means of preparing "nurse practitioners" who are capable of providing an expanded scope of direct services to clients. Momentum for the development and implementation of this role was and still is strongly influenced by the prevailing social, political and health care climate. Trends in nursing and medical education have also contributed to shaping this role.

Nurse practice acts exist in every state. These acts serve to define the scope of expanded functions for nursing practice, although their primary function is public

protection. A Board of Nurse Examiners is usually given the authority to promulgate regulations. However, in some states the authority is shared with the Board of Medical Examiners. There are considerable differences in the clarity and scope of practice as defined in the nurse practice acts of each state. Lack of uniformity among states may affect interstate mobility, career mobility, and reimbursement policies by third party payers. It may contribute to varying patterns of utilization of nurse practitioners between states. Another factor which influences the utilization of nurse practitioners is the attitude towards them. Especially important are the attitudes of physicians, other nurses, and health care consumers.

This study focused on the attitudes of nurses toward nurse practitioners in two different regions of the United States. The major objective of this study was to determine whether there was a difference in the attitudes of nurses toward nurse practitioners in two geographical areas of the United States.

Problem of Study

The problems this study addressed were:

1. Do nurses licensed in two states differ in terms of their attitudes toward nurse practitioners?

2. Do nurses licensed in two states differ in terms of their level of acceptance of specific role activities performed by the nurse practitioner?
3. Are selected demographic characteristics related to attitudes toward nurse practitioners?
4. Are selected demographic characteristics related to the level of acceptance of specific role activities performed by the nurse practitioner?

Justification of Problem

The Secretary's Committee to Study Extended Roles for Nurses presented a report to the Secretary of Health, Education, and Welfare in 1972 (Secretary's Committee, 1972). Certain conclusions and recommendations for broad courses of action to facilitate achieving extended roles for nurses were made in the report. The Committee concluded that an extension of the scope of nursing practice would have a profound impact on the health care delivery system. As a result, it was recommended that:

attitudinal surveys of health care providers and consumers should be conducted to assess the significance of factors that might affect the acceptance of nurses in extended care roles which they do not now normally occupy. (Secretary's Committee, 1972, p. 48)

Numerous attitudinal studies have been conducted since the recommendation of the Secretary's Committee was presented (Little, 1978; Schoen, Erickson, Barr, & Allen, 1973;

Sultz, Henry, & Sullivan, 1979). These studies have focused on the attitudes of physicians, other nurses, and consumers. Sultz et al. (1979) reported that resistance by other health care providers to the nurse practitioner role was somewhat greater in the Northeast than in the South. However, they reported overwhelming acceptance of the nurse practitioner role in general.

According to Sultz et al. (1979), ambiguity surrounding the legal status of the nurse practitioner role was frequently cited by the employer and the nurse practitioner as a major barrier to the integration of the role. There was considerable variation in the nurse practice acts between the two states which were surveyed in this study. In Massachusetts, the professional nurse with "appropriate education" may perform "additional acts involving evaluation, diagnosis, and treatment" (The Commonwealth of Massachusetts, 1979). The Texas Nursing Practice Act was expanded in February, 1980, to include rules and regulations for "registered nurses practicing as advanced nurse practitioners" (SoRelle, 1980, p. 4). These legal differences between the two states may affect nurses' attitudes toward the nurse practitioner role.

Current national policy includes budgetary cuts in funding for nursing education. The Reagan Administration proposed that Nursing Student Assistance be cut from \$37.3

million in fiscal year 1980 to \$15.3 million in fiscal year 1981 and then to zero in fiscal year 1982. Nurse practitioner training and special projects will continue to be funded at a reduced level ("Health Professions," 1981, p. 6).

As a result of the trend in national policy which favors continued preparation of nurse practitioners at a reduced level, it is beneficial to conduct studies which indicate nurses' attitudes toward the expanded role. The results of this survey provide an estimate of the degree of acceptance of the nurse practitioner role by registered nurses in Massachusetts and Texas.

Conceptual Framework

Policy refers to "an articulated decision or set of decisions regarding an action" (Williams & Wysong, 1975, p. 258). It may deal either with the allocation of resources or with specific methods for utilizing resources. Williams and Wysong (1975) further explicated that policy is established most often in the event of a problem which requires a decision and that when these decisions are related to action they constitute policy. Health policy is primarily concerned with the financing and organization of manpower and resources in an attempt to meet health care needs at the most equitable costs while maintaining quality

of services. These policies or decisions should be based on results obtained from health services research. According to Eichhorn and Bice (1973), health services research is "concerned with understanding the planning, organization, staffing, financing, management, operation, maintenance, and use of the health services delivery system" (p. 136).

Williams and Wysong (1975) developed a conceptual model which illustrates the relationship between health services research and policy decision (Figure 1). It is a seven-stage circular representation of the policy research process. The policy decision constitutes the central core of the model. There is no formal entry point to the policy research process. Flow is either sequential to the next stage or directly to a policy decision from any step.

The seven stages in the policy research process are as follows:

1. Problem identification--directed toward establishing whether or not the problem is of sufficient magnitude to warrant the investment of resources in obtaining a solution.
2. Problem explication--directed toward establishing the reasons for the deficiency and the barriers inhibiting change; based on the use of problem-oriented research with a strong emphasis on the analysis of causative relationships.

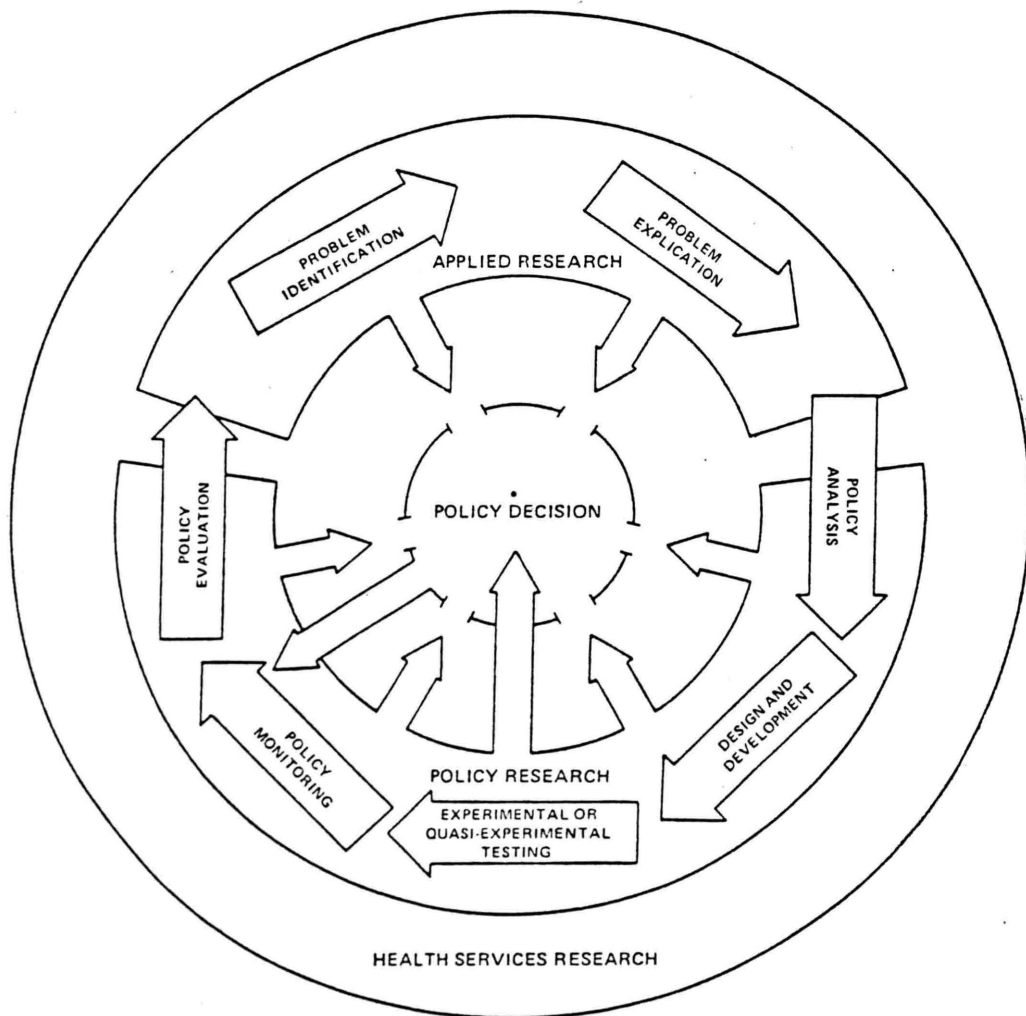


Figure 1. Williams' and Wysong's (1975) Conceptual Model

3. Policy analysis--involves the integration of data from all possible sources: previous research findings, data on comparable problems, and the opinion of experts. It is activated in circumstances where policy is recognized as required or imminent.
4. Design and development--resources and operating procedures are identified and the strategies for implementation are developed.
5. Experimental or quasi-experimental testing--further research or data collection and analyses are carried out with the purpose of providing information to permit a choice among alternative policies.
6. Policy monitoring--allows for the continual evaluation of the selected policy with respect to pre-identified process and outcome measures. The context in which the policy is applied provides a reference point for the evaluation.
7. Policy evaluation--examines the impact of a program in terms of its effects on a target population (Williams & Wysong, 1975).

This model may be applied to the imminent funding policy related to the budget and its effect on nurse practitioners.

The problem leading to the introduction of nurse practitioners into the health care delivery system (step 1) may be identified as a lack of accessibility to health care

(Williams & Wysong, 1975). The target population may be defined as those persons who lack accessibility to primary health care resources. The magnitude of the problem may be expressed quantitatively in terms of national standards. Two standards utilized to determine accessibility are as follows:

1. Greater than 1 physician per 3,500 population.
2. Less than 30 minutes travel time to primary care resources. (H-GAC, 1980, p. 376)

Problem explication (step 2) refers to the reasons for the existence of the problem (Williams & Wysong, 1975). If accessibility is expressed in terms of the providers rather than the target population, it becomes a problem of health manpower. It is believed that the problem is related to geographical maldistribution of providers, especially primary care physicians, rather than a numerical shortage. Hastings and Murray (1976) reported that the geographic distribution of physicians has shifted since the beginning of this century according to both major population shifts and changes in median family income. Nurse practitioners evolved as a means of closing the gap created by the redistribution of physicians. However, nurse practitioners can only be effective to the extent that they are utilized.

The major barriers which affect the integration of the nurse practitioner role into the health care system may be summarized as follows:

1. The ingrained psychological barriers of both NP's and physicians . . . ;
2. Attitudes toward NP's--how receptive, in general, other providers and patients are to the nurse functioning in an expanded role;
3. The extent of ambiguity surrounding the legal status of the nurse practicing in an expanded role;
4. Elements related to the macrostructure and organization of the health care system and microstructure and organization of particular settings;
5. The absence of a consistent policy or schedule for reimbursement of NP services. (Sultz et al., 1979, p. 136)

Policy analysis (step 3) refers to the integration of relevant health services data with direct attention given to potential government regulating and funding decisions (Williams & Wyson, 1975). Research related to past funding policy, utilization of nurse practitioners, and patient outcomes related to care given by nurse practitioners should be carefully and critically reviewed. Alternative policies must be weighed and considered. Precise implementation strategies need to be developed (step 4). These include the identification of potential recipients and the determination of individual and institutional allocations. Criteria for eligibility need to be established. Also, regulations regarding usage and reimbursement mechanisms (if applicable) need to be clarified.

Further data collection may be necessary in order to make a choice among alternatives (Williams & Wysong, 1975). Experimental, quasi-experimental or cross-sectional data collection and analyses may be conducted in order to reach a consensus (step 5). Once the policy has been selected, steps need to be taken to monitor it on an ongoing basis and to evaluate its final outcome (steps 6 and 7). At any time during this process, new policy decisions may be made.

The nurse practitioner role was created to fill a gap in the health care delivery system. Continued preparation of the nurse practitioner is supported by the federal government through its funding policy. Effective utilization of this form of manpower is related to the degree of acceptance by other providers. The results of this survey yield some measure of the degree of how nurse practitioner roles and functions are perceived by nurses. These data may assist in predicting the level of support for nurse practitioners.

Assumptions

For the purpose of this study, it was assumed that:

1. There is a need for the role of the nurse practitioner in both inpatient and ambulatory settings.
2. The role of the nurse practitioner is an integral part of nursing.

3. The role of the nurse practitioner is being socially assigned as a recognized role within the health care professions.
4. Attitudes toward the nurse practitioner role will reflect the degree of acceptance of the role.

Hypotheses

The main hypotheses of this study included:

1. Attitudes toward nurse practitioners will be more favorable by registered nurses licensed in a southwestern state than by registered nurses licensed in a northeastern state.
2. Registered nurses licensed in a northeastern state will perceive a broader scope of activities appropriate to the nurse practitioner role than registered nurses licensed in a southwestern state.
3. There is a relationship between selected demographic characteristics, such as personal attributes, state of licensure, educational status and employment status, of registered nurses and the attitudes toward nurse practitioners.
4. There is a relationship between selected demographic characteristics, such as personal attributes, state of licensure, educational status and employment status, of

registered nurses and the acceptance of specific role activities performed by the nurse practitioner.

Definition of Terms

For purposes of this study the following definitions were used:

1. Attitude towards nurse practitioners--"a consistency among responses to a specified set of stimuli or social objects" (Green, 1954, p. 300) as measured by the General Attitude Towards Nurse Practitioners Scale (Theiss, 1976).

2. Nurse practitioner--

A registered nurse who has successfully completed a formal program of study designed to prepare registered nurses to deliver primary health care including the ability to:

1. assess the health status of individuals and families through health and medical history taking, physical examination, and defining of health and developmental problems;
2. institute and provide continuity of health care to clients (patients), work with the client to insure understanding of and compliance with the therapeutic regimen within established protocols, and recognize when to refer the client to a physician or other health care provider;
3. provide instruction and counseling to individuals, families, and groups in the areas of health promotion and maintenance, including involving such persons in planning for their health care; and
4. work in collaboration with other health care providers and agencies to provide, and where appropriate, coordinate services to individuals and families. ("Nurse Practitioner," 1976, pp. 3552-3553)

3. Primary care--"care that is complete, integrated, accessible and provided over time" (Starfield, 1979, p. 94).
4. Registered nurse--a graduate of a board-approved program of nursing leading to a diploma, an associate degree, or a baccalaureate degree who has passed the State Board Examination and is currently licensed to practice in a specified northeastern or southwestern state (includes those nurses currently inactive who have maintained licensure).
5. Role activities--specific functions comprising the role of the nurse practitioner as identified in the Role Activities Scale designed by Theiss (1976).

Limitations

The following limitations were recognized as being inherent in this study:

1. The generalizability of the results to the population of professional nurses is limited to those two states from which the samples were selected.
2. There were some registered nurses currently licensed in both the southwestern and the northeastern states.

Summary

Acceptance of the nurse practitioner role by both health professionals and patients is necessary if this role is to become an integral component of the health care delivery system. It is particularly important to determine the attitudes of other nurses toward the role of the nurse practitioner. This attitude indicates the nurses' degree of support for the role. Since the role of the nurse practitioner is so ambiguous, the perceived role functions are an important determinant of attitude. A review of the literature revealed a limited number of attitudinal studies of this nature. Therefore, this study sought to collect such data with the purpose of determining the attitudes of other nurses toward the nurse practitioner role and whether or not a regional difference in these attitudes exists.

The remainder of this thesis is divided into four chapters. The review of literature in Chapter 2 explores the historical development of the nurse practitioner role as well as research relevant to policy decisions regarding the role. The attitudes of physicians, other nurses and patients are also examined in this chapter. Chapter 3 describes the format of the study with respect to setting, population, research questionnaire, and methods for collection and treatment of data. A detailed description of the

data collected, supplemented with tables, is presented in Chapter 4. Finally, Chapter 5 summarizes this study, projects its implications for nursing, and makes recommendations for future related research.

CHAPTER 2

REVIEW OF LITERATURE

Chapter 1 described the state of the health care delivery system at the time the nurse practitioner role was initially introduced. In Chapter 2 trends and legislation in nursing, medicine, and health care delivery which influenced the role of the nurse practitioner are reviewed under the heading "Historical Development of the Nurse Practitioner Role." Policy decisions regarding this role have been based on analysis of related research and are discussed under the subheading "Policy Analysis and Monitoring Related to the Nurse Practitioner Role." The results of several studies designed to evaluate various aspects related to nurse practitioners functioning in a practice setting are examined in the subsection entitled "Policy Evaluation Related to the Nurse Practitioner Role."

Numerous attitudinal studies have been conducted regarding the role of the nurse practitioner and these findings are classified according to the subjects surveyed in the study; that is, physicians, nurses or patients. Also, the various functions related to the nurse practitioner role have been studied. These two areas are

discussed under the subheading "Attitudes and Perceptions of the Role Functions of Nurse Practitioners."

Historical Development of the Nurse Practitioner Role

The medical profession was strongly influenced in 1910 by the Flexner Report, which was the result of a comprehensive study of medical education in the United States and Canada (Flexner, 1910). The findings of this report led to closing of inferior medical schools, affiliation of medical schools with universities, and concentration of medical education in a hospital setting. Despite this upgrading of medical education, in the 1930s, 80% of the scientifically educated physicians were opting to practice primary health care in small towns rather than remain in close association with an educational setting typically located in a city (Haug, 1970). These physicians enjoyed a high level of community leadership and social prestige. However, following World War II, billions of federal dollars were allocated to medical schools to accelerate research in the biomedical sciences (Hastings & Murray, 1976). The education of medical students shifted from preparation for general medical practice to the training of researchers and medical specialists. Medical schools were then being judged by the quality of research produced rather than by the

quality of their general practitioners (Rogers, 1974). This resulted in an increased number of researchers and medical specialists and a deficit of quality general practitioners committed to delivering primary care in rural areas.

Concurrently, changes were taking place in nursing. The passage of the Social Security Act of 1935 significantly affected the education and practice of nursing. This resulted in federal support for the prevention of disease and increased educational opportunities for nurses in community health (Roberts, 1959). In 1948, Ester Lucille Brown published an indepth report about nursing in which she identified the responsibility of the health professions as that of aiding persons to maintain positive health (Brown, 1948). This was contrary to the emerging emphasis in the United States on acute or episodic care.

A widespread shortage of nurses existed throughout the nation in the 1950s and early 1960s as a result of "low pay and bad working conditions" (Kalisch & Kalisch, 1978, p. 612). As the prevailing political climate shifted in 1960, federal aid became available to the health professions. In addition to financial aid, the Surgeon General appointed a special Consultant Group on Nursing to advise him on the needs of nursing and to identify the appropriate governmental role in assuring adequate nursing services for

the country. The Consultant Group's Report, Toward Quality in Nursing, proposed recommendations designed to increase both the quality and quantity of nursing practice, education, and research (Report of the Surgeon General's, 1963). As a result, Congress enacted the Nurse Training Act of 1964. This legislation permitted the allocation of \$283 million over a five-year period. In 1968 this was extended an additional two years, for a total of more than \$380 million spent from fiscal year 1965 to fiscal year 1971 to advance the education of professional nurses (Kalisch & Kalisch, 1978).

The first nurse practitioner program was started as a pilot project in 1965 by Dr. Henry Silver from the School of Medicine, Department of Pediatrics, and Dr. Loretta Ford from the School of Nursing, both at the University of Colorado (Taylor, 1975). The authors designed a pediatric nurse practitioner program to prepare nurses to provide comprehensive well child care and manage certain acute and chronic conditions of the sick child (Silver, Ford, & Day, 1968). Support for this role of nurse practitioner was given by the National Advisory Commission on Health Manpower, as evidenced by the following statement made in a 1967 report:

The development of health personnel at the intermediate professional level has been repeatedly explored, and a few pilot programs are underway. Because we regard the use of such personnel as a major factor in improving the utilization of health professionals, we recommend that the Federal government give high priority to the support under university direction of experimental programs which train and utilize new categories of health professionals. (Report of the National Advisory Committee, 1967, p. 32)

Between 1967-1971, problems related to the health care delivery system included reports about shortages of physicians, increased cost of preparing physicians, maldistribution of health providers, lack of availability and accessibility of health care, and lower quality and increased cost of care (Final Report, 1975). The American Medical Association (AMA) responded to the physician shortage in February 1970 by endorsing a plan to "permit" nurses to be accepted into the practice of medicine, working in the employ and under the supervision of a physician (Rowan, 1969). The president of the American Nurses' Association (ANA), Dorothy Cornelius, who strongly opposed the "unilateral action" by AMA, stated that it would compound the nursing shortage, and urged collaboration between the two organizations in clarifying roles and functions (AMA, 1970).

In 1967, a comprehensive study of nursing education entitled An Abstract for Action was undertaken (Lysaught, 1970). Impetus for this study was a recommendation by the

Surgeon General to conduct a study "of the present system of nursing education in relation to the responsibilities and skill levels required for high-quality patient care"

(Report of the Surgeon General's, 1963, p. 34). Recommendations from this study included: (1) basing nursing personnel planning on the premise that nursing is primarily a clinical practice directed to the care of people, and (2) a national joint practice commission be formed between nursing and medicine to delineate their respective roles.

Federal legislation supported the nurse practitioner's role in the 1970s. The Comprehensive Health Manpower Training Act of 1971, Section 774(a)(1) called for the training of various health personnel, including pediatric nurse practitioners. Funding for these nurse practitioner programs was specifically included in the Nurse Training Act of 1971 (Final Report, 1975). Separate authority to support nurse practitioner training programs was provided through the restructuring of Title VIII of the Public Health Service Act by P.L. 94-63, the Nurse Training Act of 1975. The purposes of Section 822 of this act included: "to plan, develop and operate or significantly expand or maintain existing programs for the training of nurse practitioners" (Report of the Physician, 1977, p. 5). Statutory requirements specified length of programs and that admission to

these programs be open to registered nurses irrespective of the type of school of nursing from which they graduated.

The legal status of the nurse practitioner was addressed in a report by the Secretary's Committee to Study Extended Roles for Nurses (Secretary's Committee, 1972). This report made recommendations pertaining to legal considerations, education, interdisciplinary relationships, economic studies, and attitudinal surveys. Although this report stated that its members saw no legal obstacles to nurses functioning in an expanded role, many of the states' individual nurse practice acts prohibited nurses from diagnosing or treating patients. Idaho was the first state to revise its practice act to facilitate nurses assuming diagnostic and treatment functions. In 1971, six years after the start of the first nurse practitioner program, a clause was added to the Idaho nurse practice act which granted the Idaho state board of medicine and the Idaho state board of nursing joint authority for regulating expanded practice. Most other states have since revised their practice acts to include expanded roles (Bullough, 1976).

The legal status of nurses practicing in rural areas was affected by the Rural Health Clinic Services Act of 1977 (Silver & McAtee, 1978). This act encouraged the nurse practitioner to assume responsibility in the

development and operation of clinics, including the maintenance of health records and coordination with other services. The act further stipulated that diagnostic and therapeutic services may be provided by the nurse practitioner under the medical supervision of a physician who must be available for consultation and assistance at all times, yet be personally present as infrequently as every two weeks. Medicare and Medicaid coverage is provided for services rendered by the nurse practitioner under this act. However, the scope of practice must be within the legal limitations defined in the individual states' nurse practice acts.

Policy Analysis and Monitoring Related to the Nurse Practitioner Role

The theoretical basis for this study is a conceptual model developed by Williams and Wysong (1975) which relates various aspects of health services research to policy decision. In this section, policy analysis and policy monitoring are discussed as they relate to the policy decision to provide federal funding for nurse practitioners.

According to this model (Williams & Wysong, 1975), policy analysis refers to the integration of data from all possible sources. Policy analysis of the nurse practitioner role was used to assist decision-makers with the policy decision of whether or not to provide further funding for

nurse practitioner programs. Such a study was the result of an award made in June 1973 by the Division of Social Systems and Human Resources to Yale University for evaluation of existing policy-related research on new and expanded roles of health workers (Cohen, Crootof, Goldfarb, Keenan, Korper, & Triffin, 1974). The purpose of this project was to assess the validity of the research reviewed and to provide decision-makers with an assessed research base for policy decisions. The project's conclusions, based on the research reviewed, suggested that new health practitioners (physician's assistants and nurse practitioners) performed as well as the physicians with whom they were compared, increased productivity of the practice, were beneficial to employers, and had been accepted by consumers. The review of existing research revealed several areas with few empirical findings. Recommendations for future research in these areas included: quality of service; productivity, costs, and benefits; geographic distribution and specialization; consumer and physician acceptance; legal issues; education and training; reimbursement; institutional policies and setting characteristics; and role identity and job satisfaction (Cohen et al., 1974).

According to the conceptual model developed by Williams and Wysong (1975), a policy decision requires monitoring. Policy monitoring allows continual evaluation of the

selected alternative with respect to preidentified process and outcome measures. Policy monitoring of the nurse practitioner role would reveal whether or not the objectives of that role were being met and assist with the policy decision regarding providing federal funding for the education of nurse practitioners. The proliferation of physician extender programs prompted the Comptroller General's office to review a selected group of programs to determine whether the objectives and expectations of Congress were being achieved. The recommendations of this report resulted in the award of a contract for the "Physician Extender Training and Deployment Study" in June, 1975 (Nurse Practitioner, 1976). The purpose of this study was to provide a descriptive and comparative data base on issues related to the selection, training and deployment of various physician extenders, including nurse practitioners.

Another policy monitoring activity was conducted by the Physician Extender Work Group (Report of the Physician Extender, 1977). The Work Group, initiated in 1975 by Dr. Harold Margulies, Deputy Administrator, Health Resources Administration (HRA), monitored various ongoing evaluation activities and small relevant studies in order to advise the HRA Policy Board of results which could provide the basis of policy decisions. The report of the Work Group addressed issues for which it believed there was

insufficient information or development to permit analyses for policy decision formulation (Report of the Physician Extender, 1977). These areas included reimbursement, demand, productivity, remote site practices, and nurse practitioner/physician assistant training.

The Longitudinal Study of Nurse Practitioners (Sultz, 1976; Sultz, Henry, & Sullivan, 1979) generated data for policy monitoring related to nurse practitioner demand and education. This investigation, originating in the Division of Nursing of the Department of Health, Education, and Welfare (DHEW), evaluated program efforts related to nurse practitioners. Phase 1 surveyed the nurse practitioner educational programs and the students in them. The data revealed that the greatest growth spurt for both certificate and master's programs coincided with the beginning of Federal support in 1972. Phase 2 of the Longitudinal Study of Nurse Practitioners was the follow-up of graduates to their place of employment and included a survey of nurse practitioners and their employers (Sultz et al., 1979). Findings revealed that the employers' two most important reasons for employing nurse practitioners were to improve the quality of care and to extend services to more persons. Studies have indicated that through the utilization of nurse practitioners, employers may meet both objectives (Charney & Kitzman, 1971; Spitzer, Roberts, & Delmore, 1976).

Policy Evaluation Related to the Nurse Practitioner Role

Policy evaluation examines the impact of a program in terms of its effects on a target population (Williams & Wysong, 1975). Policy evaluation of the nurse practitioner role examines the use of nurse practitioners in particular settings with respect to their effect on a specific target population. The results of such studies could be used by decision-makers to assist with the policy decision regarding providing federal funding for the education of nurse practitioners. Numerous studies have been conducted to evaluate functioning of nurses in expanded roles as they relate to a specific target population. Several criteria for evaluation have been used in these studies. These criteria include: quality of care delivered by nurse practitioners, productivity of practices utilizing nurse practitioners, efficiency of nurse practitioners, and financial evaluation of nurse practitioners. These criteria will be used to subdivide the following discussion of evaluation studies.

Quality of Care Delivered by Nurse Practitioners

In this subsection, several studies which examine the quality of care delivered by nurses functioning in expanded roles will be discussed. Lewis and Resnick (1967) compared care given in a medical clinic to that given in an

experimental clinic operated only by nurses. Frequency of complaints and hospitalization rate in the two groups were compared. Findings revealed that while there was no change in the frequency of complaints in the control group (those seen in the medical clinic), there was a significant reduction in the frequency of complaints in the group seen in the experimental nurse clinic. The hospitalization rates were 126.1 hospital days per 1000 patient days of observation for the control group and 34.3 per 1000 patient days in the experimental group.

Physiological outcome of patients was used by Hill and Reichgott (1979) to determine quality of care. A retrospective chart audit was conducted to compare the control of blood pressure achieved by physicians and nurses (Hill & Reichgott, 1979). Satisfactory blood pressure control (diastolic \leq 90 mm Hg) was attained in 59.5% of the patients seen. Physicians and nurses in this study saw similar patient groups but did not differ in the outcome results obtained.

Other studies used functional level and mortality as criteria to determine quality of care. Lewis, Resnick, Schmidt, and Waxman (1969) compared the care given in a medical clinic to that given in experimental nurse clinics. Disability of the two groups was measured in terms of employment status. There was a statistically significant

increase in the number of patients from the nurse clinics who had returned to full- or part-time employment as compared with those patients seen in the medical clinics. The frequency of symptoms was the criterion used to determine discomfort. There was a reduction in the frequency of symptoms among patients seen in the nurse clinics, and no change in the frequency among those in the control group.

In another study (Sackett, Spitzer, Gent, & Roberts, 1974) the care given by family physicians working with a conventional nurse was compared with that given by nurse practitioners. There were 18 deaths in the control group, and 4 deaths among patients in the nurse practitioner group. No deaths in the nurse practitioner group were judged to have been preventable as determined by a record review of the decedents by appointees of the Ontario College of Physicians and Surgeons. It was not reported whether a record review of the deaths in the control group was conducted. Physical, emotional, and social function were at similar levels for the two groups at the end of the experimental period.

Appropriate decision making with regard to consultation and referrals was used to judge quality of care in several studies (Charney & Kitzman, 1971; Hilmar & McAtee, 1973; Lewis et al., 1969). In a study by Lewis et al. (1969), the referrals to physicians from an experimental clinic

operated by nurses were examined by internists. It was reported that 11 of the patients accounted for over 54% of all the problems brought to the attention of the physician. Since the internists reported that 4 of the 11 patients had no serious medical problems to account for the repeated incidents, overreferral by the nurse practitioners was suggested. However, Charney and Kitzman (1971) reported no difference in the referral patterns to outside consultants between a pediatrician and nurse team and a pediatrician alone. A study by Hilmar and McAtee (1973) compared traditional school nurses with specially trained nurse practitioners. The results suggested that school nurse practitioners were less likely to exclude pupils from school for recuperation and/or further treatment than school nurses. Also, the traditional school nurses were far more likely to refer pupils to physicians or to teachers for further evaluation.

Knowledge and understanding were used in a few studies to evaluate quality of care (Hilmar & McAtee, 1973; Lewis et al., 1969). Home visits were made by investigators to determine patients' knowledge of their diagnosis, medications, diets, involvement of the family in their treatment, and other aspects of their care (Lewis et al., 1969). Results of the interviews were not reported. The findings

of a study by Hilmar and McAtee (1973) revealed that the advice of school nurse practitioners was more likely to be accepted by parents of children excluded from school than from traditional school nurses.

Quality of care was determined in some studies through a chart audit (Duncan, Smith, & Silver, 1971; Henriques, Virgadamo, & Kahane, 1974). Henriques et al. (1974) studied nurse practitioners supervised by physicians who performed Health Appraisal Examinations (HAE), examinations which emphasized health maintenance. The charts of all patients referred following the HAE were reviewed approximately three months following the appraisal. There were no significant errors of omission discovered in the over 30,000 patients who had been examined by the nurse practitioners. In another study by Duncan et al. (1971), 182 children coming to a health station were first seen by a nurse practitioner, then by a pediatrician. A total of 278 conditions were identified by the nurse and/or physician. Differences between the nurses' and physicians' assessments were considered to be significant in only two instances (.7%).

Productivity of Practices Utilizing Nurse Practitioner

The productivity of practices utilizing nurse practitioners was assessed in several studies. In much of

this research, time and motion studies were used to calculate productivity. Bystran, Knight, Soper, Collis, Morgan, and Cello (1974) studied two nurses providing primary care to chronically ill patients. They estimated that most nurses should be able to follow 300 to 400 patients. A study by Scherer, Fortin, Spitzer, and Kergin (1977) revealed that graduate nurses saw an average of 50 patients per week, and referred approximately 15 of them to the physician with whom they were associated. This comprised an average of eight hours per week consultation time. There was an average increase of 14% in the physician's practice following the addition of nurse practitioners. Similarly, Spitzer et al. (1976) reported that physician/nurse practitioner teams had increased patient load by 41%, while increasing the volume of service provided by only 24%. Likewise, Schulman and Wood (1972) found that the nurse practitioners were seeing almost 15% of all the clinic visits by the end of six months.

Efficiency of Nurse Practitioners

The efficiency of nurse practitioners in a practice setting was examined in a few studies. Charney and Kitzman (1971) concluded from their time and motion study that the nurses operated on a reasonable level of efficiency. These nurses saw approximately two patients per hour. The results

of Merenstein, Wolfe, and Barker (1974) revealed that nurses in their new role as nurse practitioners spent less time with administrative, clerical, and preparatory tasks, and more time on patient care, interoffice communication, and telephone advice.

Financial Evaluation of Nurse Practitioners

Financial evaluation of nurse practitioners was conducted in several studies. Scherer et al. (1977) reported a 36.5% increase in salary for nurse practitioner graduates over their previous salary. In another analysis, Charney and Kitzman (1971) calculated that the overhead for a nurse practitioner varied from \$2,400 to \$3,800 per nurse per year, and that one year after intake to the study was closed the nurses were generating sufficient income to almost cover their salary.

The financial effect of the nurse practitioner role on patients was also examined. The Utilization and Financial Index (UF-Index) was used by Spitzer et al. (1976) to assess the economic impact of the nurse practitioner role. The UF-Index showed an average decrease in cost of 11% per person per year for health care following the introduction of the nurse practitioner. Physician services and hospital utilization were the main sources of reduction.

Attitudes and Perceptions of the Role Functions
of Nurse Practitioners

An attitude has previously been defined as "a consistency among responses to a specified set of stimuli or social objects" (Green, 1954, p. 300). If the role of the nurse practitioner is regarded as a "set of stimuli," then the attitude towards the role can be used to determine the behavioral reaction towards the role. Since many nurse practitioners seek employment with physicians, physician attitudes are of significance. Additionally, nurses' attitudes are important since they indicate the degree of peer support for the role. Once employed, a key issue for the nurse practitioner becomes utilization. Utilization may be determined by patients who have, to a certain extent, a choice among health care providers. Therefore, patient attitudes may be used to ascertain whether or not they plan to utilize the services provided by nurse practitioners.

The role activities of nurse practitioners are important to study, since the role of the nurse practitioner is not clearly defined and varies from state to state according to the nurse practice acts. Several studies have requested respondents to specify which functions or role activities should be included in the nurse practitioner role. This assists in determining their perceptions and

attitudes toward an expanded role for nurses. These studies are reviewed in the following subsections.

Physician's Attitudes and Perceptions of the
Role Functions of Nurse Practitioners

Physicians' attitudes toward nurse practitioners have been reported as generally favorable. Certain demographic variables were consistently associated with these favorable attitudes. Physicians who were in partnership practice were more likely to have favorable attitudes toward nurse practitioners than those in solo practice (Claiborn & Walton, 1979; Fottler, 1979; Patterson & Skinner, 1971; Schoen, Erickson, Barr, & Allen, 1973). Schoen et al. (1973) and Claiborn and Walton (1979) found that age and length of time in practice of physicians were inversely related to favorable attitudes toward nurse practitioners. Claiborn and Walton (1979) also reported that physicians in a subspecialty practice or with a high percentage of poverty patients were likely to be more favorable toward nurse practitioners.

Physicians surveyed in several studies were more permissive towards nurse practitioners in terms of specific functions in areas within the realm of nursing practice, with less acceptance in areas traditionally the responsibility of medicine (Dunn & Von Ruden, 1978; McCormack, Allen,

& Livers, 1971; Patterson & Skinner, 1971; Radke, 1977; Wright, 1975). Dunn and Von Ruden (1978) reported that over 50% of the physicians sampled perceived that functions involving evaluation and clinical judgment required consultation or should not be performed by nurse practitioners. McCormack et al. (1971) studied the actual utilization of nurses and office assistants in their practice. It was revealed that these nurses and office assistants frequently assumed functions which are traditionally considered physicians' activities.

Many of the physicians surveyed expressed concerns over the nurse practitioner role. Findings revealed that physicians felt that the quality of care would be adversely affected (Claiborn & Walton, 1979; Lawrence, DeFries, Putnam, Pickard, Cyr, & Whiteside, 1977; Radke, 1977; Wright, 1975). Another concern over the nurse practitioner role mentioned by physicians in the research reviewed was interference with the physician-patient relationship (Lawrence et al., 1977; McCormack et al., 1971; Patterson & Skinner, 1971; Radke, 1977). Two studies cited patient acceptance as a concern of physicians (McCormack et al., 1971; Patterson & Skinner, 1971). Wright (1975) and Radke (1977) mentioned availability of funds to cover services to be a source of concern to physicians. Other physician

considerations identified by Patterson and Skinner (1971) were: the possibility of added night calls due to an increased patient caseload, inadequate office space due to an additional staff member, and establishing a fee structure for nursing services. The establishment of a fee structure was of concern to physicians because, according to the Judicial Council of the American Medical Association, a physician "is not engaged in a commercial enterprise and he should not make a mark-up commission or profit on the services rendered by others" (Judicial Council, 1969, p. 1).

Findings revealed unfavorable attitudes of physicians toward nurse practitioners (Fottler, Gibson, & Pinchoff, 1978; Holzemer, Weston, & Jeanes, 1978; Little, 1978). Holzemer et al. (1978) reported that only 13% of the physicians surveyed endorsed the pediatric nurse practitioner (PNP) role, 45% had reservations but would probably support the PNP role, and 42% opposed the role. Willingness to employ nurse practitioners was used by Fottler et al. (1978) and Little (1978) as a measure of physicians' attitudes. Fottler et al. (1978) revealed that 45% of the physicians surveyed were unwilling to employ nurse practitioners, compared with 49% reported by Little (1978) who were unwilling.

Nurses' Attitudes and Perceptions of the Role
Functions of Nurse Practitioners

The attitudes of other nurses toward nurse practitioners were generally favorable (Tharp, Baker, & Brower, 1979; Wright, 1976). Wright (1976) conducted a mailed survey of a random sample of 800 registered nurses in the state of Texas. She reported that 206 or 88% of the respondents expressed either a favorable or very favorable impression of the family nurse clinician (FNC) concept. The nurses supported functions which required decision making in the diagnostic-therapeutic process. However, those functions received less support than the functions traditionally included in the role of the professional nurse. Expanded role functions receiving greatest support included: compiling health histories of patients and families, performing a triage function, and monitoring stable chronic illnesses. In another investigation, Tharp et al. (1979) studied the attitude of nurses towards nurse practitioners in a nursing home setting. Eight members of the nursing staff who had not had prior contact with nurse practitioners participated in this study. Their attitudes toward nurse practitioners were initially favorable and showed improvement with the introduction of a geriatric nurse practitioner (GNP) into the setting.

Comparative Studies--Nurses' and Physicians' Attitudes and Perceptions of the Role Functions of Nurse Practitioners

Research has been conducted with the purpose of comparing the attitudes of nurses and physicians toward nurse practitioners (Burkett, Parken-Harris, Kuhn, & Escovitz, 1978; Heiman & Dempsey, 1976; Monnig, 1976; Reed & Roghmann, 1971). Identical questionnaires were used with nurse and physician samples in each study. Monnig (1976) reported that nurses have more positive attitudes toward nurse practitioners working in an expanded role than do physicians. Reed and Roghmann (1971) who included medical students in their study found that nurses held the most favorable attitudes toward nurse practitioners, followed by medical students, then physicians; and that female physicians were more favorable than their male colleagues. The attitude of nurses and physicians towards independent behavior in nurse practitioners was examined by Heiman and Dempsey (1976). The results, from most to least favorable, were as follows: female nurses, female physicians, male physicians and male nurses. Burkett et al. (1978) reported that younger nurses, oriented towards graduate preparation, were more likely to be proponents of greater autonomy for nurse practitioners. The results of a study by Reed and Roghmann (1971) were as follows:

(1) nurses who held higher positions in the hospital had the lowest acceptance of the expanded role; (2) as hospital work experience increased, nurses' acceptance of the expanded role decreased; (3) acceptance of the nurse practitioner role increased proportionately with additional educational preparation; and (4) recent graduates expressed greater acceptance of the expanded role than past graduates. Monnig (1976) reported similar findings. She revealed that nurses in practice from 11 to 20 years had more positive attitudes toward professional identity than older nurses, and that master's degree nurses consistently demonstrated more positive attitudes toward the nurse practitioner role than nurses with lesser degrees.

Patients' Attitudes Toward Nurse Practitioners

Research which examined patients' attitudes toward nurse practitioners has been generally favorable (Levine, Orr, Sheatsley, Lohr, & Brodie, 1978; Scott, 1975; Shivley, 1975; Zikmund & Miller, 1979). Scott (1975) examined the attitude of students who received care from nurse practitioners at the University of Kentucky Student Health Service. He revealed that 100% of the study sample felt that the nurse practitioner appeared to have competence in the diagnosis and therapy of the problem.

The attitude of adult and pediatric subgroups towards nurse practitioners was included in a study by Levine et al. (1978). Data indicated that both groups were favorable, with over 90% of the respondents in each subsample evaluating the nurse practitioner as "very good" or "good" in an overall evaluation (Zikmund & Miller, 1979). However, they expressed uncertainty as to whether or not the nurse practitioner could correctly diagnose illnesses. Shivley (1975) reported favorable attitudes toward the nurse practitioner, with almost 90% of the patients surveyed expressing confidence in the examination findings, and 80% of the patients either willing or eager to have their subsequent visits begin with an examination by the nurse practitioner.

Day, Egli, and Silver (1970) studied the attitudes of patients toward combined care from a pediatrician and his associate, a pediatric nurse practitioner. The findings revealed a high degree of satisfaction with the care jointly received from these two health professionals. The joint care was reported to be as good as or better than the care received from the pediatrician alone by 94% of the respondents.

Several investigations compared the attitudes of patients receiving care from nurse practitioners with the attitudes of patients receiving traditional medical care

(Batchelor, Spitzer, Comley, & Anderson, 1975; Burnip, Erickson, Barr, Shinefield, & Schoen, 1976; Kubala & Clever, 1974; Linn, 1976). Burnip et al. (1976) surveyed patients randomly assigned to either PNP or pediatricians in a large prepaid group practice health care plan, with the option of changing the type of provider at any time. The low cross-over rates found in the study were used as an indicator of relative parental satisfaction with PNPs. In a study by Linn (1976), patient acceptance and satisfaction with care by a family nurse practitioner (Primex) was reported to be equal to or more favorable than levels of satisfaction with traditional providers of care on four of five measures.

Batchelor et al. (1975) compared attitudes toward nurse practitioners of self-selected samples of patients obtaining care from a family medical center (FMC) with those for whom the FMC was not the usual source of care. The results indicated that the physician was the first choice of possible contacts among both groups in specific worry-inducing situations. However, there was increased acceptance of the nurse by FMC users as the person who would be contacted as a second choice if their first choice could not be reached.

Kubala and Clever (1974) reported somewhat negative attitudes of patients from a general medical clinic toward

nurse practitioners. These patients were randomly divided into two groups: a control group, which continued to receive care from the general medical clinic; and the experimental group, which received primary care from the nurse practitioners with physician consultation. Although the majority of patients accepted without question the change from physician to nurse, about 15% expressed concern over the change at the outset, and another 10% did so as time progressed.

Summary

The nurse practitioner role evolved as a result of a gap in the health care delivery system. Since its inception, studies have been undertaken with the purpose of analyzing and monitoring this role in relation to its objectives. Also, numerous evaluation studies have been conducted to assess nurse practitioners functioning in an expanded role. Some of the findings that these studies reported included that nurse practitioners delivered quality care, operated at a reasonable level of efficiency, and decreased the cost per person per year for health care.

Physician attitudes were generally favorable toward nurse practitioners; however, they were less favorable in areas which were traditionally within the realm of medicine. Many physicians expressed concerns over the nurse

practitioner role, including the following: an adverse effect on quality of care, interference with physician-patient relationships, patient acceptance, availability of funds to cover services, added night calls, fee structure, and inadequate office space.

The attitudes of other nurses toward the role of the nurse practitioner were generally positive. Nurses with additional educational preparation and recent graduates were reported to hold the most favorable attitudes toward the nurse practitioner role. Finally, patient acceptance of the nurse practitioner was reported to be quite high in most studies.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This was a nonexperimental study. It was a mailed survey approach with both a descriptive and an explanatory component. The data collection took place at one point in time and can be classified as a cross-sectional design.

Setting

Data were collected in two different states. The first is located in the southwest United States. It has a total land area of 267,338 square miles (Encyclopaedia Britannica, 1974) and a population of 11,197,000 persons (U.S. Bureau, 1979). The second state is located in the northeastern part of the country. It is considerably smaller with a total land area of 8,257 square miles (Encyclopaedia Britannica, 1974) and 5,689,000 inhabitants (U. S. Bureau, 1979). Surveys were mailed to the private residences of the registered nurses in the sample. Although there was no control over where they were completed, most likely it was done at the subject's home.

Population and Sample

The target population was all of the registered nurses in the selected southwestern and northeastern states. There were approximately 80,000 nurses registered in the southwestern state and 88,000 nurses registered in the northeastern state. For an individual to be eligible to be in the sample, one must have been a registered nurse currently licensed in either (or both) of the two states.

A probability sampling design with the simple random method of sampling was employed. There were 437 pages in the southwestern state's current roster of registered nurses and 1,418 pages in the northeastern state's current roster. A total of 90 pages were selected from each roster by means of a table of random numbers. From each page chosen, one registered nurse was selected for the sample. This final selection process again involved the use of a table of random numbers. The resulting sample consisted of a total of 180 registered nurses, 90 from each state.

Protection of Human Subjects

Approval was obtained to conduct the study from the Texas Woman's University Human Research Review Committee (Appendix A). This assured protection of each individual involved in the study. In order to provide anonymity to subjects the surveys did not ask names. Participation in

the study was voluntary. All subjects were requested not to provide a return address with their response.

Instruments

One instrument was utilized in the study. Theiss (1976) adapted and modified two separate questionnaires originally developed by Schoen (Schoen, Erickson, Barr, & Allen, 1973) and Schoenauer (1973) to construct two scales. Written permission for the utilization and redevelopment of these scales was obtained from the developer (see Appendix B).

The instrument used in this study consisted of three parts. Part A was the Demographic Data Section developed by this investigator. Part B was the General Attitude Towards Nurse Practitioners Scale developed by Theiss (1976), and Part C was the Role Activities Scale, also developed by Theiss (1976). Theiss (1976) investigated the attitudes of registered nurses employed at the San Diego Veterans Administration Hospital towards nurse practitioners.

A total of 11 items were included in the Demographic Data Section (see Appendix C). These items pertain to the following: state of licensure, current age, sex, ethnicity, current employment status, length of current employment setting, job title, and nurse practitioner training.

The General Attitude Towards Nurse Practitioners Scale adapted by Theiss (1976) is a Likert-type scale consisting of 16 statements related to attitudes toward the expanded role in nursing (see Appendix C). The items from the scale included in the study were items #1, 2, 3, 4, 7, 9, 10, 12, 14, 15, and 16, a total of 11 items. The following modifications were made: Item #1 refers to health care for the veteran--the word "veteran" was changed to "patient," and item #10 refers to acceptance of health care by veterans' families--the word "veterans'" was changed to "patients'." Construct validity was used to differentiate the discrete domain of attitudes related to the general attitude towards nurse practitioners measured by this scale. The alpha coefficient, which indicates the reliability of the instrument, was reported by Theiss (1976) as $\underline{r} = .81$. The previous word changes were assumed to have no effect on the reliability. Reliability was determined for this population after completion of data collection.

The scale developed by Theiss (1976) to determine role activities consists of 54 items (see Appendix C). Analysis for construct validity using discriminability revealed two consistent and discrete domains of activities within the scale: (1) role activities, and (2) role activities for social functions (see Appendix C). The Role Activities Scale, 23 items with an alpha coefficient of $\underline{r} = .91$

reported by the investigator, was used in this investigation. It consists of items #5, 6, 9, 11, 15, 18, 19, 22, 23, 25, 26, 27, 28, 29, 31, 34, 35, 39, 41, 43, 47, 49, and 50. The following modification was made: Item #41 refers to health care for the veteran--it was changed to read "patient to another facility."

Each item from the Demographic Data Section was precoded numerically. This section was precoded with either T or M to indicate state of residency. Since each item in Part A relates to a discrete attribute, the scores were analyzed separately and not as a unit. The 11 items in the Attitude Towards Nurse Practitioners Scale were scored from 1 to 5--with 5 indicating the most favorable attitude and 1 indicating the least favorable attitude. Therefore, a total score of 55 would indicate the most favorable score obtainable with the instrument, while a total score of 11 would indicate the least favorable score obtainable. Items #3, 7, 9, 12, and 15 were stated as negative attitudes and were reverse scored. The items in Part C, which relate to specific role activities that the nurse practitioner could perform, were scored numerically from 1 to 3 in terms of permissibility. The three possible categories for each item were Yes, Yes with Physician Consultation, and No. Therefore, a total score of 69 would indicate the most

permissive attitude to the potential role activities of nurse practitioners obtainable with the instrument, while a total score of 23 would indicate the least permissive attitude obtainable.

Data Collection

Each of the 180 randomly chosen subjects was mailed an envelope containing a cover letter, the instrument, and a stamped self-addressed envelope. All materials were mailed to the home addresses of the participants obtained from the respective rosters of registered nurses for each state. A total of 90 surveys were mailed to registered nurses licensed in the southwestern state, the other 90 to registered nurses licensed in the northeastern state.

The cover letter explained the general purposes, benefits, and possible risks associated with participation in the study. It was explained that participation was voluntary, and that return of the questionnaire constituted consent to participate in the study.

All surveys consisted of three parts: Part A, the Demographic Data Section; Part B, the General Attitude Towards Nurse Practitioners Scale; and Part C, the Role Activities Scale. Identical instructions were included with each survey. It was requested that participants choose only one response per item. Each item in Part A

required a checkmark for the most appropriate response to the selected demographic characteristics. Five alternative responses were given for each statement on the General Attitude Towards Nurse Practitioners Scale.

Participants in the study were asked to choose the response which most closely matched their feelings toward the statement. The Role Activities Scale included statements of specific activities or functions. Respondents were asked to check one of three possible responses to each item indicating the degree to which the nurse practitioner could be allowed to perform the specific activity. A deadline for the return of completed surveys was specified.

Treatment of Data

The attribute variables of state of licensure, sex, ethnicity, employment status, work setting, job title, regional setting, nurse practitioner training, and educational status were described for the sample using percentages. Age and length of employment, ratio level variables, were described with percentages, means, and standard deviations. Both the attitude towards nurse practitioners and the level of accepted role activities are ordinal levels of measurement. They were described using percentages, medians, and ranges.

Inferential statistics were performed to test the differences between the independent variables and the dependent variables at $p \leq .05$. The Kruskal-Wallis test was used to determine the significance between the independent variables, ethnicity, work setting, regional setting, job title, educational attainment and the dependent variable, attitude towards nurse practitioners. The Kruskal-Wallis test was also used to determine the differences between the same independent variables and the dependent variable level of acceptance of role activities that a nurse practitioner could perform. The differences between the independent variables state of licensure, sex, employment status, and nurse practitioner training and the same dependent variables were analyzed using the Mann-Whitney U test.

The Spearman Rho correlation coefficient was used to determine if any association exists between:

1. Age and the attitude towards nurse practitioners as measured by the General Attitude Towards Nurse Practitioners Scale.
2. Age and the level of acceptance of role functions a nurse practitioner could perform as measured by the Role Activities Scale.
3. Number of years employed as a nurse and the attitude towards nurse practitioners as measured by the General Attitude Towards Nurse Practitioners Scale.

4. Number of years employed as a nurse and the level of acceptance of role functions a nurse practitioner could perform as measured by the Role Activities Scale.
5. The attitude towards nurse practitioners as measured by the General Attitude Towards Nurse Practitioners Scale and the level of acceptance of role function a nurse practitioner could perform as measured by the Role Activities Scale.

All the correlation coefficients obtained were converted to a t to determine statistical significance, $p \leq .05$.

Summary

The purpose of this nonexperimental study was to describe the attitude towards nurse practitioners and the accepted level of role activities they could perform as viewed by select samples of registered nurses in two regions of the United States. In addition, this study determined if there was a significant difference in attitude and acceptance of role activities between the samples at the $p \leq .05$ level. The study was conducted as a mailed survey using a random sample of registered nurses from two different states in the United States. The sample was chosen from lists of registered nurses currently licensed in either/or both of the two states.

Demographic data and attitudes and opinions were collected by the use of a three-part survey. Data were analyzed using descriptive and nonparametric statistics and tested for significance at $p \leq .05$.

CHAPTER 4

ANALYSIS OF DATA

Included in this chapter is a summary of the survey returns, followed by a detailed description of the respondents in terms of selected demographic variables. The findings are reported in relation to the original research questions. Finally, all of the findings are briefly summarized.

This study was conducted to identify attitudes toward nurse practitioners and the accepted level of role activities these practitioners could perform as viewed by a sample of nurses from Texas (TX) and Massachusetts (MA). For this purpose, surveys were mailed to 90 nurses in each state. Fifteen were undeliverable due to unforwardable addresses--six of those from the Texas sample and nine from the Massachusetts sample. One survey was returned blank as a refusal. A note was enclosed stating that the subject did not feel qualified to respond to the survey due to a long-standing inactive status in nursing. Seventy-four (41.1%) completed surveys were returned (see Table 1). Texas was the state with the highest percentage of responses: there were 41 (45.6%) surveys returned compared

with 33 (36.5%) from Massachusetts. The number and percentage of completed surveys are summarized in Table 1.

Table 1

Frequency and Percentage of Responses to Surveys of
Attitudes Toward Nurse Practitioners Mailed to
Registered Nurses from Texas and Massachusetts

| Sample | <u>Texas</u> | | <u>Massachusetts</u> | | <u>Total</u> | |
|---------------------|--------------|-------|----------------------|-------|--------------|-------|
| | # | % | # | % | # | % |
| Completed Responses | 41 | 45.6 | 33 | 36.5 | 74 | 41.1 |
| Undeliverable | 6 | 6.6 | 9 | 10.0 | 15 | 8.3 |
| Refusals | 0 | 0.0 | 1 | 1.1 | 1 | .6 |
| No Response | 43 | 47.8 | 47 | 52.3 | 90 | 50.0 |
| Totals | 90 | 100.0 | 90 | 100.0 | 180 | 100.0 |

Description of Sample

The demographic characteristics of the respondents are described in the following subsections.

Sex

The predominant number of respondents were female (see Table 2). There was only one male respondent.

Age

The age of the respondents ranged from 24 to 80 years. The mean age for the total sample was 41.2 years; 38.2

Table 2

Frequency and Percentage of Sex of Registered Nurses
in Texas and Massachusetts Who Completed a Survey of
Attitudes Toward Nurse Practitioners

| Sample | Texas | | Massachusetts ^a | | Total | |
|---------|-------|-------|----------------------------|-------|-------|-------|
| | # | % | # | % | # | % |
| Females | 41 | 100.0 | 31 | 96.9 | 72 | 98.6 |
| Males | 0 | 0.0 | 1 | 3.1 | 1 | 1.4 |
| Totals | 41 | 100.0 | 32 | 100.0 | 73 | 100.0 |

^aOne Massachusetts respondent did not indicate sex.

years for the Texas respondents and 45.0 years for the Massachusetts group (see Table 3).

Ethnicity

A large majority (95.9%) of the respondents were white (see Table 4). The remainder were either Hispanic or Asian. There were no black respondents to the survey.

Employment Status

Over one quarter of the respondents were inactive, with the Texas sample having the larger proportion of inactive nurses (see Table 5). The mean length of employment of the respondents who reported themselves as active varied between the two states. The mean for the Texas

Table 3

Frequency and Percentage of Age of Registered Nurses
in Texas and Massachusetts Who Completed a Survey of
Attitudes Toward Nurse Practitioners

| Age (Years) | Texas | | Massachusetts | | Total | |
|-------------|-------|-------|---------------|-------|-------|-------|
| | # | % | # | % | # | % |
| 20-29 | 12 | 29.4 | 3 | 9.1 | 15 | 20.2 |
| 30-39 | 15 | 36.4 | 12 | 36.4 | 27 | 36.5 |
| 40-49 | 7 | 17.1 | 7 | 21.2 | 14 | 18.9 |
| 50-59 | 5 | 12.2 | 6 | 18.2 | 11 | 14.9 |
| 60-69 | 2 | 4.9 | 4 | 12.1 | 6 | 8.1 |
| 70-79 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 80-89 | 0 | 0.0 | 1 | 3.0 | 1 | 1.4 |
| Totals | 41 | 100.0 | 33 | 100.0 | 74 | 100.0 |

Table 4

Frequency and Percentage of Ethnicity of Registered Nurses
in Texas and Massachusetts Who Completed a Survey of
Attitudes Toward Nurse Practitioners

| Ethnic Background | Texas | | Massachusetts | | Total | |
|-------------------|-------|-------|---------------|-------|-------|-------|
| | # | % | # | % | # | % |
| Black | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| White | 39 | 95.1 | 32 | 97.0 | 71 | 95.9 |
| Hispanic | 2 | 4.9 | 0 | 0.0 | 2 | 2.7 |
| Asian | 0 | 0.0 | 1 | 3.0 | 1 | 1.4 |
| Totals | 41 | 100.0 | 33 | 100.0 | 74 | 100.0 |

respondents was 11.3 years, compared with 19.4 years for the Massachusetts respondents. The standard deviation of the length of employment of the active respondents was 10.8 (Table 6).

Table 5

Frequency and Percentage of Employment Status of Registered Nurses in Texas and Massachusetts Who Completed a Survey of Attitudes Toward Nurse Practitioners

| Employment Status | Texas | | Massachusetts | | Total | |
|-------------------|-------|-------|---------------|-------|-------|-------|
| | # | % | # | % | # | % |
| Active | 26 | 63.4 | 27 | 81.8 | 53 | 71.6 |
| Inactive | 15 | 36.6 | 6 | 18.2 | 21 | 28.4 |
| Totals | 41 | 100.0 | 33 | 100.0 | 74 | 100.0 |

Table 6

Frequency and Percentage of Length of Employment in Years of Registered Nurses in Texas and Massachusetts Who Completed a Survey of Attitudes Toward Nurse Practitioners

| Years of Employment | Texas | | Massachusetts | | Total | |
|---------------------|-------|-------|---------------|-------|-------|-------|
| | # | % | # | % | # | % |
| 0-10 | 23 | 57.5 | 7 | 21.2 | 30 | 41.2 |
| 11-20 | 13 | 32.5 | 13 | 39.4 | 26 | 35.6 |
| 21-30 | 2 | 5.0 | 7 | 21.2 | 9 | 12.3 |
| 31-40 | 2 | 5.0 | 4 | 12.1 | 6 | 8.2 |
| 41-50 | 0 | 0.0 | 2 | 6.1 | 2 | 2.7 |
| Totals | 40 | 100.0 | 33 | 100.0 | 73 | 100.0 |

Job Title

The staff nurse position was the most frequently self-reported job title with 18 (34.0%) respondents. The second largest category was "other," comprising nine (17.0%) of the respondents. Table 7 summarizes the respondents by job title. Although there were no respondents who reported their job title to be nurse practitioner, two nurses from each state reported having received formal nurse practitioner training.

Table 7

Frequency and Percentage of Self-Reported Job Title of Active Registered Nurses in Texas and Massachusetts Who Completed a Survey of Attitudes Toward Nurse Practitioners

| Self-Reported Job Title | <u>Texas</u> | | <u>Massachusetts</u> | | <u>Total</u> | |
|------------------------------|--------------|-------|----------------------|-------|--------------|-------|
| | # | % | # | % | # | % |
| Supervisor | 3 | 11.6 | 5 | 18.6 | 8 | 15.0 |
| Educator | 2 | 7.7 | 3 | 11.1 | 5 | 9.3 |
| Administrator | 1 | 3.8 | 2 | 7.4 | 3 | 5.7 |
| Clinical Nurse Specialist | 0 | 0.0 | 1 | 3.7 | 1 | 1.9 |
| Intensive Care Nurse | 2 | 7.7 | 1 | 3.7 | 3 | 5.7 |
| Emergency Room Nurse | 0 | 0.0 | 2 | 7.4 | 2 | 3.8 |
| Staff Nurse | 9 | 34.6 | 9 | 33.3 | 18 | 34.0 |
| Consultant | 1 | 3.8 | 0 | 0.0 | 1 | 1.9 |
| Head Nurse | 2 | 7.7 | 1 | 3.7 | 3 | 5.7 |
| Other | 6 | 23.1 | 3 | 11.1 | 9 | 17.0 |
| Totals | 26 | 100.0 | 27 | 100.0 | 53 | 100.0 |

Work Setting

The work setting of the respondents active in nursing varied. A total of 30 (56.6%) respondents were employed in hospitals. The community and college/university settings accounted for another five (9.4%) and two (3.8%) respondents, respectively. An additional 16 (30.2%) respondents were in the "other" category (see Table 8). Respondents from urban and suburban settings were almost evenly split at 32 (45.7%) and 30 (42.9%), respectively. Only eight (11.4%) of the respondents were from rural regions. Four respondents did not indicate their regional setting (see Table 9).

Table 8

Frequency and Percentage of Work Settings of Active
Registered Nurses in Texas and Massachusetts Who
Completed a Survey of Attitudes Toward
Nurse Practitioners

| Work Settings | <u>Texas</u> | | <u>Massachusetts</u> | | <u>Total</u> | |
|--------------------|--------------|-------|----------------------|-------|--------------|-------|
| | # | % | # | % | # | % |
| Hospital | 17 | 65.4 | 13 | 48.2 | 30 | 56.6 |
| College/University | 1 | 3.8 | 1 | 3.7 | 2 | 3.8 |
| Community | 0 | 0.0 | 5 | 18.5 | 5 | 9.4 |
| Other | 8 | 30.8 | 8 | 29.6 | 16 | 30.2 |
| Totals | 26 | 100.0 | 27 | 100.0 | 53 | 100.0 |

Table 9

Frequency and Percentage of Regional Settings of
Registered Nurses in Texas and Massachusetts
Who Completed a Survey of Attitudes Toward
Nurse Practitioners

| Regional Settings | <u>Texas</u> | | <u>Massachusetts</u> | | <u>Total^a</u> | |
|-------------------|--------------|-------|----------------------|-------|--------------------------|-------|
| | # | % | # | % | # | % |
| Rural | 5 | 13.2 | 3 | 9.4 | 8 | 11.4 |
| Suburban | 14 | 36.8 | 16 | 50.0 | 30 | 42.9 |
| Urban | 19 | 50.0 | 13 | 40.6 | 32 | 45.7 |
| Totals | 38 | 100.0 | 32 | 100.0 | 70 | 100.0 |

^aFour respondents did not indicate their regional settings.

Training/Education

The greatest percentage (45.9%) of respondents were educated at the diploma level. Ten (24.4%) respondents from the Texas sample were educated at the baccalaureate or master's level, compared with 14 (42.4%) from the Massachusetts sample (see Table 10).

Findings

The scores on the General Attitude Towards Nurse Practitioners Scale were computed to determine the attitude of the respondents towards nurse practitioners. The possible scores on this scale ranged from 11 to 55, with a

Table 10

Frequency and Percentage of Educational Levels of
Registered Nurses in Texas and Massachusetts Who
Completed a Survey of Attitudes Toward
Nurse Practitioners

| Educational Levels | Texas | | Massachusetts | | Total | |
|-----------------------------------|-------|-------|---------------|-------|-------|-------|
| | # | % | # | % | # | % |
| Diploma | 20 | 48.8 | 14 | 42.5 | 34 | 45.9 |
| Associate Degree | 10 | 24.4 | 4 | 12.1 | 14 | 18.8 |
| Baccalaureate Degree | 7 | 17.1 | 8 | 24.2 | 15 | 20.3 |
| Post-Baccalaureate Certificate | 1 | 2.4 | 1 | 3.0 | 2 | 2.8 |
| Master's Degree | 3 | 7.3 | 6 | 18.2 | 9 | 12.2 |
| Totals | 41 | 100.0 | 33 | 100.0 | 74 | 100.0 |

higher score indicating a more favorable attitude. The scores of the 74 respondents ranged from 23 to 48, with a median score of 39 for the total sample. The median score for the Texas sample was 38, compared with a median score of 40 for the Massachusetts group. In Table 11, a summary frequency distribution is used to describe the attitude scores by the number and percentage achieving them. An alpha coefficient of $r = .73$ for the General Attitude Towards Nurse Practitioners Scale was calculated using a Cronbach's alpha.

Table 11

Frequency and Percentage of Overall Attitude Scores of
Registered Nurses from Texas and Massachusetts Who
Completed the General Attitude Towards Nurse
Practitioners Scale

| Scores | Texas | | Massachusetts | | Total | |
|--------|-------|-------|---------------|-------|-------|-------|
| | # | % | # | % | # | % |
| 20-24 | 1 | 2.4 | 1 | 3.0 | 2 | 2.6 |
| 25-29 | 2 | 4.9 | 2 | 6.1 | 4 | 5.4 |
| 30-34 | 8 | 19.6 | 3 | 9.1 | 11 | 14.9 |
| 35-39 | 13 | 31.7 | 8 | 24.2 | 21 | 28.4 |
| 40-44 | 14 | 34.1 | 17 | 51.5 | 31 | 41.9 |
| 45-49 | 3 | 7.3 | 2 | 6.1 | 5 | 6.8 |
| Totals | 41 | 100.0 | 33 | 100.0 | 74 | 100.0 |

To determine the role activities a nurse practitioner could perform as perceived by the respondents, scores on the Role Activities Scale were computed. The possible range of scores on the Role Activities Scale was 23 to 69. The median score of the Texas sample was 63 compared with a median score of 60 for the Massachusetts respondents (see Table 12). An alpha coefficient of $\underline{r} = .82$ for the Role Activities Scale was calculated using Cronbach's alpha.

Table 12

Frequency and Percentage of Overall Attitude Scores of
Registered Nurses from Texas and Massachusetts Who
Completed the Role Activities Scale

| Score | Texas | | Massachusetts ^a | | Total | |
|--------|-------|-------|----------------------------|-------|-------|-------|
| | # | % | # | % | # | % |
| 45-49 | 4 | 9.7 | 4 | 13.3 | 8 | 11.3 |
| 50-54 | 0 | 0.0 | 4 | 13.3 | 4 | 5.6 |
| 55-59 | 9 | 22.0 | 5 | 16.7 | 14 | 19.7 |
| 60-64 | 18 | 43.9 | 12 | 40.0 | 30 | 42.3 |
| 65-69 | 10 | 24.4 | 5 | 16.7 | 15 | 21.1 |
| Totals | 41 | 100.0 | 30 | 100.0 | 71 | 100.0 |

^aThree Massachusetts respondents completed this item incorrectly and could not be used for this analysis.

Attitude Towards Nurse Practitioner

Two problems related to the attitude towards nurse practitioners which this study addressed included:

1. Do nurses licensed in two states differ in terms of their attitudes toward nurse practitioners?
2. Are selected demographic characteristics related to attitudes toward nurse practitioners?

A Kruskal-Wallis one-way analysis of variance was used to determine the relationship between the scores obtained on the General Attitude Towards Nurse Practitioners

Scale and the ethnicity, work setting, regional setting, job title and educational attainment of the respondents. The results indicated that none of these variables were related to attitudes toward nurse practitioners at $p \leq .05$ (see Table 13).

Table 13

Values of χ^2 Derived from a Kruskal-Wallis One-Way ANOVA for Relationships Between Attitude Towards Nurse Practitioners and Five Variables

| Variables Related to Attitude Towards Nurse Practitioners | Attitude Towards Nurse Practitioners | |
|---|--------------------------------------|-------|
| | χ^2 Values ^a | p |
| Ethnicity | 1.991 | 0.369 |
| Work Setting | 4.541 | 0.338 |
| Regional Setting | 2.345 | 0.504 |
| Job Title | 1.870 | 0.760 |
| Educational Attainment | 9.278 | 0.055 |

^aCorrected for ties.

The Mann-Whitney U test was performed to determine the differences between attitudes toward nurse practitioners and state of licensure, sex, employment status, and nurse practitioner training for the respondents. Using a two-tailed test, none of the differences was significant at $p \leq .05$ (see Table 14).

Table 14

Values of z for Relationships Between Attitude
Towards Nurse Practitioners and Four Variables

| Variables Related to Attitude Towards Nurse Practitioners | <u>Attitude Towards Nurse Practitioners</u> | |
|--|---|-------------------------|
| | <u>z Scores</u> | <u>p^a</u> |
| State of Licensure | -1.635 | 0.102 |
| Sex | -0.262 | 0.794 |
| Employment | -0.937 | 0.349 |
| Nurse Practitioner Training | -0.300 | 0.765 |

^aTwo-tailed p .

The Spearman Rho correlation coefficient was used to determine the relationship between attitudes toward nurse practitioners and age, number of years of employment as a nurse, and role activities scores. Correlations were converted to a t to determine the statistical significance of the correlation coefficients. There was a statistically significant positive correlation ($p=.03$) between the General Attitude Towards Nurse Practitioners Scale and the Role Activities Scale (see Table 15). Associations between attitudes toward nurse practitioners and both the age and number of years of employment as a nurse were not statistically significant.

Table 15

Spearman Rho Correlation Coefficients Between Attitude Towards Nurse Practitioners/Role Activities and Related Variables

| Variables | <u>Attitude Towards Nurse Practitioners</u> | | <u>Role Activities</u> | |
|--|---|-------|----------------------------|-------|
| | Correlation Coefficient | p | Correlation Coefficient | p |
| Age | .0629 | .297 | -.2802 | .008* |
| Number of Years Employed as a Nurse | -.0455 | .350 | -.2983 | .005* |
| Role Activities | .2253 | .027* | ---- | ---- |

* $p \leq .05$

Accepted Role Activities

Two problems related to the acceptance of specific role activities performed by the nurse practitioner which this study addressed included:

1. Do nurses licensed in two states differ in terms of their level of acceptance of specific role activities performed by the nurse practitioner?
2. Are selected demographic characteristics related to the level of acceptance of specific role activities performed by the nurse practitioner?

The Kruskal-Wallis test was again used to determine the relationship between the scores obtained on the Role Activities Scale and the independent variables pertaining to: ethnicity, work setting, regional setting, job title, and educational attainment of the respondents. The difference between accepted role activities and ethnicity was significant at $p=.04$ (see Table 16). The median score of the respondents on the Role Activities Scale was 61. The Asian nurse scored the highest, followed by the white nurses, then the Hispanic nurses. None of the other associations were significant at $p\leq .05$.

The Mann-Whitney U test was performed to determine the differences between the accepted role activities a nurse practitioner could perform and state of licensure, sex,

Table 16

Values of χ^2 Derived from a Kruskal-Wallis One-Way
ANOVA for Relationships Between Accepted Role
Activities and Five Variables

| Variables Related to Accepted Role Activities | Accepted Role Activities | |
|---|------------------------------|-------|
| | χ^2 Values ^a | p |
| Ethnicity | 6.636 | .036* |
| Work Setting | 5.649 | .227 |
| Regional Setting | 3.618 | .306 |
| Job Title | 11.791 | .299 |
| Educational Attainment | 1.870 | .760 |

^aCorrected for ties.

* $p \leq .05$

employment status, and nurse practitioner training of the respondents. A two-tailed test showed that none of the differences were significant at $p \leq .05$ (see Table 17).

The Spearman Rho correlation coefficient was used to determine the relationship between the scores on the Role Activities Scale and both the age and number of years of employment. Both variables were significantly ($p \leq .05$) negatively related to role activities scores. Therefore the older the respondent and/or the greater the number of years of employment, the less favorable they were towards

Table 17

Values of z Derived from the Mann-Whitney U Test for Relationships Between Attitude Towards Nurse Practitioners and Four Variables

| Variables Related to Accepted Role Activities | <u>Accepted Role Activities</u> | |
|---|---------------------------------|-------------------------|
| | <u>z Scores</u> | <u>p^a</u> |
| State of Licensure | -1.925 | .054 |
| Sex | -0.214 | .830 |
| Employment Status | -1.660 | .097 |
| Nurse Practitioner Training | -0.791 | .429 |

^aTwo-tailed p .

an increased level of role activities for the nurse practitioner.

Summary of Findings

A total of 74 completed surveys were returned from a total of 180 sent out, yielding a response rate of 41.1%; 41 returns were from Texas and 33 were from Massachusetts. The majority of respondents were female (97.3%). The age range of the respondents was 24 to 80 years, with a mean age of 41.2 years. Over 25% of the sample reported an inactive employment status. There were 71 white respondents (95.9%), two Hispanic respondents (2.7%), and one Asian respondent (1.4%). No blacks responded to the survey.

A total of 30 (56.6%) subjects was employed in hospitals. The most frequently self-reported job title was staff nurse, with 18 (34.0%) respondents. Although no subjects reported their job title to be nurse practitioner, two respondents from each state reported having received formal nurse practitioner training. Respondents from urban and suburban settings were almost evenly split at 32 (45.7%) and 30 (42.9%), respectively. The greatest percentage of respondents were educated at the diploma level (45.9%). Scores on the General Attitude Towards Nurse Practitioners Scale ranged from 23 to 48, with a median score of 39 for the total sample. The median score of the Texas sample was 63 compared with a median score of 60 for the Massachusetts respondents.

A Kruskal-Wallis one-way analysis of variance was used to determine the relationship between the scores obtained on both the General Attitude Towards Nurse Practitioner Scale and the Role Activities Scale and the following variables: ethnicity, work setting, regional setting, job title, and educational attainment of the respondents. The difference between accepted role activities and ethnicity was significant at $p=.04$, with the Asian nurse scoring the highest.

The Mann-Whitney U test was performed to determine the differences between both the attitude towards nurse

practitioners and the accepted role activities a nurse practitioner could perform and the following variables: state of licensure, sex, employment status, and nurse practitioner training of the respondents. None of the differences were significant at $p \leq .05$.

Finally, the Spearman Rho correlation coefficient was used to determine the relationship between the attitude toward nurse practitioner scores and the role activities scores, and between the attitude toward nurse practitioner and role activities scores and the age and number of years of employment as a nurse. There was a statistically significant positive correlation ($p = .03$) between the General Attitude Towards Nurse Practitioners Scale and the Role Activities Scale ($r = .23$). There was also a statistically significant ($p \leq .05$) negative association between the scores on the Role Activities Scale and the age of the respondents ($r = -.28$) and between the scores on the Role Activities Scale and the number of years of employment as a nurse ($r = -.30$).

CHAPTER 5

SUMMARY OF THE STUDY

This study focused on the attitudes of nurses toward nurse practitioners in two different regions of the country. The problems this study addressed included the following:

- (1) whether or not nurses licensed in two states differed in terms of their attitudes toward nurse practitioners;
- (2) whether or not nurses licensed in two states differed in terms of their level of acceptance of specific role activities performed by the nurse practitioner; (3) whether or not selected demographic characteristics were related to attitudes toward nurse practitioners; and (4) whether or not selected demographic characteristics were related to the level of acceptance of specific role activities performed by the nurse practitioner.

There were four main hypotheses which were tested in this study. These hypotheses were as follows:

1. Attitudes toward nurse practitioners will be more favorable by registered nurses licensed in a southwestern state than registered nurses licensed in a northeastern state.

2. Registered nurses licensed in a northeastern state will perceive a broader scope of role activities appropriate to the nurse practitioner role than registered nurses licensed in a southwestern state.
3. There is a relationship between selected demographic characteristics, such as personal attributes, state of licensure, educational status and employment status, of registered nurses and the attitudes toward nurse practitioners.
4. There is a relationship between selected demographic characteristics, such as personal attributes, state of licensure, educational status and employment status, of registered nurses and the acceptance of specific role activities performed by the nurse practitioner.

Summary

This study was conducted as a mailed survey. A total of 180 questionnaires was sent to 90 randomly selected registered nurses in two different states. Participation in the study was voluntary. An instrument originally developed by Schoen (Schoen, Erickson, Barr, & Allen, 1973) and Schoenauer (1973) and modified by Theiss (1976) comprised two of the three sections of the instrument used in this study. An 11-item demographic data section was developed by the investigator for this study. The other two

sections were the General Attitude Towards Nurse Practitioners Scale and the Role Activities Scale developed by Theiss (1976). The General Attitude Towards Nurse Practitioners Scale is a Likert-type scale consisting of 16 statements related to the expanded role in nursing with an alpha coefficient reported as $\underline{r} = .81$. The Role Activities Scale used in this study consisted of 23 items with an alpha coefficient of $\underline{r} = .91$ (Theiss, 1976).

The data obtained from the respondents included demographic characteristics, scores indicating the respondents' general attitudes toward nurse practitioners, and scores indicating the respondents' overall level of acceptance of specific role activities performed by the nurse practitioner. These data permitted a comparison of registered nurses' attitudes toward nurse practitioners between the two states surveyed. A similar comparison was made between the two states with regard to the respondents' level of acceptance of role activities a nurse practitioner could perform. It was also determined whether or not any of the selected demographic characteristics were related to either attitudes toward nurse practitioners or level of acceptance of specific role activities a nurse practitioner could perform.

Discussion of Findings

Of the 180 surveys mailed, 41 (45.6%) were returned from the Texas sample and 33 (36.5%) from the Massachusetts sample. The findings of this study were based on an analysis of these 74 (41.1%) surveys. These findings will be discussed in the following two subsections.

Findings Related to Attitudes Toward Nurse Practitioners

No significant difference ($p \leq .05$) was found between ethnicity and attitudes toward nurse practitioners. The ethnicity of the respondents was predominantly white (95.9%). There were two (2.7%) Hispanic, one (1.4%) Asian, and no (0.0%) black respondents. The relationship between ethnicity and attitude towards nurse practitioners was not investigated in the literature reviewed.

There was no significant difference ($p \leq .05$) between work setting of the respondents and their attitudes toward nurse practitioners. This finding may have been affected by the large number of respondents who reported their work setting as "other." The "other" category was not analyzed in this study. Monnig (1976) supported the finding that nurses in various work settings did not differ significantly in their attitudes toward nurse practitioners. Conversely, Wright (1975) reported that work setting

influenced nurses' attitudes toward nurse practitioners. However, it was not stated whether this finding was statistically significant, or which group was more favorable.

There was no significant difference ($p \leq .05$) between job title of the respondents who reported their employment status as active and their attitudes toward nurse practitioners. On the other hand, Reed and Roghmann (1971) found that nurses who held higher positions in the hospital had the lowest acceptance of an expanded professional role.

No significant difference ($p \leq .05$) was found between regional setting and attitudes toward nurse practitioners. The registered nurses from the two states included in this study did not differ in their attitudes toward nurse practitioners regardless of whether they were from a rural, suburban, or urban region of the state. Monnig (1976) concurred with this finding, reporting that nurses in various size cities did not differ significantly in their attitudes toward nurse practitioners.

Educational status of the respondents was not related to attitudes toward nurse practitioners. Conversely, Monnig (1976) and Reed and Roghmann (1971) reported that nurses' acceptance of expanded roles increased with additional educational preparation.

No difference ($p \leq .05$) was found between state of licensure and attitudes toward nurse practitioners. The

hypothesis that attitudes toward nurse practitioners would be more favorable by registered nurses licensed in a southwestern state than by registered nurses licensed in a northeastern state was not supported by this finding. This finding was in contrast to Sultz, Henry, and Sullivan (1979) who reported that acceptance by other health care providers of the nurse practitioner role was somewhat greater in the South than the Northeast.

Although there was no difference ($p \leq .05$) between sex and attitudes toward nurse practitioners, only one (1.4%) of the respondents was male. The relationship between sex and attitudes toward nurse practitioners was not investigated in the literature reviewed.

Another finding of this study was that there was no difference ($p \leq .05$) between employment status and attitudes toward nurse practitioners. Conversely, Wright (1976) found that nurses' employment status influenced their opinion of the family nurse clinician role. She did not state whether the active or inactive nurses were more favorable toward the role.

There was no difference ($p \leq .05$) between nurse practitioner training and attitudes toward nurse practitioners. The literature reviewed did not investigate the relationship between formal nurse practitioner training and attitudes toward nurse practitioners.

There was a statistically significant positive association ($p=.03$) between the scores on the General Attitude Towards Nurse Practitioners Scale and the scores on the Role Activities Scale. This finding indicates that nurses who were more favorable toward nurse practitioners felt that expanded role activities should be a component of the nurse practitioner role. The relationship between attitudes toward nurse practitioners and role activities was not investigated in the literature reviewed.

The association between attitudes toward nurse practitioners and both the age and number of years of employment as a nurse were not statistically significant ($p\leq.05$). This finding was supported by Theiss (1976). Conversely, Reed and Roghmann (1971) found that as work experience increased, the acceptance of an expanded professional role decreased.

Findings Related to Role Activities

The difference between accepted role activities and ethnicity was significant at $p=.04$, with the Asian nurse scoring the highest. There may be a difference in the level of acceptance of role activities a nurse practitioner could perform between registered nurses of different ethnic groups due to cultural variations. However, this finding is limited to the respondents in the study sample since

there were only three non-whites. The relationship between ethnicity and role activities was not investigated in the literature reviewed.

There was no difference ($p \leq .05$) between the work setting or regional setting of the respondents who reported their employment status as active and acceptance on the Role Activities Scale. The relationship between role activities and both work setting and regional setting was not investigated in the literature reviewed.

No significant difference ($p \leq .05$) was found between job title of the respondents who reported their employment status as active and acceptance on the Role Activities Scale. Conversely, Theiss (1976) found differences among nurses of various job titles on which functions are acceptable for the nurse practitioner.

The difference between accepted role activities and educational level of the respondents was not significant ($p = .06$) in this study. In contrast, both Burkett, Parken-Harris, Kuhn, and Escovitz (1978) and Monnig (1976) reported a significant difference between the educational level of nurses and professional autonomy.

The difference between accepted role activities a nurse practitioner could perform and state of licensure was not significant ($p \leq .05$). The hypothesis that there would be a difference between the acceptance of role activities

a nurse practitioner could perform and the state of licensure of the respondents due to differences in the nurse practice acts between states was not investigated in the literature reviewed.

No significant difference ($p \leq .05$) was found between formal nurse practitioner training and role activities. Only two (4.9%) of the respondents from the Texas sample and two (6.1%) of the respondents from the Massachusetts sample reported having received formal nurse practitioner training, and none (0.0%) of the respondents reported their job title as nurse practitioner. In contrast, Burkett et al. (1978) found that nurses interested in becoming nurse practitioners were more favorable toward expanded role activities than non-interested nurses.

The difference between accepted role activities a nurse practitioner could perform and sex was not significant ($p \leq .05$). Conversely, Heiman and Dempsey (1976) found that female nurses were more favorable toward expanded role activities for nurse practitioners than male nurses.

There was a statistically significant negative association ($p \leq .05$) between the scores on the Role Activities Scale and both the age ($r = -.28$) and number of years of employment ($r = -.30$) of the respondents. Age and length of employment may be negatively associated with acceptance of

increased role activities a nurse practitioner could perform due to changes in nursing practice and education. This finding was supported by Burkett et al. (1978) who reported that younger nurses with more education were significantly more likely to be proponents of greater autonomy for nurse practitioners. Also, Reed and Roghmann (1971) found that as the number of years of employment increased the acceptance of an expanded professional role decreased.

Conclusions

Based upon findings and within limitations of this study, the conclusions of this study are as follows:

1. Ethnicity, age, and educational status of registered nurses in Texas and Massachusetts were not related to attitudes toward nurse practitioners.
2. Work setting, regional setting, and state of licensure of registered nurses in Texas and Massachusetts were not related to attitudes toward nurse practitioners.
3. Attitudes toward nurse practitioners of registered nurses in Texas and Massachusetts were related to their level of acceptance of specific role activities.
4. The number of years of employment as a nurse, employment status, and job title of registered nurses in Texas and Massachusetts were not related to attitudes toward nurse practitioners.

5. Sex and formal nurse practitioner training of registered nurses in the study sample were not related to attitudes toward nurse practitioners.
6. Ethnicity of registered nurses in the study sample was related to accepted role activities.
7. Work setting, regional setting, and state of licensure of registered nurses in Texas and Massachusetts were not related to accepted role activities.
8. Educational status, employment status, and job title of registered nurses in Texas and Massachusetts were not related to accepted role activities.
9. Sex and formal nurse practitioner training of registered nurses in the study sample were not related to accepted role activities.
10. Age and number of years of employment of registered nurses in Texas and Massachusetts were inversely related to accepted role activities.

Implications

Based upon the conclusions of this study, the implications for nursing include:

1. Physical assessment should be taught at the undergraduate level. This may promote more favorable attitudes of registered nurses toward the nurse practitioner role.

2. Increased exposure of older nurses who have been employed many years to the practitioner role should be implemented through the use of continuing education or practice settings.

Recommendations for Further Study

The following recommendations for further study, based on the conclusions, include:

1. Additional studies on the acceptance of role activities of the nurse practitioner by registered nurses of various ethnic backgrounds should be accomplished.
2. Further clarification of the specific role activities should be established.
3. Utilization studies of nurse practitioners should be conducted to determine how nurse practitioners are functioning in practice settings.

APPENDIX A

HUMAN RIGHTS COMMITTEE APPROVAL

TEXAS WOMAN'S UNIVERSITY
HOUSTON CAMPUS
HUMAN RESEARCH REVIEW COMMITTEE
REPORT

STUDENT'S NAME Maureen E. Fay

PROPOSAL TITLE Attitudes Toward and Acceptance of Nurse
Practitioners' Role Functions: A Survey of Registered Nurses
in Texas and Massachusetts.

COMMENTS: _____

DATE: 8-13-88

William J. Davis
~~Disapprove~~ Approve

Dana D. Harty
~~Disapprove~~ Approve

R. P. Bennett
~~Disapprove~~ Approve

Laura S. Smith
~~Disapprove~~ Approve

APPENDIX B

PERMISSION TO USE INSTRUMENT

Medical Center

3495 Bailey Avenue
Buffalo, NY 14215

May 1, 1980

Ms. Maureen E. Fay
1718 Norfolk Street #4
Houston, Texas 77006

Dear Ms. Fay:

Enclosed is the copy of the questionnaire used in my study. Analysis of data in a subsequent study has demonstrated three consistent and discrete domains of attitudes on this questionnaire, i.e. role activities (23 items with an alpha coefficient of .91); role activities for social functions (11 items with an alpha coefficient of .61); and general attitude toward Nurse Practitioners scale (11 items with an alpha coefficient of .81).

Thus, if you were to redevelop the scale using only the best identified items, the scale would contain the following: #5, 6, 9, 11, 15, 18, 19, 22, 23, 25, 26, 27, 28, 29, 31, 34, 35, 39, 41, 43, 47, 49 and 50 of Part B and item #1, 2, 3, 4, 7, 9, 10, 12, 14, 15, and 16 of the attitude section. Please note that item #3, 7, 9, 10, 12 and 15 of the attitude section need to be reversed scored since those items indicate negative attitudes to Nurse Practitioners.

Appropriate credit should be given in your study relative to the development of this instrument. In addition, I would be interested in receiving a copy or an abstract of your completed project indicating your result.

I look forward to hearing from you in the future.

Sincerely,

A handwritten signature in cursive script, reading 'Betty E. Theiss'.

BETTY E. THEISS, R.N.
Chief, Nursing Service

APPENDIX C

QUESTIONNAIRE PACKET

1658 Bonnie Brae, Apt. 3
Houston, Tx. 77006

Dear Nurse:

I am a student at Texas Woman's University in Houston, Texas pursuing a master's degree in community health nursing. For my thesis I am surveying the attitude of registered nurses toward the nurse practitioner role. In the future, the role of the nurse practitioner may become more important in the delivery of primary health care in this country. An important aspect of defining the nurse practitioner role is to determine the scope of practice, and this is strongly influenced by professionals' attitudes.

This study will explore the attitude of registered nurses towards the role of the nurse practitioner and identify specific role functions which the nurse practitioner could perform. It is composed of three parts and will take approximately 10-15 minutes to complete. Part A is a demographic data section. Part B is related to general attitudes toward the nurse practitioner role. Part C consists of specific role activities which could potentially be performed by the nurse practitioner.

Your response to this enclosed questionnaire will be beneficial in determining the nursing community's attitude towards this role and in clarifying an acceptable scope of practice. This study has met with the approval of the Human Research Review Committee at Texas Woman's University. In accordance with Federal guidelines for protection of human subjects, the following statements are given:

(1) I UNDERSTAND THAT MY RETURN OF THIS QUESTIONNAIRE CONSTITUTES MY INFORMED CONSENT TO ACT AS A SUBJECT IN THIS RESEARCH, and
(2) NO MEDICAL SERVICE OR COMPENSATION IS PROVIDED TO SUBJECTS BY THE UNIVERSITY AS A RESULT OF INJURY FROM PARTICIPATION IN RESEARCH.

Participation in this study is voluntary and you may feel free to withdraw at any time. To protect your anonymity, please do not sign or supply a return address. If you decide to participate, please completely fill out the questionnaire as indicated and return in the stamped envelope provided as soon as possible. Thank you very much for your cooperation.

Sincerely,

Maureen E. Fay, R.N.
Graduate Student
Texas Woman's University

P.S.: If possible, please return within 10 days of receipt.

PART A - Demographic Data Section

Please check the most appropriate response.

1. State of licensure
 - a. ☐ Texas
 - b. ☐ Massachusetts
2. Age _____
3. Sex
 - a. ☐ Male
 - b. ☐ Female
4. Ethnicity
 - a. ☐ Black
 - b. ☐ White
 - c. ☐ Hispanic
 - d. ☐ Asian
 - e. ☐ Other
5. Current employment status
 - a. ☐ Active
 - b. ☐ Inactive
6. Number of years employed as a nurse _____
7. Highest level of education attained
 - a. ☐ Diploma graduate
 - b. ☐ Associate degree
 - c. ☐ Baccalaureate degree
 - d. ☐ Postbaccalaureate certificate
 - e. ☐ Master's degree
 - f. ☐ Doctorate degree
 - g. ☐ Other
8. Regional setting
 - a. ☐ Rural
 - b. ☐ Suburban
 - c. ☐ Urban
9. Present work setting
 - a. ☐ Hospital
 - b. ☐ College or university
 - c. ☐ Community
 - d. ☐ Other
10. Present job title
 - a. ☐ Supervisor
 - b. ☐ Educator
 - c. ☐ Administrator
 - d. ☐ Clinical specialist
 - e. ☐ Nurse clinician
 - f. ☐ Nurse practitioner
 - g. ☐ Public health nurse
 - h. ☐ Intensive care nurse
 - i. ☐ Emergency room nurse
 - j. ☐ Staff nurse
 - k. ☐ Researcher
 - l. ☐ Consultant
 - m. ☐ Head nurse
 - n. ☐ Other
11. Have you ever received any formal nurse practitioner training?
 - a. ☐ Yes
 - b. ☐ No

Part B - General Attitude Towards Nurse Practitioners Scale

For the purpose of this study, nurse practitioner is defined as: "A registered nurse who has successfully completed a formal program of study designed to prepare registered nurses to deliver primary health care."

Please respond to each of the following statements as to your opinion of level of agreement. Indicate your feelings on each statement by placing an (X) in the appropriate box.

| | strongly agree | agree | neutral/undecided | disagree | strongly disagree |
|---|----------------|-------|-------------------|----------|-------------------|
| 1. The utilization of the nurse practitioner in an inpatient setting could result in better health care for the patient. | | | | | |
| 2. The success of a nurse practitioner assuming greater responsibility in inpatient care will depend as much upon the physician's acceptance of an expanded role as upon patients' acceptance to practicing medicine and not nursing. | | | | | |
| 3. In reality, the nurse practitioner comes closer to practicing medicine and not nursing. | | | | | |
| 4. The utilization of a nurse practitioner can only lead to enrichment and expansion of both professions. | | | | | |
| 5. The use of nurses in expanded roles in inpatient health care will eventually sacrifice quality of care for quantity (the number of patients cared for). | | | | | |
| 6. It would be advisable for nurses to focus on improving current nursing practices rather than into taking on physician responsibilities in an inpatient setting. | | | | | |
| 7. Most patients' families will accept health care delivered by nurse practitioners. | | | | | |
| 8. If given a choice, many patients would prefer seeing a physician rather than a nurse practitioner for their physical examination since they might be afraid the nurse practitioner would not pick up some abnormalities. | | | | | |
| 9. Many patients would feel more free to talk with a nurse practitioner about certain problems than they would with a physician. | | | | | |
| 10. Many nurse practitioners are currently being utilized more as "physician's assistants" rather than an expanded role of the nurse. | | | | | |
| 11. The utilization of a nurse practitioner on an inpatient unit should improve the quality of nursing care. | | | | | |

PART C - Role Activities Scale

For each statement of specific activity or function, please indicate by a checkmark whether or not you personally think a nurse practitioner could perform this activity.

| Activity | Yes | Yes With Consul- tation (MD) | No |
|--|-----|------------------------------------|----|
| 1. Assess severity of symptoms and estimate significance of history information. | | | |
| 2. Make diagnosis and initiate therapy in selected and mutually agreed disease conditions. | | | |
| 3. Start IV therapy as ordered by physician. | | | |
| 4. Make a comprehensive patient assessment. | | | |
| 5. Examine patient's abdomen, palpation, auscultation. | | | |
| 6. Order and/or take EKG when indicated. | | | |
| 7. Interpret EKG tracing. | | | |
| 8. Perform eye grounds examinations. | | | |
| 9. Order appropriate laboratory test as indicated by patient's condition. | | | |
| 10. Test various body reflexes and note pertinent neurological signs. | | | |
| 11. Take and record vital signs. | | | |
| 12. Order X-rays as indicated by patient's complaint or condition. | | | |
| 13. Make general interpretation of X-ray film. | | | |
| 14. Refer patient to a specialty outpatient clinic. | | | |
| 15. Check availability and working order of emergency equipment. | | | |
| 16. Determine disposition for the patient based on signs, symptoms, examination, and test results. | | | |
| 17. Give oxygen if needed prior to physician seeing the patient. | | | |
| 18. Prescribe medications within mutually agreed protocols. | | | |
| 19. Make appropriate referral for patient to another facility. | | | |
| 20. Modify or adjust medication which is standardized treatment in selected diagnosed conditions. | | | |
| 21. Provide appropriate information to patient and/or family about diagnosis and plan of therapy. | | | |
| 22. Perform continuous health counseling and education. | | | |
| 23. Management of stable chronic illness conditions. | | | |

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