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Patient Perception of the Role of the Nurse Practitioner in Primary Care

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**PATIENT PERCEPTION OF THE ROLE OF THE
NURSE PRACTITIONER IN PRIMARY CARE**

By

Betsy J. Mulder, B.S.N.

A THESIS

**Submitted to
Grand Valley State University
in partial fulfillment of the requirements for the
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ABSTRACT

PATIENT PERCEPTION OF THE ROLE OF THE NURSE PRACTITIONER IN PRIMARY CARE

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As nurse practitioners (NP) provide services to a variety of health care consumers, there remains ambiguity regarding their scope of practice. This descriptive, comparative study asked a convenience sample of patients who have had contact with nurse practitioners (n = 56), and those patients who have had no contact with nurse practitioners (n = 51), to indicate their agreement with the appropriateness of behaviors for the NP role. A questionnaire used by Bambini (1995) was modified for this study with an alpha reliability of .95. Perceptions of behaviors were ranked according to the level of perceived appropriateness. None of the behaviors between either of the groups were perceived to be inappropriate. Behaviors which encompassed the educational, collaborative, and resource components ranked highest, while medical behaviors ranked the lowest. A Mann-Whitney U test revealed significant differences between the groups in seven of the behaviors.

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CHAPTER 1

INTRODUCTION

In response to a national physician shortage in the 1960s, the concept of the nurse practitioner grew out of a need to increase accessibility to health care providers. Advanced education and training were required of these registered nurses, qualifying them to provide primary health care, health promotion/disease prevention services, and to manage acute and chronic health problems. Nurse practitioners became very valuable in inner city and rural areas where physician shortages were felt, along with specialty areas where physician accessibility was limited, such as nursing homes and ambulatory care settings (McGrath, 1990).

Research efforts to examine the role of the nurse practitioner began 35 years ago. Early descriptive studies focused on the purpose and the acceptance of the nurse practitioner. More recent sophisticated studies have centered on patient satisfaction, clinical practices, cost effectiveness, competency, and quality of care provided by nurse practitioners. Over 1,000 studies have been conducted, indicating that nurse practitioners can provide primary care safely, effectively, and at a much lower cost than traditionally demanded by physicians for similar services (Kentucky Coalition of Nurse Practitioners and Nurse Midwives, 1997).

The issues of accessibility to health care, cost containment, and high quality of services have dominated national health care policy discussions for the past three decades.

At the present time, there continues to be a shortage of primary care physicians and an abundance of specialists driving our health care expenditures up, leaving certain populations underserved (Crane, 1995). Considering these findings and those of previous research, the nurse practitioner plays an important dimension in meeting today's health care needs.

It has been estimated that 50% to 90% of the activities performed by primary care physicians can be delegated to nurse practitioners (McGrath, 1990). In 25 states, plus the District of Columbia, nurse practitioners can practice independently without physician collaboration or supervision (Pearson, 1998). However, nurse practitioners do not want to be mistaken for physician extenders. Although sometimes indistinguishable from physicians in some areas of practice, nurse practitioners do not profess to have the same education or training as physicians. Nurse practitioners are educated in the advanced practice of nursing, which incorporates medical skills needed for curing, while maintaining their nursing skills of caring. Nurse practitioners bring with them a holistic and humanistic, patient centered practice that incorporates health maintenance and promotion, patient education, counseling, and advocacy...attributes often sought after by patients, yet missing from the typical medical model of health care services.

Despite mounting evidence of effectiveness as health care providers, nurse practitioners continue to struggle for professional acceptance. A major deterrent is a lack of understanding from health care professionals as well as the general public regarding the role of the nurse practitioner. Additional impediments include variations in education

among nurse practitioners, competitive concerns from physicians, legislative restrictions to practice, reimbursement policies and prescriptive authority controversies. Combinations of these factors can result in the underutilization of nurse practitioner services.

As health care continues to be restructured, there are more opportunities for advanced practice nurses to be a prevalent force in providing accessible, affordable health care. At the present time, there are over 70,000 nurse practitioners working in primary care, 6,000 nurse midwives, and more than 20,000 nurses certified as specialists in anesthesiology and other fields (Freudenheim, 1997). The continued successful merger of the nurse practitioner into the health care arena will largely depend on the understanding and acceptance of their role by physicians, other health care professionals, and patients.

An essential step in promoting utilization of nurse practitioners is research-based assessments of perception and receptivity to change among health care consumers, and the acceptance of the provision of care given by nurse practitioners. Multiple research studies have already focused on the health care professionals' perception of the nurse practitioner (Betancourt, Valmocina, & Grossman, 1996; Stanford, 1987; Theiss, 1976). Numerous studies also document that patients accept nurse practitioners, and that patients are satisfied with their services (Langner & Hutelmyer, 1995; Larrabee, Ferri & Hartig, 1997; Rhee & Dermeyer, 1995). In spite of that, little attention had been paid to the question concerning the basis and boundaries of the nurse practitioner role as seen through the public eye. A gallop poll found that if a patients' primary health care provider was not available, the patient would rather be seen by a registered nurse than a nurse practitioner (The Rural Policy Research Institute Poll, 1994). This finding indicates a need for patient education regarding the nurse practitioner scope of practice.

This study examined the patients' perception of the role of the nurse practitioner in primary care. Understanding of this perception is imperative in order to guide future education of the public. The ultimate goal of that education will be favorable integration and utilization of the nurse practitioner as a primary care provider in the community.

CHAPTER 2

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Conceptual Framework

Imogene M. King's General Systems Framework and her Theory of Goal Attainment (King, 1981) provide a framework for the study of patient perception of the nurse practitioner role. Understanding of King's concepts of the self, perception, interaction, role, and nursing help to explain the importance of evaluating patient perceptions when implementing the role of the nurse practitioner.

According to King (1981), the goal of nursing is to "help individuals maintain their health so they can function in their role" (pp. 3-4). Nurses and patients accomplish this objective by developing an ongoing, interpersonal relationship in which they communicate to identify specific goals, problems or concerns. Together they establish mutual goals and agree upon ways to achieve those goals. Using a General Systems Framework, King (1981) explains the development of this relationship by dividing the metaparadigm of person into these three open, dynamic, interacting systems - a personal system, interpersonal system, and social system.

In the personal system, King (1981) defines the person and one's perceptions. The self is the person's total subjective environment. It is the center of one's experience and significance. Individuals have personal knowledge, needs, goals, and history that will

influence their perceptions and interactions with others. A person's perception is a process by which one organizes, interprets and transforms data from one's experiences. It is through this process of interaction with one's environment that influences how a person think about things, behaves and interacts. An individual's perception of one's own life can influence the way one responds to others and to events in life.

The interpersonal system defines the concepts of interaction and role. This system is composed of the interaction of two or more individuals in a given situation. The interpersonal system reveals how people react, think and feel about each other. The specific values, needs and goals of the patient and nurse influences their interactive process. Interaction progresses to transaction as mutually identified goals are achieved. The role an individual plays is defined by King (1981) as, "a relationship with one or more individuals interacting in a specific situation for a purpose" (p. 98). It is a set of behaviors that are expected when occupying a position in a social system. The nurse and the patient both have a specific role in the system. Understanding of these roles is crucial in order to move toward the process of goal attainment.

The third system is the social system, or the organization in which the nurse works. According to King (1981), an organization is composed of human beings with prescribed roles and positions. The nurse works within the organization of nursing. Nursing practice focuses on the health needs and wants of a social system. The goal of nursing is leading the patient to health promotion, maintenance, and recovery from illness (Chinn & Kramer, 1991).

If the goal of nursing is to assist patients in achieving certain outcomes, one can see through King's (1981) theory that a practitioner must first understand what perception

a patient has of the nurse practitioner role. This understanding will influence the interaction between the nurse and patient and may ultimately affect the ability to achieve goals.

Literature Review

Background. No one has questioned the fact that crescendoing health care costs in the United States, combined with the wide spread epidemic of inadequate access to health care, have created an urgent demand for health care reform in the United States. In addition to being expensive and inaccessible, our present model for health care delivery has proven to be ineffective, maldistributed, and uncoordinated. Of particular concern is the inadequate provision of primary care due to a greater number of specialists and physicians who only want to practice in prime geographic locations.

The possibility of utilizing other health care providers emerged as an option in improving the adequacy of primary care services and in reducing care costs. In the 1960s nurses attempted to deal with this health care crisis by expanding their role. The objective of the first nurse practitioner program developed at the University of Colorado was not just to increase technical functions (cure related), but also to integrate the expansion with the traditional nursing functions (care related). The University of Kansas also had a pioneer program, which involved staffing clinics with this expanded nursing role. These nurses served as primary caregivers to adults with chronic illnesses. This was the first adult nurse practitioner role (Asubonteng, McCleary & Munchus, 1995).

The title, nurse practitioner, falls under an umbrella term of advanced practice nurses with also includes nurse anesthetists, clinical nurse specialists, and nurse-midwives. According to the American Nurses Association (1993), a nurse practitioner is a registered

nurse with advanced academic and clinical experience which enables him or her to diagnose and manage most common and many chronic illnesses. Nurse practitioners focus largely on health maintenance, disease prevention, health promotion, education, and counseling.

Education. The educational preparation required to become a nurse practitioner varies from state to state. The vast majority of nurse practitioner education programs require a master's degree, however there are still a number of certificate programs that do not require a master's degree. Nurse practitioner specialties such as oncology and surgery may require additional clinical training beyond the master's degree. In addition to the classroom education, the American Association of Colleges of Nursing (AACN) requires a minimum of 500 clinical practice hours to complete a master's program, although on an average, 580 hours are completed. Nationwide, 295 universities and colleges offered master's degree or post-master's nurse practitioner programs (AACN, 1998). Despite the current trend to emphasize graduate-level education, the lack of consistency in the education requirements of a nurse practitioner has added confusion in defining the nurse practitioner role.

In response to the diversity by which advanced practice nurses are prepared, both in certification and education, the AACN (1994) published a position statement regarding the certification and regulation of advanced practice nurses. The report presented a plan designed to provide consistency among states and specialties, proposing that all advanced practice nurses hold a graduate degree in nursing, in addition to certification by a national organization.

Not all studies support the idea that a master's degree is necessary preparation for the nurse practitioner role. In 1994, Hupcey devised a study to compare actual and ideal role behaviors of nurse practitioners that were master's and non-master's prepared. A questionnaire was developed including master's level nursing behaviors and technical behaviors that all nurse practitioners should perform. A group of 200 nurse practitioners were asked to rate the importance of those behaviors in an ideal practice and then again in their actual practice. There was no significant difference in perception between the master's prepared and the non-master's prepared nurse practitioners in their actual role behaviors. In terms of the ideal role behaviors, non-master's prepared nurse practitioners rated the majority of the technical and master's level behaviors higher than the master's prepared nurse practitioners.

Practice. Nurse practitioners provide basic health care for infants, children, and adults in a wide range of settings such as health maintenance organizations, hospitals, primary care clinics, schools, community health centers, workplaces, and home. Some nurse practitioners work in clinical specialty areas such as pediatrics, family practice, adult acute care, neonatal care, oncology, obstetrics/gynecology (OB/Gyn), women's health, occupational health, school health, and gerontology care.

In the primary care setting, nurse practitioners perform physical exams, diagnose and treat acute illnesses and injuries, provide immunizations, manage high blood pressure, diabetes and other chronic problems, order and interpret x-rays and other laboratory tests, and counsel patients on disease prevention and health care options. Nurse practitioners can work on their own or in collaboration with a physician. In some states, a collaborative

arrangement with a physician becomes necessary for those cases that necessitate consultation, referral or the prescription of controlled substances.

Nurse practitioners also practice in acute care settings such as the emergency room, medical surgical units and critical care, providing direct patient care as well as following patients through their hospitalization to the post discharge stage. Procedures and roles once reserved for medical residents such as inserting and removing arterial lines and pulmonary artery catheters, are now being performed by nurse practitioners.

Nurse practitioners have been delegated the authority to prescribe medications in every state except for Georgia. Of these, 17 states allow nurse practitioners to write prescriptions independent of physician involvement (AACN, 1998).

Acceptance. There have been varying levels of acceptance amongst different facets of society regarding the nurse practitioner role (Asubonteng et al., 1995). In 1969, the Secretary of the Department of Health, Education and Welfare asked healthcare leaders to examine and report on this new type of practitioner. At that time, nurse practitioners expanded and gained recognition rapidly.

In 1971, at an annual health message, President Nixon recognized the importance nurse practitioners had in increasing the availability of primary care services. The United States Congress also supported nurse practitioners by providing a three-year authorization for the training of certain types of nurse practitioners in the 1971 Nurse Training Act and in the 1971 Comprehensive Health Manpower Act.

Nurse practitioners began offering care to underserved areas and showed promise of addressing many unsolved health care needs. The 1986 Omnibus Budget Reconciliation

Act (OBRA) was responsible for reimbursement under the Medicare program of nurse practitioners in nursing homes (Asubonteng et al., 1995).

Another area of concern was the use of nurse practitioners to deliver basic health care in the rural areas of this country. Under the 1990 Rural Health Act, nurse practitioners are reimbursed to deliver basic health services to rural areas of this country.

The American Medical Association (AMA) has historically met utilization of nurse practitioners with strong resistance. As the number of physicians in this country grew in proportion to the population, and nurse practitioners began to be viewed as a source of competition, physicians lobbied their state legislatures to specifically define the roles and limitations of the nurse practitioner. For example at the 1985 annual meeting, AMA delegates voted to discontinue support for federal funding of the nurse practitioner programs, which had it passed, would have put restrictions on the growth of the nurse practitioner movement (Asubonteng et al., 1995).

Nurse practitioners still cite physician opposition as one of the largest barriers to practice. Using a descriptive design, Betancourt et al. (1996) surveyed a random sample of 250 physicians from a county medical association. Within the sample, 96.2% of the physicians indicated they had heard about nurse practitioners, 32% had discussed employing a nurse practitioner, 84% had observed a nurse practitioner in practice, and 59.6% had worked with a nurse practitioner. Nearly 66.7% of the physicians did not feel there was a general practitioner shortage in the community. More than half of the physicians felt that a nurse practitioner would enhance their health care delivery, while 45.1% felt they would not. Only 28.8% of the physicians were currently employing a nurse practitioner, however the majority (71.2%) said they would be willing to hire a nurse

practitioner. This seeming contradiction and reluctance to employ a nurse practitioner suggests that physicians may still feel threatened by practicing with a nurse practitioner.

Somewhat more positive attitudes towards nurse practitioners were found in an investigation conducted by Louis and Sabo (1994). Surveys were sent to 1,800 physicians, 120 certified nurse practitioners, and the top nurse administrators of all licensed facilities in a rural western state, questioning the need for and desire to hire a nurse practitioner. Only 21.6% of the questionnaires were returned, however a majority of the respondents from all three groups (76%), saw a need for nurse practitioners. If the respondent had experience with a nurse practitioner, he/she were more likely to feel the need for a nurse practitioner than if he/she had never been exposed to a nurse practitioner.

The nursing profession has its own share of dissention as well as advocacy for the expanded role of nurse practitioner. Theiss (1976) developed a study that included exploring the attitudes of professional nurses toward nurse practitioner roles in primary care. The participating institution was the Veterans Administration Hospital in San Diego, California. Thirty-five subjects from various practice environments consented to participate in the study. The age of the subjects, years of experience, and level of education varied. A questionnaire was constructed to measure role perceptions and attitudes toward nurse practitioners. The questionnaire was pretested for validity. It consisted of three scales including demographics, traditional and expanded nursing functions, and attitudes towards the expanded nursing role.

While the nurses in this study indicated an acceptance of the concept of expanded roles for nursing, the data indicated that there were still conflicts related to knowledge of

specific functions that can be carried out by nurse practitioners, especially those decisions regarding interpretation about assessment data and decision making. It also indicated that the subjects believed that nurse practitioners were used more as physicians' assistants than in the expanded nursing role. Some of the nurses believed that the role of the nurse practitioner was a threat to the role of the registered nurse and licensed vocational nurses.

Findings from this study indicated that it is necessary, even for other health care professionals, to be given a clear cut description of the function of a nurse practitioner. In addition, differences between the roles of a nurse practitioner and a physician assistant need to be distinguished.

Cost effectiveness. Numerous studies (Cintron, Bigas, Linares, Aranda, & Hernandez, 1983; McGrath, 1990; Poirier-Elliot, 1984) have documented the cost-effectiveness of utilizing nurse practitioner services. Both direct and indirect savings have been found. In 1975, a study calculated that a nurse practitioner can provide 63% of the services a primary care physician can at 38% of the cost, resulting in an overall savings of 24% (Poirier-Elliot, 1984).

According to McGrath (1990), the cost of educating a nurse practitioner is four to five times less than educating a physician, and can be completed at least four years sooner. Nurse practitioners are able to enter the work force sooner providing valuable, needed health care, in addition to bringing in revenue. Once in the workforce, physicians demand higher salaries, while nurse practitioners receive one-third of the salary of a physician while providing many of the same services as the physician. Nurse practitioners are traditionally reimbursed 85% of what a physician would charge for the same services.

Indirect savings are more difficult to calculate, but are equally as important as direct savings. In terms of productivity, a strict comparison between physicians and nurse practitioners is complex to make since nurse practitioners generally spend 65% more time with patients during office visits than physicians. Not only do nurse practitioners spend more time on physical examinations than physicians, but patients often feel that the examinations are more comprehensive (McGrath, 1990).

Nurse practitioners place emphasis on health education, teaching patients how to manage their own health and disease processes. Indirect savings are seen in decreased morbidity, mortality and fewer hospitalizations due to early detection, comprehensive health promotion, and health prevention approaches.

A controlled study to measure the savings incurred by the reduction of hospital days through the use of nurse practitioners was undertaken at the San Juan Veterans Administration cardiology clinic (Cintron et al., 1983)). Fifteen chronic congestive heart failure patients had their medical costs compared for twelve months before and twelve months after the establishment of a nurse practitioner clinic. On the average the patients visited the clinic 18 times a year for various services including examinations, medications, education, and counseling. Findings showed that while the cost of outpatient services increased slightly due to the ongoing clinic visits, hospitalizations decreased from a total of 930 days at a cost of \$165 per day, or \$153,450 to a total of 135 days at a cost of \$22,275, or a reduction of 76%.

Further indirect savings are realized because of the increased availability to health care services provided by nurse practitioners. This is especially true for low-income individuals, and others living in areas of physician shortages that previously used costly emergency room services as a form of primary care.

Although many nurse practitioners prescribe medications, they are more likely than physicians to suggest non-expensive, non-prescription drug approaches to health management, such as diet, exercise, and stress reduction. These nonpharmacological methods of health management reduce the amount of money spent for prescriptions. Nurse practitioners also tend to incorporate more physical assessment methods in making diagnosis, therefore order less laboratory tests, providing additional cost savings.

Nurse practitioners have been criticized by some employers as not being as “productive” as some providers, because they spend more time with patients and therefore may not bring in as much revenue. Studies support however, that the increased comprehensiveness of services delivered by nurse practitioners have clinical and therefore economic value (Cintron et al., 1983; Ramsay, McKenzie, & Fish, 1982).

Utilization of nurse practitioner services have been proven to be cost effective. Still there remains many barriers such as practice restrictions, delegation, and reimbursement, that limit the number of nurse practitioners and the extent to which they can practice. Using theory based methodology, Nichols (1992) estimates the actual costs to our nation derived from underutilization of nurse practitioner services is nearly \$9 billion dollars. The net effect of underutilization leads to fewer health care services delivered, at higher prices than what is necessary.

Quality of care. A study conducted at two clinics within a Group Health Cooperative of Puget Sound, Washington, compared the quality of physical examinations performed by family nurse practitioners and physicians (Thompson, Basden, & Howell, 1982). The study measured how often the two groups were able to detect six pre-selected abnormalities as well as significant new medical problems. Based on 1,400 exams over a three-month period, the physician and nurse practitioner at clinic A detected new findings at a rate of 14.6 per 100 examinations, while the physician at clinic B only detected 9.7 per 100. In detecting the six pre-selected abnormalities, the nurse practitioner found 18.6 out of 100, while the physician found 9.4 and 8.3 out of 100, almost 50% less than the nurse practitioner found.

The purpose of a study conducted by Ramsay et al. (1982) was to determine if nurse practitioners and physicians provide equivalent health care. In this study, two groups of hypertensive patients were used for comparison. One group was assigned to a nurse practitioner managed hypertensive clinic that initially had been established to evaluate compliance with hypertensive regimens. The second group was assigned to a traditional hypertension clinic, under the care of physicians. Subjects in both groups were similar in age, gender, employment status, initial weight, and blood pressure, despite the fact that the subjects were not randomly assigned. Clinic records were reviewed on four separate occasions over a fifteen month period. The ratio of appointments scheduled compared to appointments kept, weight, and resting blood pressures were recorded for each subject.

No significant difference was found in patient attendance between the nurse practitioner group and the physician group. There was a significant difference in the amount of weight loss between the two groups, with the nurse practitioner group losing

an average of 2.67 kilograms, while the physician group gained an average of 1.2 kilograms. The subjects in the nurse practitioner group were less likely to be referred to a dietician than the subjects in the physician group. In fact, obese patients were more likely to drop out of the physician group than the nurse practitioner group. Blood pressures were only significantly lower in the nurse practitioner group at the 12 month evaluation compared to the physician group. When patients were prescribed antihypertensive medications, one half of them dropped out of the study in both groups. However, when antihypertensive medications were not prescribed, only about half as many patients dropped out of the nurse practitioner group compared to the physician group.

Data from this study indicates that some health outcomes are superior for nurse practitioners, however other outcomes are equal to those of physicians. A possible explanation for the outcome of weight loss may be that nurse practitioners prefer to manage their own patients compared to physicians who tend to refer them to dieticians. Nurse practitioners may also have a greater knowledge of dietetics, giving them an advantage in the area of weight control. Nurse practitioners also schedule more appointments for their patients, providing increased opportunity to monitor their patients as far as weight control and blood pressure. Increased supervision may be one factor in successful health outcomes. In the area of attrition rates, an explanation might be that the subjects expected to get prescriptions from physicians and when their expectations went unmet, subjects left the physician group. The cause for equal numbers of subjects leaving both groups when medication was prescribed is unclear.

Limitations to the study were that there were no mention of other variables which could have affected outcomes, such as exercise, smoking, ethnic background, and

concomitant diseases. The sample size of 40 subjects was small. No mention was made of what type of antihypertensive medications were used. If diuretics were the drugs used, diuresis could have contributed to weight loss. Although it was stated in the study that a p value of $<.05$ indicated a significant difference, no actual p values were given. Since no controls were mentioned in the study, it is difficult to determine whether the care of the nurse practitioner was the cause of the significant differences. Further investigation with better controls is warranted to make that correlation.

Patient satisfaction. Nurse practitioners have investigated patient satisfaction as a means towards accountability for customer services. Patient satisfaction is of great significance since research has shown that satisfied patients are more likely to comply with treatment regimens, therefore should be more likely to have positive outcomes. Numerous studies (Langner & Hutelmyer, 1995; Larrabee et al., 1997; Rhee & Dermyer, 1995) have demonstrated patient satisfaction with the health care services provided by nurse practitioners.

Rhee and Dermyer (1995) used a telephone survey to compare overall satisfaction with emergency department care of patients seen by a nurse practitioner, with that of patients seen by a physician. A five point scale ranging from excellent to poor was used to quantify overall patient satisfaction. Results indicated that there were overall satisfaction with both groups and that there was no significant difference between the care delivered by the two groups.

According to Larrabee et al. (1997), findings in a quantitative descriptive study used to assess patient satisfaction with nurse practitioners in an ambulatory care setting, indicated high satisfaction with the care in all four groups of nurse practitioners studied.

Using a modified version of the Di Tomasso-Willard Patient Satisfaction Questionnaire, 43 patients who met the admission criteria were given the questionnaire and rated satisfaction using a four-point Likert response scale. Previous factor analysis established construct validity of the questionnaire and revealed five factors or subscales with adequate internal consistency and reliability. Questions regarding trust, availability, friendliness, knowledge, training, length of wait, and consistency were all included.

Analysis was conducted using the Statistical Package for the Social Sciences. Analysis of variance tests were performed to determine difference among the items in the four groups tested. An alpha level of less than .01 was used as a level of significance. Overall, patients were satisfied with nurse practitioner care. Results also demonstrated that groups of patients can differ in their satisfaction with care provided by different nurse practitioners. These findings indicated that practitioners need to be aware of patient-provider interaction factors that influence patient satisfaction in order to identify areas of improvement in their practice from a patient's perspective.

Primary care of patients infected with the human immunodeficiency virus (HIV) presents a major challenge for any type of practitioner because of complex treatment regimens and difficulty in patient compliance. Langner and Hutelmyer (1995) conducted a study in which a patient satisfaction survey was given to 49 HIV-positive patients who came to an urban medical teaching clinic for care over a four month period. The survey included a 45-item questionnaire based on seven areas including provider type, waiting time, provider knowledge, appropriateness of scheduled visits, continuity of care, social service support, and patient education. Basic content validity was established, although reliability and other validity methods were not mentioned. Overall, satisfaction with HIV

care was high, with the majority of responses being either satisfied or very satisfied. In the comparison of provider types, 66% of the respondents reported that they were very satisfied with the care provided by the nurse practitioner compared with 42% of the subjects in the physician group. Areas where nurse practitioners scored higher than their physician counterparts were waiting times, provider knowledge about the disease, continuity of care, and patient education.

Health care professional's perception. In 1981, Koehler conducted a study to define the role of the nurse practitioner and the degree of independent judgement in decision making, as viewed by health care providers. A structured interview was held with 40 health care workers including registered nurses, nurse practitioners, physicians, and administrators. Questions were asked relating to the nurse practitioner role and functional skills. The items were field tested prior to the survey for relevance and clarity.

Findings in the study indicated that there were only three out of nine functions that all the groups agreed could be performed by a nurse practitioner, including taking a health history, determining level of wellness, and follow-up care. Nurse practitioners felt that they could be responsible for all the tasks listed including physical exams, diagnostic work-ups, patient management, referrals, evaluate clinical tests, and prescribe therapies. Registered nurses, administrators, and physicians agreed on various combinations of the tasks that they perceived nurse practitioners were able to perform. All four groups also agreed that nurse practitioners appropriately exercise independent judgement in making referrals and in prescribing drug therapy from an approved list.

From these findings, it is apparent that even health care professionals are uncertain as to the actual role and scope of practice of the nurse practitioner. Clear definitions and delineations are needed to educate not only the public, but health professionals as well.

Patient perception. Anderson, Gilliss and Yoder (1996) conducted a survey to create a database on nurse practitioners certified to practice in the state of California. Surveys from 70% (2,741) of the nurse practitioners were returned. Most of the nurse practitioner respondents (65%) in California were providing primary care.

Questions included in the survey pertained to practice environment, and if any social or legal barriers to practice were experienced. Questions were left open ended to encourage respondents to detail their perceived barriers. Data were coded and analyzed using the Crunch 4 Statistical Package. Univariate analytic approaches were used to describe the samples and results.

Forty-three percent of the nurse practitioners responded that they did experience barriers to practice. An expert panel of nurse practitioners established reliability for the four thematic categories that the barriers were placed: 1) lack of ability to prescribe, 2) lack of support by physicians, 3) reimbursement issues, and 4) lack of public awareness of the role of the nurse practitioner. No significant association between practice site and barriers experienced was mentioned. Comments regarding the lack of public awareness included; 1) patients not accustomed to dealing with someone who is not a physician, 2) lack of community awareness of role, 3) lack of public understanding of role, 4) seen as second rate medical services, and 5) prejudice because the provider was not a physician.

Limitations to the study included a lack of non-responder follow-up, creating a response bias. In addition, the expert panel was composed of nurse practitioners, which

may have caused interpretational bias. The study cannot be generalized since it only included nurse practitioners from California.

Suggestions to improve public awareness of the role of the nurse practitioner include informational programs aimed at increasing public awareness. Expanded news media presentations as well as increased exposure of the public to nonphysicians providers would also assist in alleviating barriers to practice.

Betancourt et al. (1996) used a descriptive design with a convenience sample of 75 patients attending a primary care clinic in a large metropolitan medical center, to determine patient knowledge and perception of the nurse practitioner role and function. The response rate was 73% (55) of the patients. The first questionnaire, the Zikmund and Miller (1979) instrument, was used to elicit patients' perceptions, and a second questionnaire was used to elicit knowledge of the nurse practitioner role and functions. No reliability or validity was mentioned regarding these instruments.

Findings on the Zikmund and Miller (1979) instrument indicated that patients had very positive perceptions of the NP role. Patients felt that nurse practitioners could perform one half of the tasks and functions listed including: diagnose and treat minor illnesses and injuries, provide health counseling, obtain health histories, perform physical exams, immunize, and give advise on diet and nutrition. The respondents did not think that nurse practitioners prescribe medications, suture minor wounds, order and interpret laboratory tests and x-rays or perform obstetric and gynecological exams, all things that fall within either the independent or delegated scope of practice of the nurse practitioner.

These findings suggest that there is an increased need for education of patients regarding competencies and abilities of nurse practitioners, especially in the area of drug

prescription. The favorable perceptions of nurse practitioners found in this study may help in gaining support from the public for increasing the supply of nurse practitioners and in passing legislature giving independent prescriptive authority.

Whitmore and Jaffee (1996) compiled a survey utilizing the computer network, to ask open ended questions that described how the general public perceived the role of the nurse practitioner, how they think that role differs from the physicians, and if they were satisfied with their care. The survey was posted in a variety of internet locations during a one week period. Sixteen responses were received by electronic mail.

Most of the respondents had general knowledge of the scope and practice of the nurse practitioner. Typical responses included were that “the nurse practitioner is involved in basic and/or primary care, administers care in consultation with a physician, and diagnoses and prescribes for less serious, more routine conditions” (p. 19). All of the respondents had at one time or another received care from a nurse practitioner. Care was described as “excellent, more thorough, attentive, spent more time, and was a better educator” (p. 19). Only one respondent was unhappy with the services and would have preferred to see a physician. Experiences with care provided by a physician was compared with care provided by a nurse practitioner. Some of the comments mentioned were that patients had a better rapport with the nurse practitioner, costs per visit were less, and patients felt nurse practitioners were as competent as the physician and more available. In two instances, negative comments were given. One mother felt the nurse practitioner did not treat her child appropriately and that the nurse practitioner did not seem confident. These experiences could have been the result of an inexperienced practitioner providing care.

There were several areas of limitations to this study. A larger sample size and more in-depth questioning would be needed to gain a better understanding of patient perceptions and provide added information for professional improvement.

Wiseman and Hill (1994) explored the acceptance of the nurse practitioner role by the rural health care consumer. A nonexperimental, descriptive, correlational study was used. A Kriv Acceptance questionnaire included 12 items developed to measure acceptance by the general public of the nurse practitioner in performing certain functions (divided into traditional and nontraditional nursing tasks). The traditional functions included; taking blood pressure and pulse, taking blood samples, giving shots, recording health histories, making follow up telephone calls after seeing the doctor, and explaining the doctor's diagnosis. The nontraditional tasks included on the questionnaire included; diagnosing minor illnesses, performing complete physical examinations, prescribe medications, performing minor surgery, and determining whether a patient needs a referral or not.

A total of only 23.6% of the questionnaires were returned out of the 300 originally sent. Over 50% of the respondents stated they would allow a nurse practitioner to perform 10 of the tasks listed. Acceptance of the five traditional nursing tasks was 90% to 97%, while the six nontraditional tasks were only 70% to 87%. Further research needs to be done with a larger sample size and a larger community so that results can be generalized to the other populations.

Zikmund and Miller (1979) recognized that although studies have been conducted to assess the effectiveness of nurse practitioners in providing health care services, few have assessed the health care consumers acceptance of the nurse practitioner in providing

those services. They contend that simply making health care providers or facilities accessible will not guarantee their use unless the public attitude regarding perceptions of these provisions are explored. Therefore, Zikmund and Miller studied 205 health care consumers from 10 different rural communities to assess their attitudes towards nurse practitioners. Criteria stated that the communities had to be without a physician or with only one physician, have diverse health care delivery systems, and have socioeconomic and geographic diversity.

Personal interviews were conducted in the patients' homes. The questionnaire was pretested for clarity. A description of a nurse practitioner concept was read prior to the administration of the questionnaire. Fifteen attitudinal statements regarding nurse practitioner functions were divided into three categories. The category of role competency included ability to care for minor illnesses or injuries, give medical opinions, explain illnesses, and perceived availability and convenience. The interpersonal relations category included time spent with patients, counseling, and personal interest. The performance category included ability to diagnose and treat illnesses, compared to a physician.

A Likert scale ranging from strongly agree to strongly disagree was used to reflect the extent with which patients perceived a nurse practitioner could perform these functions. Internal consistency of each factor was calculated using Cronbach alpha reliabilities and ranged from .65 to .79.

Findings indicated that while patients perceive that nurses would be qualified to care for minor health problems and that their medical opinion would be respected, there was uncertainty as to whether the nurse practitioner could correctly diagnose illnesses. Respondents also strongly indicated that they felt nurse practitioners should provide health

counseling, but only moderately agreed that a nurse practitioner should spend more time with them, and that they could save on medical bills by using a nurse practitioner. There was general uncertainty regarding the ability of a nurse practitioner to diagnose and treat illnesses compared to a physician. Findings also suggested that education regarding the roles of the nurse practitioner and their scope of practice was necessary to assure acceptance by the health care consumer, especially in areas where nurse practitioners do not practice presently.

A popular debate in the state of Missouri is the regulation of the advanced practice nursing role. One of the goals of a study conducted by Armer (1997) was to describe Missouri residents' perception and acceptance of the advanced practice nurse role.

Interviews were conducted by phone with approximately 891 randomly selected adults. Age and rural-versus-urban residencies stratified the sample. Demographic findings were recorded. Four dependent variables (conduct health assessments and examinations, refer to a physician when the condition warranted, provide follow-up care and treatment, and perform prenatal and infant care) of nurse practitioner roles were measured against the demographic independent variables to see if there was any significance in predicting the ability of a nurse practitioner to carry out those roles.

County-wide (85%) support for the nurse practitioner role was found in performing "well care" functions, such as health assessments and physical examinations. Fifty-five percent of the respondents agreed that nurse practitioners were qualified to determine if a physician needed to be contacted, 78% perceived that a nurse practitioner was capable of providing follow-up care and treatment, and 77% supported a nurse practitioner in performing prenatal and infant care.

Chi Square procedures were used to compare demographics to percentages of responses from questions regarding the four nurse practitioner roles. Multiple regression analyses were used to determine if the demographic variables had a significant relationship with the perception of the role of the nurse practitioner. A significance level of 0.01 was used.

Support of the nurse practitioner role was found significant across all demographic variables. Higher education alone related to an even higher approval of the health history/physical examination role of the nurse practitioner ($p = .005$). Yet, when the variables were looked at all together using a logistic regression, education did not help predict a positive response, while being male ($p = .002$), above poverty ($p = .003$), and being younger ($p = .001$), were more likely to predict a positive response. Armer failed to report the odds ratio associated with these results however.

A higher proportion of positive responses were found among the middle age group in the perception that a nurse practitioner can deliver routine prenatal and well baby care ($p = .008$). Gender was found to be significant in having a positive response when evaluating follow-up care, with males having a slightly more positive response than females ($p = .020$). Patients who did not have insurance gave a more positive response supporting the perception that a nurse practitioner could decide when a patient needed to see a doctor ($p = .008$).

The overall high support for three out of the four nurse practitioner roles, and relatively few differences among groups when the variables of age, gender, residence, education, insurance and income were considered is a very positive finding in terms of practice and policy making regarding the practice of nurse practitioners. These findings are

consistent with other studies in which the data support a high level of acceptance for the nurse practitioner role.

Findings in this study indicate that further research and teaching are needed to educate the public concerning the competencies of the nurse practitioner in delivering primary care, especially in the area of the triage role. This will become even more important as nurse practitioners participate in managed care (Armer, 1997).

Debate over the desirability of nurse extending their role has raised a number of issues. In the United States, the nurse practitioner role was developed to provide access to health care to those patients and areas that were underserved (Drury, Greenfield, Stilwell, & Hull, 1988). In the United Kingdom, where accessibility to general practitioners is much more available, extending the role of the nurse may not be viewed as necessary.

Drury et al. (1988) conducted a study to explore the acceptance and perception of patients regarding the nurse practitioner role in the United Kingdom. A questionnaire was sent to 140 randomly selected patients who were over the age of 16. Of those 140 patients, 126 (90%) returned their completed questionnaires. Sixty-one of the patients had already been seen by a nurse practitioner, 59 had never been seen by a nurse practitioner, and 6 patients did not respond to this question. Open-ended questions were asked regarding patients' perception of the nurse practitioner role and the differences between a nurse practitioner and a physician.

Seventy-three percent (92) of the patients could describe one or more tasks that they thought the nurse practitioner would carry out. Overall, 10 different tasks were listed. Over half of those patients said that the nurse practitioner helped the physician, and a quarter of them said that nurse practitioners could treat minor illnesses. The next most

recent response was that a nurse practitioner could carry out practical tasks and give advise, however only 11% of the patients felt that the nurse practitioners role included preventative medicine. Ten percent of the patients felt that the nurse practitioner provided the same services as the physician. Patients who had been seen by a nurse practitioner had different perceptions than patients who had not been seen by the practitioner. There were no stereotyped preconceptions about whether nurse practitioners were female or male, however 43% of the patients said that gender of the nurse practitioner would make a difference to the type of problem they consulted the practitioner for. Woman were nearly three times more likely than men to say that there were problems for which they would prefer to see a nurse practitioner for (referring to a female nurse practitioner).

Areas where patients perceived that nurse practitioners differed from physicians were explored in more detail (Drury et al., 1988). Patients who had already been seen by a nurse practitioner felt that nurse practitioners and physicians differed more than those patients who had not been seen by a nurse practitioner. A total of eight ways were identified. The most frequently identified distinctions were that physicians were better qualified, could prescribe drugs, and could treat serious illnesses.

Less than half of the patients surveyed (41%) felt the concept of the nurse practitioner was a good idea, mainly for purposes of organization and efficiency. Also listed why a patient would see a nurse practitioner were reasons including the time the nurse practitioner spent with the patient, her ability to listen, and make people feel at ease. Forty percent of the patients were opposed to a nurse practitioner and named lack of ability to clinically diagnose as the reason.

Drury et al. (1988) did not describe the characteristics of the practice from which these patients were sampled. Also the fact that only one nurse practitioner services was being evaluated makes it unable to generalize the results. Larger sample sizes need to be utilized in order to make this study clinically significant. Responses in this study also showed some paradoxical findings, such as patients understood that the nurse practitioner in the study could not prescribe medication, yet on another question, they stated that they saw no difference between the practice of the physician and that of the nurse practitioner. These responses bring into question the clarity, validity, and reliability of the questionnaire. Findings do indicate that the nurse practitioner role is more acceptable for patients with problems that are not serious and required more counseling and reassurance.

Breslau (1977) also completed a study in the United Kingdom, in which patient perceptions and evaluations of the nurse practitioner role were explored in a random sample of families who attended a pediatric office comprised of a physician and a nurse practitioner team. Prior to coming to the practice, the nurse practitioner completed a four month course of training in pediatrics. The physician and nurse practitioner were each to focus on different aspects of care.

Approximately one and a half years after the nurse practitioner joined the team, a survey was mailed to a random, representative sample of the patients in the practice. Eighty-six questionnaires were completed. Questions included prestructured, closed ended questions concerning patient perception of the nurse practitioner role and their experience with the nurse practitioner.

Medical problems were rarely viewed as issues a nurse practitioner would handle, while behavioral problems were seen as more appropriate for the nurse practitioner

(Breslau, 1977). Thirty-five percent of the respondents felt that the nurse practitioner was more helpful than the physician when it came to time given to discuss non-medical problems. Thirty-three percent of the respondents felt that they received better care from the physician-nurse practitioner team, four respondents thought it was worse, and the rest felt it was the same.

With regard to problems that needed special consultation, the nurse practitioner was consulted far less than the physician. Seventy percent of the patients chose to receive care from the physician alone. Only 17% would be willing to pay an additional fee for the services of a nurse practitioner at a regular office visit.

The most discriminating factor found in why patients would grant the nurse practitioner independent status were those patients who had more contact with the nurse practitioner in her team role. Family characteristics did not emerge as a discriminating variable. The nurse practitioner was not recognized as having primary competence in any area. Through interviews with the patients, the nurse practitioner was seen as an extension of the physician.

Many of the results of this study can be explained by the way that the study was originally designed. The physician was established at the practice for four years prior to the start of the nurse practitioner, and was familiar to the patients. The concept of the nurse practitioner was new. The duties of the physician were established to deal with the medical aspects of the care, while the nurse practitioner was to spend her time on education and counseling matters. Also, the education of a nurse practitioner in the 1970s was different than that of today.

A more recent study with a larger sample size would be helpful in evaluating the physician-nurse practitioner team concept. In addition, the questionnaire needs to be evaluated for validity and reliability. Evaluation of the nurse practitioner education preparedness would need to be evaluated to determine if the United Kingdom has the same standards and expectations for nurse practitioners as the United States.

In 1982, a three year project in the United Kingdom was designed to evaluate patient attitudes to the role of the nurse practitioner in general practice. Stilwell (1988) reported that the nurse participating in the study took special courses and training to meet standards of practice equivalent to that of the American nurse practitioner. The NP worked with two male and one female physician in an inner city practice servicing approximately 4,728 patients. The patients were briefly informed by written notification of the qualifications of the nurse practitioner and were given the choice whether they wanted to see the nurse practitioner or the physician.

The role of the nurse practitioner in this study was similar to the role of the American nurse practitioner. Practice guidelines were established prior to the start of practice. Not only was the presenting problem assessed, but long term health education and preventative care were offered. The nurse practitioner treated patients per previously agreed upon protocols. The nurse practitioner however, was not allowed to write or dispense prescriptions.

During the time period of the study, 858 patients consulted the nurse practitioner. Of those patients, a randomly selected sample of 140 patients was sent postal questionnaires which sought open ended statements and attitudes regarding their perception of the nurse practitioner. Included in the questionnaire was demographic

information, reason for consultation, and outcome of care. Ninety two of the patients were able to explain what the nurse practitioner did, detailing different aspects of the nurse practitioner's role. The most commonly stated perception was that the nurse practitioner helped the physician and saved the physician time. In order of decreasing perception, the following were also stated; treats minor illnesses, performs practical tasks, gives advice, practices preventative medicine, treats specific groups, does the same as the doctor, performs non-medical tasks, counsels, and prescribes medicine.

Fifty-eight percent felt there was a difference between the physician and the nurse practitioner, and 44% could say what the difference was. The most common differences stated in declining frequency were; qualifications, ability to prescribe, type of complaints handled, authority, ability to diagnose, personal qualities, knowledge, and ability to refer for consultation.

Although this survey indicates that most of the patients in this study have definite perceptions regarding the role of the nurse practitioner, the most frequent perception is that the nurse practitioner saves the physician time and relieves him/her of trivial matters. The failure of the nurse practitioner to be perceived as an autonomous health care provider could be explained by the dominant roles that the physicians had in this particular practice. During the course of the study, there was conflict and tension between the male physicians and the female nurse practitioner, especially regarding her ability to make decisions. It could also be possible that even though the nurse practitioner practiced in a setting identical to the physician, the male physician was still perceived by many to be the leader. The nurses, even the nurse practitioners, which are roles commonly occupied by females, are expected to acquiesce to doctor's decisions.

According to Hupcey (1993), the support of the physician for the role of the nurse practitioner has been shown to be one of the most important factors in whether patients perceive and accept the nurse practitioner as a competent health care provider or not. In light of this finding, it is not surprising that although patients in this study accepted the nurse practitioner, they did not perceive her as an autonomous health care provider.

Summary

Studies have demonstrated the acceptance, effectiveness, availability, and cost saving benefits of nurse practitioner utilization. Following the review of literature however, one can see that there has been a lack of knowledge and confusion regarding the role of the nurse practitioner in primary care. Health care providers as well as the general public remain uncertain about the scope of practice

More recent studies at least show advancement in public awareness regarding nurse practitioners. The conceptualized area of interaction/transaction between the nurse practitioner and the patient as discussed in King's (1981) Theory of Goal Attainment, must be studied for better understanding of the role of the nurse practitioner.

Discrepancies in the patients' conceptualization of the nurse practitioner role must be identified in order to improve congruence of role expectations and performance. Education of the public regarding the scope of practice of the nurse practitioner should be part of the role of a nurse practitioner. Understanding and receptivity of health care consumers to alternative health care providers such as nurse practitioners is essential in planning health care reforms that will meet future health care needs.

The purpose of this study was to examine patients' perception of the role of the nurse practitioner in primary care. The two research questions examined were: 1) How

appropriate do patients perceive certain behaviors are for the role of the nurse practitioner in primary care? and 2) Do patients who have been previously treated by a nurse practitioner perceive the behaviors of that role differently than patients who have not been treated by a nurse practitioner?

CHAPTER 3

METHODOLOGY

Design

The design used in this study of patient perception of the role of the nurse practitioner in primary care was nonexperimental and descriptive. Using a questionnaire listing nurse practitioner behaviors, patients were asked to rank their perception of the appropriateness of those behaviors in the role of the nurse practitioner. Additionally, perceptions of those patients who had been cared for by a nurse practitioner were compared with perceptions of patients who had not been cared for by a nurse practitioner before, as to whether the behavior was appropriate for the role or not.

Since no previous studies were found using these same variables, this study was not modeled after any earlier studies. Additional factors that may have influenced the perceptions of the role included patient educational level, ethnicity, age, gender, and income. These factors were assessed on the demographic section of the questionnaire, evaluated, and their possible influence described.

Threats to internal validity were minimized by using the same questionnaire and cover letter for all the groups surveyed. Also, since different personalities of various nurse practitioners could influence patients' perception of their roles, four diverse areas of practice were included in the study. Self-selection may however have added to response bias, as those more interested in this subject would be more apt to agree to answer the

questionnaire. Transitory personal factors such as pain and illness may have added another source of error. In addition, even though the questionnaire was altered to accommodate a sixth grade reading level, some of the concepts were difficult to simplify and therefore may have been difficult for the respondent to understand.

Sample

The four different offices included in the study were pediatrics, obstetrics and gynecology, internal medicine, and family practice. The method of nonprobability, convenience sampling was used to gather subjects. Criteria for inclusion in the sample included patients who had either some direct experience with nurse practitioners, or at least some knowledge of nurse practitioners through word of mouth or media. The subjects were required to be at least 18 years of age or older, or parents of children under the age of 18. It was necessary for the participants to be able to read and understand English.

Self-report questionnaires were given to 107 subjects who fit the criteria and volunteered to participate. The original goal of the sample size was to have at least 26 subjects from each office surveyed, half of which had been cared for by a nurse practitioner and half who had not been cared for by a nurse practitioner. In actuality, 29 subjects from pediatrics, 28 from internal medicine, 25 from obstetrics/gynecology, and 25 from the family practice office participated.

Instrument

The tool of nurse practitioner behaviors was originally developed by Hupcey (1994) to compare actual and ideal role behaviors of master's prepared nurse practitioners with non-master's prepared nurse practitioners. A panel of 10 master's prepared nurse

practitioners established content validity. The split-half method was used to establish reliability of the tool. A reliability coefficient of 0.96 was calculated using the Spearman-Brown formula.

The tool was then modified by Bambini (1995) to be used in a study on *“Nurse/Physician Perception of the Role of the Nurse Practitioner”*. The tool consisted of 37 behaviors including tasks, collaboration, counseling, education, research, protocol development, supervision and evaluation, all of which were ranked individually for their appropriateness in the role. Content validity was established for the tool by a panel of experts. Reliability was tested with the test-retest method. There was no significant difference found between the answers on the first set of tests compared to the answers on the second set of tests (p ranged from .32-1.0). An alpha of .97 using Cronbach’s alpha demonstrated internal consistency (p.16).

The instrument that was used in this study is a modification of Bambinis’ tool (1995). This tool was chosen because it includes behaviors specific to the role of the nurse practitioner. The tool which was in the form of a questionnaire, was adjusted to accommodate a sixth grade reading level. Any behaviors that needed to be altered so they were appropriate for the role of the nurse practitioner in primary care, were restated as a result of an expert panel evaluating the questionnaire for content validity. Items were deleted if they were not necessary for basic patient knowledge.

A total of 28 behaviors were included in the final questionnaire. Reliability of the tool was tested with a pilot test-retest given one week apart, to six subjects who did not receive care from any of the data collection sites. A correlation coefficient was calculated

using the Spearman rho method and found to have a $r = .85$ ($p = .033$). Internal consistency calculated on the actual study using Cronbach's alpha, had an $\alpha = .95$. Patients were asked to rate the appropriateness of each behavior on a four point Likert scale ranging from strongly disagree to strongly agree (see Appendix H).

Procedure

Permission was received from both Hupcey (1994) and Bambini (1995) to modify the tool (see Appendix A and B). Permission was also received from each of the four offices in which the questionnaire was administered using a form letter developed by the researcher (see Appendix C). To protect the confidentiality of the participants, the signed permission letters were not included for publication. Approval was also granted from the Grand Valley State University Human Subjects Review Committee to conduct the study (see Appendix D).

Each office participating in the study had one receptionist who worked on a full time basis. This is the receptionist (non-bias) who was trained to administer the questionnaire. An inservice was conducted individually with each receptionist during which time verbal and written instructions in the purpose and procedure of the study was reviewed (see Appendix E). The receptionist was asked to read the questionnaire and any questions regarding the content were answered by the researcher at that time. A time frame of three weeks was allotted for the collection of all the questionnaires. Once the receptionist verbalized comfort with the procedure, data collection at the sight began.

As patients came to the receptionists' desk to register, the receptionist assessed the admission criteria, read the purpose of the study to the patient and asked the patient if they

were willing to participate in the study. The receptionists were instructed to tell patients that the questionnaire would take 10 to 15 minutes to complete, and that if the patient was called into an exam room before completion of the questionnaire it could be finished in the exam room, or after the appointment was over (see Appendix F). When the participants were done with the questionnaire, they placed it into a box with a slit in it to maintain anonymity.

Included on the first page of the questionnaire was a cover letter to the participants defining the study, and explaining the selection process. Cooperation in the study indicated participants voluntary consent to participate since no names were to be written on the questionnaire. Participants were given the names and telephone numbers of persons to contact with any questions regarding the study, and instructed that they may withdraw their consent or discontinue filling out the questionnaire at any time without consequence (see Appendix G).

There were no risk identified for the patients involved in this study. No direct contact between the investigator and the patients was necessary to fill out the questionnaire. The fact that no names were recorded on the questionnaire assured anonymity of the respondents.

The receptionist was instructed that the finished questionnaires would be picked up by the researcher once a week and at that time the researcher would be responsible for determining how many questionnaires had been completed in each category and how many more need to be completed. The original time frame of three weeks for data collection was not met because of busy office schedules and difficulty getting adequate numbers in the

group who had not been seen by a nurse practitioner. In total, six weeks were required before all the questionnaires were completed.

The receptionist had the researchers' pager number so she could reach the researcher at any time if needed. A token of appreciation was given to all the receptionists on completion of the project for their efforts. It was also explained to the receptionist that findings from this study may be useful to their business in the future as they continue to offer nurse practitioner services to patients. Hopefully, these incentives instilled some feelings of ownership in the project for the receptionists.

CHAPTER 4

DATA ANALYSIS

Technique

The purpose of this study was to examine patients' perception of the role of the nurse practitioner in primary care. The two research questions established for the study were: 1) How appropriate do patients perceive certain behaviors are for the role of the nurse practitioner in primary care? and 2) Do patients who have been previously treated by a nurse practitioner perceive the behaviors of that role differently than patients who have not been treated by a nurse practitioner? Data were analyzed using the Statistical Package for Social Sciences. A significance level of $p < .05$ was set for all statistical procedures.

Descriptive statistics were used to characterize the subjects in this study. Prior to aggregating the data, the demographic characteristics was evaluated for group differences using Chi Square analyses.

Patients ranked their perception of the appropriateness of certain behaviors for the role of the nurse practitioner. Perceptions of appropriate behaviors were measured on an ordinal scale ranging from strongly disagree (1) to strongly agree (4). A higher rank indicated a higher perceived appropriateness. The initial order of perceived appropriateness was established using median values, with the order finalized by using the statistical mean. Perceived order of appropriateness was evaluated and then compared for two groups: those who had received health care services from a nurse practitioner and

those who had not received health care services from a nurse practitioner. In order to determine if there were significant differences in perceived appropriateness of nurse practitioner behaviors, a Mann-Whitney U analysis was performed.

Characteristics of the Subjects

A total of 107 subjects from four different office sites participated in the study. Prior to data aggregation, the demographic characteristics, including age, race, education, gender, and income were evaluated between each of the different sites.

Data aggregation. Overall, the participants in this study were Caucasian (95.3%) and female (75.7%). The majority of the participants had at least a high school education (43.0%), with 45.8% having attended college and 11.2% having post college education. Twenty (19.4%) participants reported annual incomes less than \$20,999, while 62 (60.2%) participants reported incomes between \$21,000 and \$60,999. Twenty-one (20.4%) participants had incomes greater than \$61,000.

The age range of the participants varied from 18 to greater than 60 years. More than 60% of the participants were between the ages of 18 to 40 years, 28 were between the ages of 41 to 60, and 14 were greater than 60 years old. The distribution of ages by office sites are presented in Table 1.

Chi Square analyses were performed to determine the presence of statistical differences in the demographic characteristics of the participants. There were no significant differences in the educational level, income, or ethnicity between the office sites. While the majority of the participants were female, there was a statistically significant difference by office ($X^2 = 23.51$, $df = 3$, $p = .000$). Only 10% of the participants

from the pediatric office were male, while 36% were from the internal medicine office, and 52% were from the family practice office. All participants from the OB/Gyn office were female.

Table 1

Age Distribution by Office

Age	Pediatrics		Internal Medicine		OB/Gyn		Family Practice	
	n	(%)	n	(%)	n	(%)	n	(%)
18-30	8	(34.8)	2	(8.7)	10	(43.5)	3	(13.0)
31-40	16	(39.0)	7	(17.1)	6	(14.6)	12	(29.3)
41-50	4	(25.0)	4	(25.0)	6	(37.5)	2	(12.5)
51-60	0	(00.0)	4	(33.3)	3	(25.0)	5	(41.7)
>60	0	(00.0)	11	(78.6)	0	(00.0)	3	(21.4)

Note. OB/Gyn = Obstetrics/Gynecology.

Due to the variation in the age distribution across the office sites, the age categories were collapsed to facilitate statistical analysis. The age categories were collapsed into two classifications: those between the ages of 18 and 40 and those greater than 41 years. Using a Chi Square procedure, a significance difference was noted by office ($X^2 = 16.98$, $df = 3$, and $p = .001$). The internal medicine group had the highest number of participants who were older than 41 years (19), while the pediatric office had the greater number of participants under the age of 40 (24).

Characteristics by study group. Following data aggregation, the participants were divided into two groups: those who have been seen by a nurse practitioner (Group #1) and

those who have not been seen by a nurse practitioner (Group #2). The demographic characteristics were then evaluated by group membership.

In the group who had been seen by a nurse practitioner, there were a total of 56 participants, including 10 males and 46 females. The majority of participants were in the lower age groups with 78.2% between the ages of 18 to 40 years. There were only 5.5% of the participants in the 41-51 age group, 7.3% in the 51-60 age group, and 9.1% who were older than 60 years of age. Only 1 respondent had a grade school education, while 21 had high school education, 30 participants had college education, and 4 people had graduate or post graduate level education. Sixteen percent of the participants had incomes below \$21,000. In contrast, 67.9% of the subjects had incomes between \$21,000 and \$60,999, while 16.0% had incomes greater than \$61,000.

In the group of 51 participants who had not been seen by a nurse practitioner there were 16 males and 35 females. In this group, 41.2% of the participants were less than 41 years of age, while 58.8% were older than 41 years. Among the participants, 47.1% had at least high school education, while 52.9% had a minimum of college education. More than 50% of the participants reported an income between \$21,000 and \$60,999, with 25.6% in the \$61,000 or greater, income bracket. Twenty participants (23.4%) reported an income less than \$20,999. A summary of Group 1 and 2 characteristics is presented in Table 2.

Statistical analyses were performed to determine whether there were any significant differences between the demographic characteristics of the two groups. Using a Chi Square analysis, the only difference identified was among the ages of the participants ($X^2 = 15.15$, $df = 1$, $p = .0001$). The participants in the group who had not been seen by a nurse practitioner were significantly older.

Table 2

Characteristics of the Participants by Group

Characteristic	Group 1		Group 2	
	n	(%)	n	(%)
<u>Age</u>				
18-30	11	(20.0)	12	(23.5)
31-40	32	(58.2)	9	(17.6)
41-50	3	(5.5)	13	(25.5)
51-60	4	(7.3)	8	(15.7)
>60	5	(9.1)	9	(17.6)
<u>Education</u>				
Grade School	1	(1.8)	2	(3.9)
High School	21	(37.5)	22	(43.1)
College	30	(53.6)	19	(37.3)
Graduate	2	(3.6)	6	(11.8)
Post-graduate	2	(3.6)	2	(3.9)
<u>Income</u>				
< \$10,000	3	(5.4)	3	(6.4)
\$10,000-20,999	6	(10.7)	8	(17.0)
\$21,000-40,999	23	(41.1)	14	(29.8)
\$41,000-60,999	15	(26.8)	10	(21.3)
\$61,000-80,999	4	(7.1)	6	(12.8)
> \$81,000	5	(8.9)	6	(12.8)

Data Analyses

The first research question posed in this study was; How appropriate do patients perceive certain behaviors are for the role of the nurse practitioner in primary care?

The two groups ranked each behavior according to whether they strongly disagreed (1), disagreed (2), agreed (3), or strongly agreed (4), with the appropriateness for the role of a nurse practitioner.

Evaluating responses from the group who had been treated by the nurse practitioner, 23 of the 28 behaviors received rankings which indicated that the group agreed (>3.00) that the behaviors were appropriate for the role. The most appropriate behaviors for a nurse practitioner identified by this group involved education, research, resource person, counseling, and collaborative components. Five of the 28 behaviors were below the mean rank of 3.00, indicating less agreement with their appropriateness for the role. These behaviors included tasks more traditionally found within the medical scope of practice (see Appendix I).

From the group who had not been seen by a nurse practitioner, 17 of the behaviors were perceived as appropriate (>3.00). Similarly, these participants identified tasks that were related to education, research, resource person, and collaboration as the most appropriate behaviors for the role. Eleven behaviors were ranked lower than 3.00, or perceived to be less appropriate (see Appendix J).

The top 10 behaviors, although ranked differently, were the same for both groups with the exception of one behavior (see Table 3 and 4). In each group, one behavior that was perceived as appropriate, was not reflected in the ten most appropriate behaviors of the other group. "Providing counseling about health issues" was perceived as more appropriate to the role (mean rank = 3.36) by those who had been seen by a nurse practitioner, compared to Group 2 who perceived this behavior less appropriate (mean rank = 3.06). Conversely, Group 2 perceived "Developing a standard plan of care" as one of the top ten most appropriate behaviors in their ranking (mean rank = 3.14), while Group 1 felt it was not as appropriate in their ranking (mean rank = 3.23).

Table 3

Rank Order of 10 Most Appropriate Behaviors Identified by Group 1

Behavior	Percent of Respondents				Mean Rank
	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	
1. Explain role of the NP			42.9%	57.1%	3.57
2. Ask a patient about past health			42.9%	57.1%	3.57
3. Teach patients how to maintain health			46.4%	53.6%	3.54
4. Educate community in health care			50.0%	50.0%	3.50
5. Research to improve nursing practice		1.8%	53.6%	44.6%	3.43
6. Resource person for health care		1.8%	58.9%	39.3%	3.38
7. Provide community health care			62.5%	37.5%	3.38
8. Inform community about health care		1.8%	60.7%	37.5%	3.36
9. Provide counseling about health		1.8%	60.7%	37.5%	3.36
10. Collaborate with MD complex cases		3.6%	60.7%	35.7%	3.22

Table 4

Rank Order of 10 Most Appropriate Behaviors Identified by Group 2

Behavior	Percent of Respondents				Mean Rank
	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	
1. Ask a patient about past health			51.0%	49.0%	3.49
2. Research to improve nursing practice		3.9%	70.6%	25.5%	3.31
3. Explain role of the NP			68.6%	31.4%	3.31
4. Teach patients how to maintain health		2.0%	66.7%	31.4%	3.29
5. Educate community in health care		3.9%	68.6%	27.5%	3.24
6. Collaborate w/MD in complex cases		7.8%	62.7%	29.4%	3.22
7. Resource person for health care		3.9%	70.6%	25.5%	3.22
8. Inform community about health care		5.9%	66.7%	27.5%	3.22
9. Provide community health care		3.9%	72.5%	23.5%	3.20
10. Develop standard plans of care		7.8%	70.6%	21.6%	3.14

The five behaviors which received the lowest ranking of appropriateness for the role of the nurse practitioner were also similar for both groups (see Table 5 and 6). One exception was the behavior "Deciding if what is being done for the patient is making them better" which was given the 5th lowest ranking (mean rank = 2.98) in the Group 1, while Group 2 felt the behavior was more appropriate (mean rank = 3.06). The group that had

not been seen by a nurse practitioner ranked the behavior "Develop a plan of care to take care of the patient" as the 4th least appropriate behavior (mean rank = 2.84), while the other group ranked it more appropriate (3.09).

The behavior of "help teach medical students" was perceived as 3rd lowest by both groups, while the other 3 remaining behaviors were similar for both groups, although at slightly different rankings. Several of the behaviors which received the lowest rankings appear to be traditionally thought of as more physician appropriate.

Table 5

Rank Order of 5 Least Appropriate Behaviors Identified by Group 1

Behavior	Percent of Respondents				Mean Rank
	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	
1. Change care if there is no improvement	3.6%	25.5%	52.7%	18.2%	2.85
2. Prescribe and/or change medication	1.8%	33.9%	41.1%	23.2%	2.86
3. Teach medical students		29.1%	54.5%	16.4%	2.87
4. Perform certain procedures	1.8%	18.2%	60.0%	20.0%	2.98
5. Decide if the patient is improving	1.8%	14.3%	67.9%	16.1%	2.98

Table 6

Rank Order of 5 Least Appropriate Behaviors Identified by Group 2

Behavior	Percent of Respondents				Mean Rank
	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	
1. Prescribe and/or change medication	11.8%	31.4%	52.9%	3.9%	2.49
2. Change care if there is no improvement	4.0%	28.0%	58.0%	10.0%	2.74
3. Teach medical students	3.9%	27.5%	56.9%	11.8%	2.76
4. Develop a plan of care	3.9%	17.6%	68.6%	9.8%	2.84
5. Perform certain procedures	3.9%	21.6%	60.8%	13.7%	2.84

The second research question asks if patients who have been treated by a nurse practitioner perceive the behavior of that role differently than patients who have not been treated by a nurse practitioner. A Mann-Whitney U procedure was used to examine the differences in mean ranks between the two groups. Perceived appropriateness were found to be statistically significant ($p < 0.05$), in 25% (7) of the total 28 behaviors (see Table 7).

Since age was the only significant demographic difference between the two groups, further testing was done to evaluate if it had any influence on the perception of appropriateness of behaviors. Rankings of the behaviors by the older Group 1 (>41 years) were very similar to the original rankings of Group 1. Rankings of behaviors by the older Group 2 (>41 years) were slightly lower than the original Group 2. A Mann-Whitney U analysis was then performed using the two collapsed age groups (18 to 40 years, and >41 years of age) to determine if there were any significant differences.

Table 7**Significant Differences in Perceived Appropriate Behaviors**

Behavior	Mean Rank		Z	2-Tailed P
	Have seen NP	Have not seen NP		
1. Order diagnostic tests	59.89	47.5	-2.41	.02
2. Prescribe/change medications	59.49	47.97	-2.07	.04
3. Refer to specialists	60.59	46.76	-2.59	.01
4. Educate community	60.25	47.14	-2.55	.01
5. Provide counseling	60.06	46.15	-2.82	.01
6. Explain role of NP	60.57	46.78	-2.66	.01
7. Teach responsibility for health	59.89	47.53	-2.32	.02

In the age category of 18 to 40 years, there were no statistical differences in the perceptions of behaviors between participants in the two groups. However in Group 1, participants who were older than 41 years, identified 3 new behaviors that were significantly perceived as more appropriate than Group 2. In addition, three of the behaviors (Order diagnostic tests, Provide counseling about health issues, and Teach families to take responsibility for health) that were originally identified by that group before age was not taken into consideration, were also found to be significantly more appropriate (see Table 8).

Table 8**Significant Differences in Perceived Appropriate Behaviors in >41 Age Group**

Behavior	Mean Rank		Z	2-Tailed P
	Have seen NP	Have not seen NP		
1. Order diagnostic tests	26.54	19.48	-1.95	.05
2. Provide counseling	25.63	19.09	-2.07	.04
3. Prescribe pain medication	26.00	19.70	-2.02	.03
4. Work with MD on complex cases	27.25	19.20	-2.32	.02
5. Teach responsibility for health	28.00	18.90	-2.61	.01
6. Resource person for health care	27.46	19.12	-2.42	.02

Knowledge of Nurse Practitioner

Additional questions were asked to: 1) determine how participants had heard of nurse practitioners, 2) if they felt they had a good understanding of the role, and 3) determine whose responsibility they thought it was to educate the public regarding the role of the nurse practitioner. Responses to the first and third questions were not mutually exclusive and participants could chose more than one answer. Initially the two groups were looked at individually for frequencies of their responses, and then later compared for significant differences.

When asked how participants had heard of nurse practitioners, more than 30% of participants in both groups had heard from another health care provider, while over 20% had heard of nurse practitioners from some "other" source. The fewest amount of participants (12% or less) had heard of nurse practitioners from media sources. Of the 56

participants from Group 1, 26 people had heard about the role from nurse practitioners themselves, while just 5 out of 51 participants from Group 2 had heard of a nurse practitioner from a nurse practitioner. Only 19.6% (11) of the participants from Group 1 had heard of the role from friends or family compared to 38% (18) from Group 2 who had heard of the role the same way.

Comparing the two groups for significant differences in their responses to the question of how participants had heard of a nurse practitioner, a Chi Square analysis was performed. Results showed that a significantly larger number of the participants in the group who had not been seen by a nurse practitioner had their knowledge from either friends or family, compared to participants from Group 1 ($X^2 = 4.39$, $df = 1$, $p=.036$). Understandably, almost 50.0% of the group who had been seen by a nurse practitioner had heard of the role by a nurse practitioner themselves, which was significantly more than the 9.8% of the group who had heard of the role, but not been seen by the nurse practitioner themselves ($X^2 = 19.71$, $df = 1$, $p=.000$).

Regarding the question whether participants felt they had a good understanding of the NP role, 75% of the participants who had been seen by a nurse practitioner felt that they did have a good understanding of the role. Surprisingly 54.9% of the participants from Group 2 felt they had a good understanding of the role despite the fact that they had never been seen by a nurse practitioner. A Chi Square analysis however demonstrated a difference between the two groups with significantly more participants in Group 1 possessing an understanding of the role than the participants in Group 2 ($X^2 = 4.25$, $df = 1$, $p=.039$).

The last question concerning who participants felt should educate the public about nurse practitioners found that in both of the groups, more than 74% of participants felt that it was the physician's responsibility to educate the public on the role of the NP. Greater than 54% of the participants in both groups responded that it should be the nurse practitioner's duty to educate the public in their role and only 33% or less, felt that it was the media's job. There were no significant differences between the two groups in their responses to the question of who should educate the public in the role of the nurse practitioner.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

Discussion

“Defining the scope of practice for nursing” was a personal concern of Imogene King, which eventually influenced the development of particular concepts in her General Systems Framework (1971). According to King, changes in society, changes in the role of women, and advancement in knowledge from research and technology have influenced changes in nursing, and therefore the scope of practice.

One example of change is the advanced education in nursing which has led to an expanded role of a nurse practitioner. It is imperative that nurse practitioners understand how patients perceive this NP role before they can work together. Considering King’s conceptual framework “Health professionals have the responsibility to gather relevant information about the perceptions of the client so that their goals and the client’s are congruent” (1981, p. 143). Evaluating the responses of the participants in this study offers insight into patient’s perception of the scope of practice for the nurse practitioner role.

King (1971) speculates that perceptions of the nurse’s role are being formed by the patient even prior to contact with the nurse. Therefore, the sample of participants in this study were divided into two groups: those who had seen a nurse practitioner (Group 1), and those who had not (Group 2). Findings indicated that the group of participants who have seen a nurse practitioner, as well as the group who have not seen a nurse

practitioner, agreed in their perception that all the behaviors (functions) listed in the questionnaire were appropriate for the role of the nurse practitioner.

Those behaviors listed in the questionnaire which included education, research, resource person, and collaboration received the highest rankings from both groups. It is gratifying to see that nurse practitioners have been able to maintain a holistic approach and portray to the patients components of their role which make them unique from other health care providers.

The highly appropriate perception of educational behaviors coincides with the focus of the nurse practitioner to educate patients, families and the community in the importance of health maintenance, promotion and disease prevention actions.

Collaboration with physicians was also perceived as highly appropriate among both groups. King (1981) viewed nurses as “partners with physicians, social workers and allied health care professionals in promoting health, in preventing disease, and in managing patient care” (p. 52). Behaviors which included community involvement in health promotion also received high rankings. Concurring with these perceptions, King believed that the environment or social milieu within a community influences health and therefore need to be included in health promoting behaviors.

Behaviors listed in the questionnaire which were more medically oriented, such as prescribe medication, teach medical students, and perform certain procedures, although perceived as appropriate, received lower rankings from both groups. No behaviors were identified as being inappropriate. These findings support the study done by Wiseman and Hill (1994) which found that patients accepted the fact that nurse practitioners could perform 90% to 97% of the traditional nursing tasks, but only accepted performance of

70% to 87% of the nontraditional tasks (diagnosing minor illnesses, performing physicals, prescribing medications, performing minor surgery, and making referrals).

Likewise, the study conducted by Betencourt et al. (1996) discovered that patients had a very positive perception of the nurse practitioner role regarding the educational, counseling and treatment of minor injuries and illnesses. However, participants from that study did not perceive that the more medical functions were appropriate for a nurse practitioner, whereas the participants from this study still felt they were appropriate, even though they ranked them lower.

A surprising finding was that the behaviors that were perceived significantly different between the groups before age was considered, had no basic trend. As was found, one might have anticipated that behaviors which are more medically based were perceived significantly less appropriate by those participants in Group 2 who did not know the NP scope of practice. Other behaviors which were found to be perceived significantly different however, ranged from the various components of diagnosis and treatment, education, and counseling.

When age was taken into account, respondents from Group 1 (in the greater than 41 years of age), found six behaviors to be significantly more appropriate than Group 2 of the same age group. Again, behaviors which were significantly perceived more appropriate by the Group 1 were not only educational and resource oriented, but also had medical components. Similar to the initial findings, none of the behaviors were perceived as inappropriate by either of the older groups.

The significant differences in perception of appropriate behaviors between the older members of Groups 1 and 2 could be due to several factors. It is possible that a

larger portion of older patients had not had the same opportunity to receive care from a nurse practitioner. Patients in this age group may require more specialty care to deal with chronic illness. This study however, only focussed on the nurse practitioner in primary care settings. Another plausibility is that this age group has chosen to stay with the more traditional health care model and use physician providers for their health care needs, therefore have less of an understanding of the nurse practitioner role. Since the older Group 1 (> than 41 years) rated six behaviors significantly higher than the older Group 2, it might suggest that those participants who have had the opportunity to see a nurse practitioner perceived the NP role to be more encompassing.

No significant differences were found between the younger (<41 years) Groups 1 and 2 participants in their perceptions of appropriate behaviors. Younger patients, whether they have seen a nurse practitioner or not, may have a better understanding of the role because of a greater interest in health promotion and disease prevention, topics often related to the services provided by nurse practitioners. Younger patients may also tend to seek out more “alternative” options for health care, which conceivably nurse practitioners could be considered.

Findings regarding the differences in age between groups are similar to those in a study done by Armer in 1997 in which being younger was more likely to predict support for the role of the nurse practitioner. However, Armer also found that males and low income levels predicted more support for the role. This study did not find those demographic characteristics to be significantly different between groups and therefore did not evaluate them for their effect on perception.

King's (1971) idea that patients can develop preconceived perceptions regarding nurses might explain why 55% of the group who had not been seen by a nurse practitioner, felt they had a good understanding of the role. Even though this number was significantly less than the 75% of Group 1 who felt they had a good understanding, it was evident from Group 2's responses that they knew enough about the role to have the similar perceptions (although slightly lower) as Group 1.

A significant amount of Group 2 (38%) had heard of the role of the nurse practitioner from friends or family. Even though they had not been treated by a nurse practitioner, these findings might suggest that health care consumers discuss their values about health care and the care that they receive from their providers, and share that information with others. Again this finding coincides with King (1981), who maintains that values which set the standard for human conduct are passed within a society, and from generation to generation.

Evaluating the responses regarding who should educate the public in the role of the nurse practitioner, greater than 74% of the respondents felt it was the physician's job. This supports Hupcey's (1993) findings which shows that support by the physician for the role of the NP is one of the most vital factors in whether patients perceive and accept the nurse practitioner as a capable health care provider.

Implications

Evidenced by the fact that it was difficult to find patients to participate in the study who had not been seen by a nurse practitioner, implies that nurse practitioner services are being widely utilized in a variety of primary care settings. It is encouraging to see that the role and function of the nurse practitioner is being applied in the community.

Findings from the study also reveal that the group who had been seen by a nurse practitioner consistently ranked the behaviors of the role higher. This overall positive trend in perception of the role may be in part due to their experience with a nurse practitioner and confidence in their capabilities.

Additionally, several important implications for patients can be made from this study. Although all of the behaviors were seen as appropriate, the results of the ranking of the behaviors indicate that both groups, as well as the general public need to be further educated on the scope of practice.

For example, behaviors including: 1) Develop a plan of care, 2) Deciding if the patient is improving, and 3) Change care if there is no improvement, were perceived by the groups as being least appropriate. According to King (1981), the planning phase is the time when needs are identified and goals are set. A specific plan is developed during this phase to achieve those goals. During the transaction phase, the patient and nurse are working towards goal attainment. The evaluation phase requires a decision with regard to whether the goal was attained, and if not, why. These phases are rudimentary and essential to the nursing process, yet participants did not perceive them as appropriate to the role. These findings indicate a need for educating patients regarding the basic nursing process and functions which are well within the nursing realm.

The behavior of “teach medical students” is probably the behavior which in reality, is practiced the least in this area of the primary care setting. It is not surprising that it was ranked low by both groups. On the contrary, prescribing medication, and performing certain procedures such as suturing and simple biopsies, are all important holistic functions

of the nurse practitioner role. These behaviors were however, also ranked lowest by the participants.

Patients need to be assured that technical behaviors as well those traditionally thought of as nursing functions, are a part of the nurse practitioner's education and role. According to King (1981), understanding of the nurse practitioner role is imperative if there is to be favorable interaction between the nurse and the patient. With an understanding of the part each of them play, the nurse and patient can successfully move toward obtaining their mutual goals. It is imperative that patients understand that health goals requiring technical components can be obtained with services provided by a nurse practitioner.

Limitations

Limitations in this study are related to the subjects who participated in the study, as well as the tool itself. Evaluating the demographics, it is clear that this study cannot be generalized culturally since 95.3 % of the participants were Caucasian, and 75.7% were female. The radius of miles within which the participants came from was also very small, making these results particular to that area.

A small sample size of 107 patients also limits the ability of the results to be generalized to an entire population. Since all of the sites that participated in the study were primary care offices, it is also impossible to generalize these results to specialty or acute care nurse practitioners. The fact that patients were conveniently sampled and had the option of not participating may be another factor in altering the results, since only those patients who had some interest in the topic may have participated.

The other limitation in the study is the fact that the behaviors listed in the tool do not totally reflect the scope of practice or the impact that nurse practitioners make. The tool may have been more informative if an option had been given for patients to write in behaviors that they had experienced or envisioned for a nurse practitioner's scope of practice. In addition, patients may have had a hard time answering a likert type scale offering only four rankings. Possibly they felt that their answer should have fallen somewhere in between the options available.

Lastly, because this tool was originally written for health care professionals, some of the behaviors were difficult to simplify, and some were behaviors that only health care providers might understand. These factors may have caused a degree of frustration for some of the respondents if they felt they could not relate to the questionnaire.

Recommendations

In evaluating the results of this study, it is obvious that education of health care consumers is needed to increase understanding of the role and function of the nurse practitioner. Even though this study did not include perceptions of other health care professionals and media regarding the role, the literature review suggests that education of these groups is indicated as well. This is especially important if those parties are going to be supportive of the role and influence the public in utilization of NP services.

Actions to be taken by nurse practitioners. Nurse practitioners need to portray to the public behaviors which are appropriate for their role. The most basic way to do this is through their actions and practice.

Additionally, NPs can facilitate public knowledge by being active in the media which will lead to increased exposure of the role. Continued research will provide data

regarding perceptions, quality of care, cost effectiveness, and access to care provided by nurse practitioners. This information in turn will be useful in patient education of the NP role. Participation in nursing groups will provide a cohesive atmosphere for the profession. Continuing education will foster professional advancement. Becoming active in legislature to resolve reimbursement issues and promote prescriptive authority are imperative to be able to offer more comprehensive services. Together these actions will strengthen the NP position and gain visibility for the role.

Before others can be educated regarding the role, nurse practitioners themselves need to have a clear understanding of their job description and scope of practice. Nurse practitioners then in turn, need to take the initiative to educate each setting which utilizes advanced practice nurses on those parameters of function. This will increase knowledge and support of the role from other co-workers and health care providers.

When providing patient care, nurse practitioners always need to introduce themselves so there is no confusion about their identity or function. Standardizing a pamphlet that details the role could be given to patients in areas where nurse practitioners practice. Although the majority of respondents in this study felt physicians should educate the public regarding the role of the NP, nurse practitioners have a responsibility to make it a priority and a part of their practice.

Since this study found that older patients (> 41 years) who have not seen a nurse practitioner perceive the role significantly different in some aspects, this might be a group to target for education. Providing brochures in the employee health offices of corporations and holding seminars for health promotion and disease prevention might provide an opportunity to expose and educate that age group about nurse practitioners. For the senior

citizens, having health screening tests and informational programs at retirement homes may be another way of providing information to a group of people who otherwise may not be aware of what nurse practitioners are and what they can do.

Actions to be taken by nurse educators. Keeping in mind King's General Systems Framework (1981), nurse educators need to impress upon nursing students at any level, the importance of understanding the patient's perception of the nursing role. Without this understanding, the patient and nurse cannot effectively work towards goal attainment.

At the graduate level of nursing, requiring NP students as a part of their coursework to formulate an explanation of the role would be helpful. Although the definition might be given by rote memory at first, it would give students a base in which to expand upon as their understanding as the role evolves. Many students will be asked by family and friends as well as patients, what a nurse practitioner is. This questioning offers an excellent opportunity for educating others.

Standardizing the requirements for education of the nurse practitioner is also necessary in order to help define the role and support the practice parameters. Nurse practitioners who are educated with different prerequisites do not give the impression of being uniform in their knowledge and abilities. This impression may increase patients uncertainty about their qualifications, as well as affect employers who may consider hiring nurse practitioners.

It may also behoove nurse educators to advocate for more instruction in clinical skills of nurse practitioner programs, since these behaviors are almost consistently perceived as the least appropriate of the nurse practitioner role. Proficiency in basic

technical skills, rather than a deterrent to the role, should an adjunct to providing holistic, quality care.

Nurse educators should also emphasize the importance of developing good collaboration skills with other health care professionals, since this will be an important part of their practice. Positive relationships with other health care providers will encourage support and promotion of the nurse practitioner position.

Actions to be taken by nurse administrators. Nurse administrators also serve an important part in educating others about the NP role. By hiring nurse practitioners to provide health care in a variety of settings where their services are appropriate, administrators increase utilization of the role. Promoting relationships and collaboration between other disciplines and nurse practitioners is another way that administrators can increase NP involvement.

Nurse administrators can also institute marketing plans that will increase visibility of the role. One strategy includes securing seats for NPs on health related committees to increase their community involvement. Listing NP services in advertisements and promotions will also increase public awareness. Arranging events in which nurse practitioners can teach, present health care topics or research will increase public awareness of the nurse practitioner role and scope of practice.

Nurse administrators always need to be alert to trends which may offer future practice opportunities for the NP. Possibilities include transferring the knowledge and skill gained in the primary care into less traditional settings such as tertiary care, industry, nurse managed community clinics, and corporate health care centers. In reality, the scope of potential practice settings for the nurse practitioner are endless.

This is an opportune time for nurse practitioners to merge into the mainstream of the health care arena. However, if nurse practitioners are to be effective health care providers, it is imperative that they understand patient's perception of their role in providing care. Further research projects are necessary to implement education interventions and evaluate what type is most effective in educating the public regarding the NP role. In addition, studies which replicate this one, but involve a larger geographic area, more subjects, wider cultural diversity, and different health care sites would be beneficial in order to generalize results.

APPENDICES

APPENDIX A

Permission for Use of Original Instrument

APPENDIX A

Permission for Use of Original Instrument

Betsy Mulder, B.S.N. has my permission to:

	<u>Yes</u>	<u>No</u>
1. Adapt an adapted form of the questionnaire used in the study entitled <i>Graduate education for Nurse Practitioners: Are advanced degrees needed for practice?</i> (1994) by J. Hupcey, EdD, CRNP	<u>✓</u>	<u>—</u>
2. Publish a copy of the tool in the appendix of her Master's Thesis	<u>✓</u>	<u>—</u>

Signed: Judith Hupcey

APPENDIX B

Permission for Use of Revised Instrument

APPENDIX B

Permission for Use of Revised Instrument

Betsy Mulder, B.S.N. has my permission to:

	<u>Yes</u>	<u>No</u>
1. Adapt the questionnaire used in the thesis entitled <i>Nurse/Physician Perceptions of the Nurse Practitioner Role.</i> (1995) by Deborah Bambini, R.N.C., M.S.N.	<u>✓</u>	<u> </u>
2. Publish a copy of the tool in the appendix of her Master's Thesis	<u>✓</u>	<u> </u>

Signed: Deborah R. Bambini

APPENDIX C

Permission for Office Participation

APPENDIX C

Permission for Office Participation

Dear Office Manager:

I am a Registered Nurse working towards a master's degree in Nursing at Grand Valley State University. I am examining patient perception of the role of the nurse practitioner in primary care.

For the purposes of this study, a questionnaire listing 28 nurse practitioner behaviors will be given to patients who have been cared for by a nurse practitioner as well as patients who have not been cared for by a nurse practitioner. The patients will be asked to rank how appropriate they perceive each of these behaviors is for the role of the nurse practitioner. A copy of the questionnaire is enclosed for you to see.

I am asking for your help in determining how patients perceive the role of the nurse practitioner. The findings will help us evaluate if patients who have been cared for by a nurse practitioner have a greater knowledge of the role as well as what patients perceive the role to be. As nurse practitioners become an increasing entity in the arena of health care providers, these results can be used for educating the public regarding their role.

Your receptionist will be given written criteria to determine if a patient will qualify to be included in the study. They will then ask the patient if they would like to participate in the study. The receptionist will also be given a written script to read to patients regarding the study. A cover letter accompanying the questionnaire will reinforce this information as well as explain that willingness to participate in the study indicates informed consent. A goal of the study is to have 26 conveniently selected patients from four different offices participate. The questionnaire will take your patients approximately 10-15 minutes to fill out. There are no risks involved in participation. The patient may choose to end participation at any time. In order to assure that patient's questionnaire remains anonymous, they are asked not to put their name on it.

If you have any questions regarding the study, you may contact myself, Betsy Mulder, at (616) 335-2978. Members of a supervisory committee at Grand Valley State University have approved this study for the Protection of Human Subjects. If you have any questions regarding the approval of this study, you may contact the chairperson of that committee, Paul Huizenga, at (616) 895-2472. Results of this study will be available to you on request

Thank you for your willingness to allow your office to participate.

Sincerely,

Betsy J. Mulder, B.S.N.

Permission for Office Participation

The office of _____ has read the research proposal written by Betsy Mulder and understands the purpose, procedure, and anticipated outcomes and benefits of the study. We understand the participation required from our receptionist and patients. We understand that there will be no risk involved for our patients and that they have the ability to stop participation at any time should they so choose, without repercussion. We have been given the telephone number of the researcher, Betsy Mulder, and of the Human Subjects Review Committee chairperson, Paul Huizenga if we would need it for any reason. We also understand that we will be given the results of the study if we request them.

Date: _____

Signature: _____

Title: _____

Institution: _____

Address: _____

City: _____

State: _____ Zip: _____

APPENDIX D

Human Subjects Review Permission



**GRAND VALLEY
STATE UNIVERSITY**

1 CAMPUS DRIVE • ALLENDALE, MICHIGAN 49401-9403 • 616/895-6611

November 23, 1998

Betsy Mulder
735 Newcastle Dr.
Holland, MI 49423

Dear Betsy:

Your proposed project entitled "*Patient Perception of the Role of the Nurse Practitioner in Primary Care*" has been reviewed. It has been approved as a study which is exempt from the regulations by section 46.101 of the Federal Register 46(16):8336, January 26, 1981.

Please note that Grand Valley State University letterhead is not to be used without the permission of University Counsel, Tom Butcher.

Sincerely,

Paul Huizenga, Chair
Human Research Review Committee

APPENDIX E

Instructions for Receptionist

APPENDIX E

Instruction for Receptionist

Dear Receptionist:

My name is Betsy Mulder and I am a Registered Nurse working towards a master's degree at Grand Valley State University. I am conducting a study on patients' perception of the role of the nurse practitioner in primary care. We are finding that nurse practitioners are providing more care for our patients, yet patients don't really understand what they are qualified to do. That is where I wonder if you can help me. I have a questionnaire that has 28 behaviors that are appropriate for the role of the nurse practitioner. Since your office has a nurse practitioner providing care, I would like to see what patients perceive are appropriate behaviors or functions for the nurse practitioner. I would also like patients who have not been cared for by the nurse practitioner to fill out the questionnaire, so I can compare the two.

I need 13 patients who have been cared for by a nurse practitioner, and 13 patients who have not been cared for by a nurse practitioner to participate in the study. Twice weekly, I will come to your office to determine how many questionnaires have been completed from each group and how many more are still needed. In total, four offices will participate in the study.

There are several criteria that the patient's will have to meet in order to be eligible for the study.

1. They must be 18 years of older, or if the patient is a child, their parent or guardian may fill out the questionnaire.
2. They must be able to read and understand English.
3. They must either have been cared for by a nurse practitioner, or have heard of a nurse practitioner by word of mouth or media.

If you determine that a patient fits the criteria, the following page is a script you can follow.

Please read the questionnaire over yourself, so I can answer any questions you might have regarding it. I will call you in one week to see what the progress is. Feel free to call me before that point if you have questions. My beeper number is 230-6856.

Thank you so much for helping me with this study. I hope these results will help us educate our patients about the role of the nurse practitioner. If your office wants the results of the study, please let me know.

Sincerely,

Betsy Mulder, B.S.N.

APPENDIX F

Script for Receptionist

APPENDIX F

Script for Receptionist

Mr. or Mrs. _____,

Our office is helping a nursing student by the name of Betsy Mulder, conduct a study on what patients think nurse practitioners do in their job. Have you been cared for by the nurse practitioner? _____ We have a questionnaire that asks whether you think nurse practitioners perform certain functions in their job. The questionnaire will take about 10-15 minutes to fill out. You can fill it out while you are waiting, or if you get called into the exam room before you are finished, you can finish it there or after you are done with your appointment. If at any time you feel like you don't want to finish the questionnaire, you don't need to. There won't be any penalty to you if you don't finish. There is also no risk to you in participating in the study. Betsy does not want to know who filled out each of the questionnaires, so don't put your name on it. By filling out the questionnaire you are giving your permission to be included in the study. When you are done, you can put your questionnaire in this box. If you have any questions about it feel free to come up and as me and if I can help you I will. Betsy has also put her name and telephone number on the questionnaire, so you can call her if you need to.

Please thank the patients on my behalf for being willing to participate,

Betsy Mulder

APPENDIX G

Cover Letter to Participants

APPENDIX G

Cover Letter to Participants

Dear Participant:

Nurse practitioners are becoming a big part of today's health care team. In fact, your doctors' office has a nurse practitioner who provides health care for patients. Even though there are over 70,000 nurse practitioners in the United States at this time, many people don't know what they do.

I am a graduate student in the Nursing program at Grand Valley State University. As a part of the requirements of a master's degree, I am conducting a study to find out what people think and know about nurse practitioners. This study asks patients if they feel certain functions are right for a nurse practitioner to do in their job. The functions or "behaviors" are listed in a questionnaire.

You are 1 of 104 patients selected by convenience to be included in this study. You don't have to have been cared for by a nurse practitioner to be in the study, but may know about nurse practitioners through things that you've heard or from what other people have told you. The questionnaire will take you 10-15 minutes to fill out. In order to make sure that no one knows who filled out the questionnaire, please don't put your name on it. The fact that you agree to fill out the questionnaire indicates that you understand what this study is about and voluntarily agree to be in it. You may however, stop at any time if you feel you can't or don't want to continue with the questionnaire. There is no risk to you in participating in the study.

If you have any questions about the study, you can contact myself, Betsy Mulder, at (616) 335-2978 or the chairperson of my thesis committee, Dr. Lorraine Rodrigues Fisher, at (616) 895-2595. Members of a supervisory committee at Grand Valley State University have approved this study for the Protection of Human Subjects. If you have any questions regarding the approval of this study, you can contact the chairperson of that committee, Paul Huizenga, at (616) 895-2472.

Your input on what patients see as the role of the nurse practitioner is very important for educating people about what nurse practitioners do, especially as their role in providing health care increases. Thank you very much for taking your time to fill this questionnaire out.

Sincerely,

Betsy J. Mulder, B.S.N.

APPENDIX H

Questionnaire

APPENDIX H

Questionnaire

Please circle your response regarding the appropriateness of the following behaviors for the role of the nurse practitioner.

This behavior is appropriate for a nurse practitioner:	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Ask a patient about their health in the past.	1	2	3	4
2. Perform a complete physical exam.	1	2	3	4
3. Order diagnostic tests such as blood work and xrays.	1	2	3	4
4. Perform certain diagnostic tests.	1	2	3	4
5. Evaluate all the information gathered to determine the patient's health.	1	2	3	4
6. Develop a list of health problems from the information collected.	1	2	3	4
7. Develop a plan to take care of the patient and put that plan into action.	1	2	3	4
8. Prescribe and/or change medications.	1	2	3	4
9. Decide if what is being done for the patient is making them better.	1	2	3	4
10. Change what is being done for the patient if it is not making them better.	1	2	3	4
11. Prescribe pain medications under a doctor's supervision.	1	2	3	4
12. Working in partnership with the doctor to take care of complicated health problems.	1	2	3	4
13. Working in partnership with the doctor to see patients and supervise their care when they are in the hospital.	1	2	3	4
14. Work with people in the community to provide care to patients who need help.	1	2	3	4
15. Refer patients to specialty services if they need it.	1	2	3	4
16. Appear before community and voluntary health groups and provide health information.	1	2	3	4
17. Help to educate the community in health care.	1	2	3	4
18. Determine if there are emotional factors that are affecting a patient's health.	1	2	3	4
19. Provide counseling to patients and/or family about health issues.	1	2	3	4

This behavior is appropriate for a nurse practitioner	Strongly Disagree	Disagree	Agree	Strongly Agree
20. Help teach nursing students.	1	2	3	4
21. Help teach medical students.	1	2	3	4
22. Supervise other nurses.	1	2	3	4
23. Explain what the role of the nurse practitioner is to patients, health care providers and the community.	1	2	3	4
24. Teach families how to take responsibility for maintaining their own health.	1	2	3	4
25. Be a resource person for the other health care providers.	1	2	3	4
26. Do research that will make nursing practice better.	1	2	3	4
27. Develop a standard plan of care to take care of patients.	1	2	3	4
28. Perform certain procedures such as skin biopsies, suturing lacerations and casting simple fractures.	1	2	3	4

Note. From "Nurse/Physician perception of the role of the nurse practitioner." by D. Bambini, 1995. Adapted with permission.

Please respond to all questions so that this sample can be described:

29. What type of medical office are you being seen in today? 1. Pediatrics ___
2. Internal Medicine ___ 3. Obstetrics and Gynecology ___ 4. Family Practice ___
30. What is your age? 1. 18-30 ___ 2. 31-40 ___ 3. 41-50 ___ 4. 51-60 ___ 5. >60 ___
31. What is your race/ethnic background ? 1. American Indian or Alaska Native ___
2. Asian ___ 3. African American ___ 4. Hispanic or Latino ___ 5. White ___
6. Native Hawaiian or Pacific Islander ___
32. What is your highest level of education? 1. Grade School ___ 2. High School ___
3. College ___ 4. Graduate School ___ 5. Post Graduate ___
33. What is your gender? 1. Male ___ 2. Female ___
34. What is your average yearly income? 1. Less than \$10,000 ___
2. \$10,000-\$20,999 ___ 3. \$21,000-\$40,999 ___ 4. \$41,000-\$60,999 ___
5. \$61,000-\$80,999 ___ 6. Greater than \$ 81,000 ___
35. Have you or your child ever been treated by a nurse practitioner?
1. Yes ___ 2. No ___
36. How have you heard about nurse practitioners? 1. Media ___ 2. Friend or relative ___
3. Nurse practitioner ___ 4. Another health care provider ___ 5. Other ___
37. Do you feel like you have a good understanding of what a nurse practitioner is?
1. Yes ___ 2. No ___
38. Whose responsibility do you think it is to educate the public regarding the role of the
nurse practitioner? 1. Nurse practitioners ___ 2. Physicians ___ 3. Media ___

Please take this opportunity to look over the questionnaire and make sure that you have filled in all the questions. Thank you again for your time and support in participation in this study!

APPENDIX I

Rank Order of Behaviors Identified by Group 1

APPENDIX I

Table 9

Rank Order of Behaviors Identified by Group 1

Behavior	Percent of Respondents				Mean Rank
	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	
1. Explain role of the NP			42.9%	57.1%	3.57
2. Ask a patient about past health			42.9%	57.1%	3.57
3. Teach patients how to maintain health			46.4%	53.6%	3.54
4. Educate community in health care			50.0%	50.0%	3.50
5. Research to improve nursing practice		1.8%	53.6%	44.6%	3.43
6. Resource person for health care		1.8%	58.9%	39.3%	3.38
7. Provide community health care			62.5%	37.5%	3.38
8. Inform community about health care		1.8%	60.7%	37.5%	3.36
9. Provide counseling about health		1.8%	60.7%	37.5%	3.36
10. Collaborate with MD complex cases		3.6%	60.7%	35.7%	3.22
11. Prescribe pain medications under a doctor's supervision			69.6%	30.4%	3.30
12. Refer patients to specialty services if they need it		8.9%	55.4%	35.7%	3.27
13. Develop a standard plan of care to take care of patients		5.4%	66.1%	28.6%	3.23
14. Help teach nursing students		9.1%	60.0%	30.9%	3.22

Table 9

Rank Order of Behaviors Identified by Group 1 (continued)

Behavior	Percent of Respondents				Mean Rank
	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	
15. Develop a list of health problems from the information collected.		8.9%	64.3%	26.8%	3.18
16. Working w/MD to care for hospitalized patients		10.9%	61.8%	27.3%	3.16
17. Order diagnostic tests such as blood work and xrays		10.7%	64.3%	25.0%	3.14
18. Supervise other nurses	1.8%	7.3%	67.3%	23.6%	3.13
19. Perform certain diagnostic tests		7.1%	73.2%	19.6%	3.13
20. Develop a plan of care for the patient	1.8%	18.2%	49.1%	30.9%	3.09
21. Perform a complete physical exam	1.8%	19.6%	48.2%	30.4%	3.07
22. Evaluate information to determine health	1.8%	14.3%	58.9%	25.0%	3.07
23. Determine if emotional factors are affecting health	1.8%	21.4%	51.8%	25.0%	3.00
24. Decide if the patient is improving	1.8%	14.3%	67.9%	16.1%	2.98
25. Perform certain procedures	1.8%	18.2%	60.0%	20.0%	2.98
26. Teach medical students		29.1%	54.5%	16.4%	2.87
27. Prescribe and/or change medication	1.8%	33.9%	41.1%	23.2%	2.86
28. Change care if there is no improvement	3.6%	25.5%	52.7%	18.2%	2.85

APPENDIX J

Rank Order of Behaviors Identified by Group 2

APPENDIX J

Table 10

Rank Order of Behaviors Identified by Group 2

Behavior	Percent of Respondents				Mean Rank
	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	
1. Ask a patient about past health			51.0%	49.0%	3.49
2. Research to improve nursing practice		3.9%	70.6%	25.5%	3.31
3. Explain role of the NP			68.6%	31.4%	3.31
4. Teach patients how to maintain health		2.0%	66.7%	31.4%	3.29
5. Educate community in health care		3.9%	68.6%	27.5%	3.24
6. Collaborate w/MD in complex cases		7.8%	62.7%	29.4%	3.22
7. Resource person for health care		3.9%	70.6%	25.5%	3.22
8. Inform community about health care		5.9%	66.7%	27.5%	3.22
9. Provide community health care		3.9%	72.5%	23.5%	3.20
10. Develop standard plans of care		7.8%	70.6%	21.6%	3.14
11. Working w/MD to care for hospitalized patients	2.0%	9.8%	62.7%	25.5%	3.12
12. Supervise other nurses		3.9%	82.4%	13.7%	3.10
13. Prescribe pain medications under a doctor's supervision	2.0%	3.9%	76.5%	17.6%	3.10
14. Help teach nursing students	2.0%	5.9%	74.5%	17.6%	3.08

Table 10

Rank Order of Behaviors Identified by Group 2 (continued)

Behavior	Percent of Respondents				Mean Rank
	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	
15. Perform a complete physical exam	2.0%	15.7%	54.9%	27.5%	3.08
16. Develop a list of health problems from the information collected		7.8%	76.5%	15.7%	3.08
17. Provide counseling about health issues		10.0%	74.0%	16.0%	3.06
18. Decide if the patient is improving		11.8%	80.4%	7.8%	2.96
19. Refer patients to specialty services if they need it		23.5%	58.8%	17.6%	2.94
20. Evaluate information to determine health	5.9%	19.6%	51.0%	23.5%	2.92
21. Perform certain diagnostic tests	2.0%	15.7%	54.9%	27.5%	2.90
22. Determine if emotional factors are affecting health		21.6%	68.6%	9.8%	2.88
23. Order diagnostic tests such as blood work and xrays	2.0%	23.5%	62.7%	11.8%	2.84
24. Perform certain procedures	3.9%	21.6%	60.8%	13.7%	2.84
25. Develop a plan of care	3.9%	17.6%	68.6%	9.8%	2.84
26. Teach medical students	3.9%	27.5%	56.9%	11.8%	2.76
27. Change care if there is no improvement	4.0%	28.0%	58.0%	10.0%	2.74
28. Prescribe and/or change medication	11.8%	31.4%	52.9%	3.9%	2.49

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