A SOUTHEASTERN COMMUNITY'S KNOWLEDGE, ATTITUDES, INTENTIONS, AND BELIEFS REGARDING THE ROLE OF THE NURSE PRACTITIONER

by

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Abstract

The purpose of this quantitative descriptive study was to examine consumer knowledge, attitudes, intention, and beliefs about nurse practitioners (NPs), to determine whether a relationship existed between knowledge, attitudes, intentions, and beliefs, and demographic variables of age, gender, ethnicity, education, degree, profession, type of insurance, frequency of visits to a primary care provider in the past 12 months, and consumer exposure to nurse practitioners. A conceptual framework combining Orem's self care deficit theory and Ajzen and Fishbein's theory of reasoned action. This framework was used to explain the relationship between knowledge, attitudes, intention, beliefs, and behavior and the nurse practitioner's role in intervening to affect change in that relationship.

Subjects (n=202) from rural and urban areas responded to a demographic questionnaire, knowledge scale, and a researcher generated tool with Likert type statements rating their attitudes, intentions, and beliefs about nurse practitioners.

Descriptive statistics showed that, while most subjects knew that NPs perform traditional nursing roles, only 26 said NPs could perform all functions listed. The majority of respondents did not know that NPs prescribe medications, order and interpret laboratory tests and x-rays, and perform Pap smears and prostate examinations. Most subjects held positive attitudes, intention, and behavioral beliefs regarding NPs.

Pearson correlation coefficient was utilized to determine that a significant correlation exists between age and knowledge of the NP role. Relationships between age and intention and age and normative beliefs approached significance. Spearman rank order was utilized to determine that gender was significantly correlated with behavioral beliefs and motivation to comply. The relationship between gender and knowledge approached significance. Using Chi-square, a significant correlation was found between a subject's having been treated by a NP and that subject's intention and attitudes regarding NPs. A correlation between having been treated by a NP and knowledge of the NP role approached significance. Using Chi-square, a significant relationship was found between media exposure to NPs and knowledge, intention, attitudes, and behavioral beliefs. No other significant correlations were found.

Using ANOVA, the researcher found that a significant difference exists in behavioral beliefs based on rural and urban setting. Mean summed negative behavioral beliefs regarding the role of the NP were significantly higher in urban subjects than in rural subjects. No other significant differences were found in attitudes, intention, or normative beliefs based on urban or rural setting.

The conclusions reveal a community wide knowledge deficit regarding the role of the NP. This study has implications for NP education, practice and research.

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Chapter 1: The Problem

Introduction

Nurses have been practicing in expanded roles for approximately 30 years (Cheyovich & Lewis, 1976). In 1976, the American Nurses' Association began certification of nurse practitioners (NPs) (Morgan & Trolinger, 1994). Historically, nurses in expanded roles have had a variety of education in preparation for that role. In 1992, however, both the ANA and the National Board for Pediatric Nurse Practitioners began to require a masters in nursing degree as a prerequisite for taking the NP certification exam (Morgan & Trolinger, 1994). Differences in amount of clinical hours and didactic hours required still exist between NP programs (Morgan & Trolinger, 1994), but content for nurse practitioners generally includes health assessment, pharmacology, theory development, management, and specific courses related to management of adults, children, and women.

Today's NPs care for clients in every stage of life. They offer complete physical examinations and health assessment, diagnose and treat patients with common acute illnesses and chronic diseases, and educate clients about prevention and wellness (Edmunds, 1988). One might encounter NPs at a hospital, in an ambulatory care clinic, at a jail, senior center, nursing home, shelter for the homeless, public school, center for people with disabilities, campus health center,

corporate employee health office, or in collaborative private practice with a physician (Edmunds, 1988).

In Tennessee, the law mandates third-party reimbursement for NPs and grants NPs prescriptive authority under the protocols of a supervising physician (Pearson, 1997). NPs enhance the managed care environment by increasing rural client access to quality, cost-effective medical care. Studies evaluating the cost-effectiveness of NPs abound and typically reveal that NPs provide cost effective high quality care (Bell, Paneth, & Stein, 1979; Joyner, Miller, Runyan, & Zwang, 1980; Sobolewski, 1981).

Gaining professional recognition and legislative support is only half the battle. To become an integral part of the primary care system, the NP must prove to be cost-effective and competent, but the consumer must also accept the NP in this expanded nursing role. To achieve consumer acceptance, the public must have a good understanding of the role of the NP.

The average health care consumer receives information from friends, neighbors, family members, and the media. Consumers are not apprised of the wealth of research information that exists on the nurse practitioner. It is unclear what information consumers are aware of regarding nurse practitioners, and this can affect consumer utilization of health services that employ nurse practitioners as primary care providers. It is important to determine the knowledge, attitudes,

intentions, and beliefs of consumers about nurse practitioners because knowledge, or lack of knowledge can affect their attitudes and behavior regarding nurse practitioners. Lack of knowledge and negative attitudes toward NPs can result in an increased strain on the healthcare system caused by individuals who shy away from use of the system due to an attitude that leads them to behave in this manner and exhibits itself in this behavior.

Statement of the Problem

Despite the longevity of this profession, the supportive legal provisions for NP practice, and the overall physician and consumer satisfaction with NPs, current literature lacks empirical verification of what the general population understands about this role. To make informed decisions about their health care, consumers need to be aware of the unique abilities a NP offers. NPs need to know what the community understands and expects from this expanded nursing role. By gaining insight into consumer attitudes, intentions and beliefs, NPs can fill the community's educational needs through strategic marketing and can steer NP practice along the path of consumer need.

Purpose of the Study

The purpose of this study was to determine a community's knowledge of, attitude and intention toward, and beliefs about the nurse practitioner. This study correlated knowledge, beliefs, intention and attitudes to demographic variables of

age, gender, ethnicity, profession, educational level, type of insurance, the number of times the consumer visited their primary care provider in the last 12 months, and whether the consumer had exposure to NPs. In addition, this study identified if a difference existed in consumer knowledge, attitudes, intention, and beliefs towards nurse practitioners based on urban or rural setting.

Research Questions

The following are the research questions for this study:

1. What knowledge does the consumer hold about the role of the nurse practitioner?

2. What are the attitudes, intentions and beliefs of consumers toward nurse practitioners?

3. Is there a relationship between consumer knowledge, attitudes, intention, and beliefs based on consumer age, gender, ethnicity, educational level, profession, type of insurance, frequency of visits to the primary care provider, and consumer exposure to NPs?

4. Is there a difference between consumer knowledge, attitudes, intention, and beliefs toward nurse practitioners based on urban or rural setting?

Assumptions

The following are the assumptions of this study:

1. Consumers respond truthfully.

2. There is a relationship between attitudes, beliefs and behaviors.

Theoretical Definitions

Attitude. A "general predisposition that...leads to a set of intentions that indicate a certain amount of affect toward the object" (Ajzen & Fishbein, p. 15, 1975).

Belief. Information a person has about an object. "Beliefs link an object to some attribute" (Ajzen & Fishbein, p. 12, 1975).

Behavior. An "observable act" (Ajzen & Fishbein, p. 13, 1975).

Behavioral Belief. Links a certain behavior with an attribute. For example, a behavioral belief is a belief a certain behavior will bring about a particular consequence (Ajzen & Fishbein, 1975).

Intention. "A special case of beliefs, where the object is always the person himself and the attribute is always the behavior" (Ajzen & Fishbein, p. 12, 1975). Intention links the person with his "subjective probability" (Ajzen & Fishbein, p. 12, 1975) of performing the behavior in question.

Normative belief. The "belief that certain referents think the person should or should not perform the behavior" (Ajzen & Fishbein, p. 16, 1975).

Normative pressure. The combination of normative beliefs and the individual's motivation to comply with referent persons (Ajzen & Fishbein, 1975).

Subjective norm. The "totality of normative pressures" (Ajzen & Fishbein, p. 16, 1975).

Operational Definitions

Community. The Greater Chattanooga area and Spring City area, including those surrounding areas identified in the respective Bell South 1996 Telephone Directories.

Urban. Cities or incorporated areas with a population of equal to or greater than 2,500 people as identified in the 1990 census. Urban areas sampled included Chattanooga, Hixson, Harrison, Signal Mountain, and Ooltewah in Hamilton County, Tennessee.

Rural. Cities or incorporated areas with less than 2,500 people as indicated by the 1990 census are classified as rural. Rural areas sampled were Spring City, Watts, Evensville, and Grandview in Rhea County, Tennessee.

Nurse Practitioner. Any advanced practice nurse certified by successfully passing a national certification examination and/or who has earned a master's of science in nursing from an accredited nurse practitioner program.

Knowledge. Subjects' scores on the knowledge portion of the data sheet, "What Do You Think and Know About Nurse Practitioners."

Intention. Subjects' score on statement one of the questionnaire, "Attitudes and Beliefs About Using Nurse Practitioners for Healthcare."

Attitude. Subjects' scores on statements two through four of the questionnaire, "Attitudes and Beliefs About Using Nurse Practitioners for Healthcare."

Behavioral belief. Subjects' scores on statements five through ten of the questionnaire, "Attitudes and Beliefs About Using Nurse Practitioners for Healthcare."

Normative belief. Subjects' scores on statements 11 through 16 of the questionnaire, "Attitudes and Beliefs About Using Nurse Practitioners for Healthcare."

Motivation to comply. Subjects' scores on statements 17 through 21 of the questionnaire, "Attitudes and Beliefs About Using Nurse Practitioners for Healthcare."

Conceptual Framework

This study combines two conceptual frameworks to develop the conceptual support needed for this study. The Orem theory of self care deficit is used with the Ajzen and Fishbein (1975) belief, attitude, intention, and behavior model to organize the study.

Orem contends that a nurse's role is to provide care for patients based on the client's self-care deficits. Every patient has a degree of self-care agency which serves to "meet one's continuing requirements for care that regulates life

process...and promotes well being" (Marriner-Tomey, 1994, p. 185). The nurse assists the patient to "regulate the exercise and development of self-care agency" (Marriner-Tomey, 1994, p. 185).

The nurse practitioner in a primary care setting may serve as a partially compensatory nursing system, whereby the NP provides patient care which the client cannot perform alone, such as health assessment, diagnostic procedures, diagnosis, and prescriptions. The NP may also act as a supportive-educative nursing system by providing the client guidance, instruction, and support, i.e., education and counseling regarding health promotion and maintenance and disease prevention (Marriner-Tomey, 1994). To enhance self-care agency, the client must be educated regarding available health care choices. Patients not well educated in care and treatment options cannot fulfill their full self-care agency potential and a self-care deficit results. Knowledge deficit is a self care deficit. This study will determine whether the community has accurate knowledge of the NP's ability to provide primary care, determining whether a community wide self-care deficit exists.

Knowledge affects beliefs that are developed by consumers. Beliefs are the fundamental building blocks in this conceptual framework which links beliefs with attitudes and behavior. Consumers develop beliefs based on direct observation or information received from outside sources or by way of inference processes (Ajzen

& Fishbein, 1975). In this manner, beliefs about nurse practitioners are formed. The totality of a consumer's beliefs serves as the informational base that determines their attitudes, intentions, and behaviors. Therefore, attitude can be viewed as a general predisposition that leads to a set of intentions that indicate a certain affect toward an object or nurse practitioner. The overall effect expressed by a person's actions with respect to an object will also correlate to their attitude toward that object. Each of these intentions is related to a specific behavior. This can be translated into an action or behavior of the consumer to utilize nurse practitioners that can be obtained by examining the attitude of the consumer towards the nurse practitioner. Attitude is one major determinant of the consumer's intention to perform the behavior in question - use a nurse practitioner for healthcare.

Other beliefs related to behavioral intention are normative beliefs. These normative beliefs are beliefs that certain referent persons think that one should or should not perform the behavior in question. Normative beliefs and the motivation to comply with referent persons lead to normative pressures. These normative pressures lead to subjective norms (Ajzen & Fishbein, 1975). This subjective norm is a major determinant of a consumer's intention to perform a behavior.

A consumer's behavioral intention can be viewed as a function of two factors. The first factor is their attitude toward the behavior and the second is

their subjective norm. The subsequent intention can be viewed as the immediate determinant of the corresponding behavior which in this study is the consumer's intention to use nurse practitioners for health maintenance.

Significance of Study

Assessing community knowledge and attitudes of the role of the nurse practitioner is imperative to the continued success of this expanded role. Nurse practitioners must determine what the community knows about NP practice and develop the NP role to meet consumer needs. Current empirical data is essential to defining and advancing the role of the nurse practitioner.

Chapter 2: Review of Literature

Introduction

The Nurse Practitioner role has been in existence for approximately 30 years. Nursing and medical literature reflect that the Nurse Practitioner is an effective primary care provider in a variety of settings, contributing to quality patient care while decreasing health care costs. Published research also indicates that expanded nurse roles are widely accepted by the health care consumer, who relates satisfaction with care the NP delivers.

While the literature reflects consumer acceptance of the NP role, most studies sampled only those health care consumers who have had encounters with nurse practitioners. A thorough search of CINAHL and MEDLINE reveals only one study of consumers not exposed to nurse practitioners. No study was found that examined the consumer's knowledge of the role of the nurse practitioner.

Literature related to Effective Care

Fish and McKenzie (1982) investigated whether physicians and NPs deliver comparable care. They researched two groups of patients with hypertension, one group receiving care at a NP-managed clinic, the other at a medical clinic. Records for the 40 subjects in each group were evaluated at the time of their first clinic visit, and at clinic visits closest to 6, 12, and 15 months later. Data was collected on appointment scheduling, patient attendance (a measure of

compliance), weight, and resting mean diastolic blood pressure. The researchers found that no significant difference existed between the two groups in appointments kept or in drop-out rates. Statistical significance was found in the amount of patient weight loss ($p < 0.05$). Patients in the nurse practitioner group lost weight, while those in the physician group gained weight. Resting blood pressure after 12 months of care by the NPs was significantly lower than that of patients in the physician group ($p < 0.05$).

Similarly, Joyner, Miller, Runyan, and Zwaag (1980) found that NPs improved health outcomes in clients with diabetes mellitus and comorbid chronic disease. Researchers gathered data over a seven-year observation period to assess the effects of utilizing NPs to decentralize health care for this complex patient population. A sample of 556 clients with diabetes was drawn from the clinic's population of clients with chronic diseases. Laboratory data such as serum glucose, urea nitrogen, and serum potassium were recorded, as well as information regarding mean diastolic blood pressure (MDBP), number of ambulatory care visits, days of hospitalization, and deaths. Despite seven years of the normal aging process and deterioration due to the disease progression, patient outcomes were unchanged or significantly improved as compared to the year before treatment by the NPs. Serum glucose either decreased or remained unchanged. Potassium level was unchanged. Renal function, as measured by urea nitrogen, was not increased.

Eighty-two percent of clients had urea nitrogen levels $\leq$ 22 mg /dl. Average MDBP $\leq$ 85 mm / Hg with only four percent of clients' MDBP $\geq$ 105 mm / Hg, as compared to a pre-trial measurement of MDBP $\leq$ 93.1 mm /Hg and 18% of patients with MDBP $\geq$ 105. In the seventh year of observation, hospital utilization totaled 1955 days / 1000 patients, compared to a pre-trial annual total of 4809 days / 1000 patients. During the entire seven year period, mean hospital utilization equaled 2282 days / 1000 patients, or a 47% reduction during the trial period. While the annual rate of ambulatory care visits rose by nine percent over the course of the study, emergency room visits were decreased by 75%.

The literature reflects the NP's role in quality pediatric care as well. Goodman and Perrin (1978) researched the effectiveness of the NP, the medical resident and the pediatrician in regards to managing after-hours calls for pediatric patients. The investigators trained a non-professional woman to pose as the mother of children with a variety of symptoms representing common illnesses. She phoned participants of the study three to five times during after-hours call periods. Choosing professional participants and contrived illnesses at random, she made 141 calls, 19 to NPs, 53 to house officers, and 69 to pediatricians. These calls were taped and analyzed according to adequacy of history and appropriateness of disposition recommended, as compared to a theoretical correctness established by a panel of experts before the trial began. Data on length of phone call,

interviewing skill, and caller satisfaction was also recorded. Pediatric Nurse Practitioners (PNP) earned a greater score than the other groups in the area of history adequacy ($p > 0.001$). PNPs also scored higher on interviewing technique, were deemed to be warmer and more open to questions, terminated phone conversations more appropriately, and left the caller feeling more satisfied than did the other groups ($p > 0.001$).

In another study reflecting competent pediatric care by NPs, Bell, Paneth, and Stein (1979) studied emergency room (ER) utilization patterns during the first 15 months of life. Two hundred infants born at a large inner-city hospital were randomized to two equal groups. The control group received no intervention and was observed through chart reviews and local hospital records review. The experimental group was offered access to a PNP-managed clinic available weekdays from 9 AM to 5 PM for walk-in care or call-in advice. Fifty-five families accepted the offer. Data was collected regarding total number of ER visits and the time and day of the week these encounters occurred. Newborns in the control group averaged 3.64 total ER visits versus an average of 2.61 ER visits for children in the experimental group, a difference of 28% ($\alpha = 0.074$). When comparing PNP patients to medical clinic patients, ER visits occurred 54% less in the PNP group ($p > 0.001$).

Literature Related to Community Acceptance of Nurse Practitioners

Wide acceptance of a broad role for the nurse practitioner is reflected in the literature. Kviz, Misner, and Vinson studied the acceptance of the nurse practitioner role in a rural population. They surveyed 3056 households from 30 midwest counties. Subject selection was based on telephone directories and resulted in approximately 100 completed questionnaires from each county. The Kviz Acceptance Questionnaire consists of 12 functions within the nurse practitioner role. Respondents answered yes or no to whether they would be willing to allow a nurse practitioner to perform these functions. An accompanying data sheet requested information regarding the usual source of health care, type of primary care provider seen, location of that provider, satisfaction with health care, frequency of visits to a primary care provider, and perceived health status. At least 50% of those surveyed said they would allow the nurse practitioner to perform 10 of the 12 functions with exceptions being prescribing medication and treating minor illness/injury (45.4%), and performing complete routine physicals (43.8%). A small portion of the sample (0.6%) would not allow the nurse practitioner to perform any function, while 21.1% would allow the nurse practitioner to perform all functions listed. Acceptance of the nurse practitioner role was found to be greater (72-98%) for functions considered traditional nursing roles, such as recording health history and taking routine measurements like vital signs, as

compared to acceptance of nontraditional role functions (43-69%) like prescribing medication and performing minor surgery.

Hill and Wiseman (1994) used the Kviz Acceptance Questionnaire to study a rural community in Mississippi. They randomly selected 300 non-business households using a telephone directory, generating a return of 23% (n = 71). In this more current study, the researchers found that 50% said they would allow the nurse practitioner to perform all 12 functions. Rural consumer acceptance of the nurse practitioner role was recorded at 56.4%, with 90-97% acceptance of traditional role functions and 70-87% acceptance of nontraditional functions.

Cheyovich and Lewis (1976) examined the impact of nurse practitioner care on patients at a Veteran's Administration (VA) Outpatient Clinic. Participants were chosen according to the following criteria: the patient was known to the VA physician and had been evaluated by them, the patient had not been hospitalized within the last year, and the patient was considered "acceptable" or "possibly acceptable" by both the nurse practitioner and the physician (Cheyovich and Lewis, 1976, p. 367). Two Master's-prepared nurses with extensive experience in ambulatory care attended a six week nurse practitioner training program. Patients were grouped as to referring physician and primary diagnosis, and randomly assigned to one of two nurse practitioners. Interviews were conducted and encounter forms completed by the nurse practitioner at the

time of the initial visit. This process was repeated one year later. Participants were asked "Who would you want to perform each of the following for you? A physician, a nurse, or either?" (Cheyovich and Lewis, 1976, p. 369). Participants were then presented with a list of 10 functions, much like the Kviz Acceptance Questionnaire. Results showed that a shift in preference to the nurse practitioner occurred between the pre- and post-tests on items such as "explain tests" ($p < 0.01$), and "explain what's wrong", " prescribe medications", and "explain how to take medications" ($p < 0.05$) (Cheyovich and Lewis, 1976, p. 369).

Armer (1994) examined consumers' acceptance of the nurse practitioner role in relation to the perceived health care crisis. The Media Research Bureau conducted 500 telephone interviews using portions of the Health Opinion Questionnaire, with items relating to satisfaction with their last physician or nurse practitioner encounter, and recording responses to proposed expanded nursing roles. Seventy percent to 94% responded favorably to examples of expanded nursing practice such as management of follow-up and chronic conditions.

Consumer Satisfaction with Nurse Practitioners

Consumer satisfaction with care provided by nurse practitioners is well documented. Brodie, Levine, Lohr, Orr, and Sheatsley (1978) evaluated the patients' perceptions of nurse practitioner performance. The consumer perception phase of the study sampled clients of nurse practitioners and physicians in Virginia

and a Philadelphia metropolitan area. Fifteen hundred questionnaires specific to adult patients and to parents of pediatric patients were mailed with a response rate of about 46% (n = 701). Respondents answered questions regarding demographic data, and satisfaction with aspects of care such as "Nurse practitioner seemed rushed", "Nurse practitioner was easy to understand", " and "Feel more comfortable with an MD" (Brodie, Levine, Lohr, Orr, and Sheatsley, 1978 p. 253). Subjects were also asked to add any comments about their experience. In answering the questionnaire, patients related that the nurse practitioners did not appear rushed, were able to answer questions, were reassuring, and made the patient feel comfortable. In examining responses to the open-ended question, researchers found client comments to be favorable. Only 2.2% of adult clients and 5.3% of parents of pediatric clients offered negative comments. Most adults (61.1%) and parents of pediatric clients (59%) said they were pleased to see a nurse practitioner.

Examining client satisfaction in another setting, Borque-Nord and Stromborg (1979) studied consumer satisfaction with a cancer detection examination performed by a nurse practitioner as compared to that performed by a physician. They used a five point Likert-type scale to rank satisfaction from very highly satisfied to highly dissatisfied. A Chi square analysis showed no significant difference whether the exam was performed by an nurse practitioner or a

physician. Regardless of the type of examiner, most patients indicated via an open-ended question that the exam was thorough (75%) and professional (69%). The nurse practitioner was seen by a significantly higher percentage of patients to be a caring individual who explained the procedures of the exam.

In surveying an elderly population, Ericson and Murphy (1995) assessed rural elder satisfaction with nurse practitioner services. A random sample of 60 elders was drawn from 200 seniors seen at a rural nurse practitioner -managed clinic. Fifty-seven percent (n = 34) agreed to participate. Data were gathered at the elders' homes or at the local senior community center. Hour-long private interviews were conducted and data recorded concerning sociodemographic information, health status, health perceptions, health service utilization and satisfaction with services. Most seniors sampled were in good to excellent health. They perceived their health to be better than others their age and reported that their health had status had not changed over the past year. Elders rated satisfaction with health services offered by nurse practitioners from one to three, dissatisfied to satisfied. Researchers found elder satisfaction with nurse practitioner care very high ($x = 2.91$, $SD = 0.3$).

Linn (1976) also studied patient acceptance of the nurse practitioner. Primary care sites in Southern California were selected because they employed recent graduates from a University of California at Los Angeles four and one-half

month nurse practitioner training course. Patients were approached upon entry to the sites and asked to participate in the study. Patient encounters (n = 1912) during one five-day work week yielded an 87% questionnaire return rate (n = 1667). Respondents completed a Patient Evaluation of Care Questionnaire, asking about patient perceptions of care received, whether from a nurse practitioner or physician, or both. Regardless of type of provider seen, client ratings were not significantly different on a General Satisfaction Index ($t = 1.03$, $df = 1044$, $p < .305$) or an Index of Rapport ($t = 1.29$, $df = 1367$, $p < .196$).

Literature Related to Effective Care and Consumer Satisfaction

Gent, et al. (1974) conducted a large randomized trial of the nurse practitioner, studying both effectiveness of care and patient satisfaction in Canada. Two family practice physicians, whose practice was saturated, recruited two nurse practitioners to study the effect of substituting nurse practitioners for physicians in primary care. Researchers identified 1598 families (representing 4325 people) with ongoing medical relationships, defined by contact with one family member in past 18 months, then assigned these families to either the nurse practitioner group or the physician group. Patients were sent a letter explaining the study and their assigned care provider, with the disclaimer that anyone could choose to not participate. A sample was constructed of 817 families, with 296 allocated to the

nurse practitioner group and 521 allocated to the physician group. Quality of care was based on identifying and assessing the manner in which nurse practitioners managed a series of 10 indicator conditions and on the evaluation of prescribing behaviors for 13 common medications. At the end of the experimental period, household surveys were repeated and questions regarding social and emotional function were added.

Patients in both groups began the trial period with highly similar values for physical function, ability to perform activities of daily living, and freedom from bed disability. Baseline health status was not significantly different ($\alpha = 0.05$) between groups. Episodes of care numbering 392 were evaluated for appropriateness of management. Sixty-six per cent of episodes in the physician group and 69% in the nurse practitioner group were considered adequate - not a significant difference ($\alpha = 0.05$). Five hundred, ten prescriptions were analyzed with data showing 75% adequate in the physician group and 71% in the nurse practitioner group, again, not a significant difference ($\alpha = 0.05$). Results for indicators such as social and emotional function and patient satisfaction were not significantly different ($\alpha = 0.05$). This previously saturated practice grew to 1952 active families, a net increase of 22% after one year, and to 2256 families or a net increase of 41% after two years.

Literature Related to Community Knowledge of the Nurse Practitioner Role

A thorough search of CINAHL and MEDLINE reveals no study that examined the consumer's knowledge of the role of the nurse practitioner. Many tested perceptions, satisfaction, or acceptance, but none were designed to elicit knowledge specifically.

Summary

Both the nursing and medical research literature verify the effectiveness of the NP in various settings, the community's favorable acceptance of a broad NP role, and the consumers' satisfaction in care received from a NP. However, the majority of literature reviewed was conducted in the 1970s, before NPs were required to earn graduate degrees and before legislation was widely passed to allow prescriptive authority and third party reimbursement. Most studies were done with either small samples of primary care providers or a small number of respondents. With few exceptions, research has been quantitative in nature.

Chapter 3: Methodology

Design

The purpose of this study was to examine a southeastern community's knowledge, attitudes and beliefs regarding the role of the nurse practitioner. The research design was a descriptive quantitative one which had as its purpose to answer the following questions:

1. What knowledge does the consumer hold about the role of the nurse practitioner?

2. What are the attitudes, intention, and beliefs of consumers toward nurse practitioners?

3. Is there a relationship between consumer knowledge, attitudes, intention and beliefs based on consumer age, gender, ethnicity, educational level, profession, type of insurance, frequency of visits to the primary care provider, and consumer exposure to NPs?

4. Is there a difference between consumer knowledge, attitudes, intention and beliefs toward nurse practitioners based on urban or rural setting?

Sample

A minimum of 100 subjects was anticipated for this study. A table of random numbers was utilized to select 50 pages from the BellSouth July 1996 Chattanooga area phone book. The areas identified included Chattanooga, Soddy-

Daisy, Hixson, East Ridge, and Ooltewah, Tennessee. From these 50 pages, a sample of 500 individuals were identified using the same random number table. The sample of 500 individual consumers was supplemented with 50 additional names to allow for remailing of questionnaires to other individuals which may be returned for various reasons. A table of random numbers was then utilized to select 25 pages from the BellSouth 1996 Dayton Tennessee area phone book. Areas sampled included Spring City, Watts, Evensville, and Grandview, Tennessee. From these 25 pages, a sample of 500 individuals were identified using the same random number table. The sample of 500 individual consumers was supplemented with 50 additional names to allow for remailing of questionnaires to other individuals which may be returned for various reasons.

Limitations

The following were the limitations of this study:

1. Only persons listed in the phone book were eligible to participate in this study.

2. One small geographic area was utilized for this study.

3. The sample was a convenience sample.

Procedure

Once permission had been granted by the University of Tennessee at Chattanooga human subjects committee (Appendix A), questionnaire packets were

mailed to prospective subjects. Questionnaire packets included a cover letter (Appendix B), a demographic data sheet entitled "What Do You Know and Think About Nurse Practitioners?" (Appendix C), the questionnaire entitled "Attitudes and Beliefs About Using Nurse Practitioners For Healthcare" (Appendix D), and a self addressed stamped return envelope. The data sheet and questionnaire were printed on colored paper, blue for rural subjects, and yellow for urban subjects. The cover letter had a brief explanation of the nature of the study and included the assurance of anonymity and confidentiality.

Subjects were asked to complete the questionnaire and return it within one week of receiving it. Two weeks after the original mailing, a reminder post card (Appendix E), was mailed which requested that participants who had not already done so complete and return the questionnaire. This post card was white with a blue and yellow striped border to draw attention to it by the subject for prompt reaction. Data collection for this study occurred between January 24, 1997 and February 28, 1997.

Protection of Human Subjects

Permission was solicited and received from the University of Tennessee at Chattanooga Human Subjects Committee (Appendix A). There were no risks to study participants. Anonymity and confidentiality were assured as participants were not known to the researcher. No identifying data was contained on the

questionnaire. Questionnaires were color coded for ease of rural versus urban identification. No information that could be traced back to the subjects was contained in the questionnaire or data collection tool. Completion and return of the questionnaire indicated consent from the subject to participate in the study.

Instrumentation

The demographic data collection tool entitled "What Do You Know and Think About Nurse Practitioners?" consisted of questions designed to obtain information regarding the subjects' age, gender, job title, education level, degree earned, and type of insurance. The healthcare section of the tool requested information regarding primary care received in the past 12 months, the use of a nurse practitioner, and exposure to media information regarding nurse practitioners. A knowledge section of the tool obtained information regarding what consumers knew about the tasks that nurse practitioners could perform. The Flesch-Kincade grade level (grade-school level) was computed at 3.89 on these sections. The Flesch reading ease was computed at 80.34. The higher the reading ease score, the greater the number of people who can easily understand the document.

No instrument to study attitudes, intention, and beliefs of consumers towards nurse practitioners was identified from literature review. A researcher generated tool entitled "Attitudes and Beliefs About Using a Nurse Practitioner for

Healthcare" was utilized for this study. Several Likert type attitude scales that conformed to the conceptual framework were examined by the researcher and adjusted to generate the statements utilized in the tool to obtain consumer attitudes, intention, behavioral beliefs, and normative beliefs concerning nurse practitioners.

The questionnaire entitled "Attitudes and Beliefs About Using Nurse Practitioners for Healthcare' consisted of 21 Likert type statements. Statement one on the questionnaire measured intention. The subjects were asked to respond to the statement, "I intend to use a nurse practitioner for my health care" on a scale between extremely likely and extremely unlikely.

Attitudes about the behavior, that is, using a nurse practitioner for health care were measured by statements two through four. Subjects marked answers to the statement, " I feel that using a nurse practitioner for healthcare is:" with responses ranging from extremely wise to extremely ill advised, extremely rewarding to extremely unrewarding, and from extremely safe to extremely unsafe.

Behavioral beliefs were measured by statements five through ten. Statement five reflected the consumer's belief that using a nurse practitioner for health care would put them at risk for not getting good care. Statements six, seven, eight and nine reflected the clients belief that using a nurse practitioner for

healthcare would result in their being made fun of by family, friends, coworkers, and spouse/girlfriend/boyfriend/children.

Statements 11 through 16 measured normative beliefs. The statements asked subjects to respond extremely likely to extremely unlikely to statements concerning the consumer's belief that certain referent persons thought the subject should use a nurse practitioner for healthcare. Referent persons included in general, people important to the subject, and specifically, family members, close friends, coworkers, spouse/girlfriend/boyfriend, and boss.

Motivation to comply was measured with statements 17 through 21. They asked the consumer to rate the likelihood of the statements, "Generally speaking, I will do what (referent persons) think I should do." Again, these referent persons include generally, people important to the subject, and specifically, family members, close friends, coworkers, spouse/girlfriend/boyfriend, and boss.

Data Analysis

Data were transferred to a data analysis worksheet for ease of computer program entry. Data were analyzed using descriptive statistics and frequencies to describe the sample and respond to the first two research questions. Sums were generated for knowledge, attitudes, normative beliefs, behavioral beliefs, and motivation to comply. These sums were used as interval level data for parametric analyses. Pearson correlation coefficient was used to identify if a relationship

existed between consumer knowledge, attitudes, intention, beliefs, and age. Spearman rank order correlation was used to identify if a relationship existed between knowledge, attitudes, intention, beliefs, gender and educational level. Chi Square was used to identify if a relationship existed between consumer knowledge, attitudes, intentions, beliefs, and race, profession, type of insurance, number of primary care visits over the last 12 months, whether a subject or their family had been treated by a nurse practitioner, and whether the subject had seen a nurse practitioner in the media. A one way Analysis of Variance (ANOVA) was used to answer the research question related to a difference in consumer knowledge, attitudes, intention, and beliefs based on rural and urban setting. The Statistical Package for the Social Sciences (SPSS) was used for data analysis.

Summary

This research study investigated the knowledge, attitudes, intention, and beliefs of consumers related to nurse practitioners. A minimum of 100 subjects was anticipated for this study. One thousand persons were invited to participate in this study, which represented urban and rural settings. A researcher generated tool was utilized to collect data regarding consumer knowledge, attitudes, intention, and beliefs. Descriptive statistics, frequencies, correlational tests and a one way ANOVA were utilized to describe the sample and respond to the research questions. Data were analyzed utilizing SPSS.

Chapter 4: Findings

Introduction

The purpose of this study was to determine a community's knowledge of, attitude and intention toward, and beliefs about the nurse practitioner. This study correlated knowledge, beliefs, intention and attitudes to demographic variables of age, gender, ethnicity, profession, educational level, the type of insurance, the number of times the consumer visited their primary care provider in the last 12 months, and whether the consumer had exposure to NPs. In addition, this study identified if a difference existed in consumer knowledge, attitudes, intention, and beliefs towards nurse practitioners based on urban or rural setting.

Description of the Sample

Two hundred two subjects responded to the questionnaire, a return rate of 20.2%. Most subjects were Caucasian females who lived in urban areas. Average age was 50. The majority of respondents had at least a high school diploma and held a college degree. Most were employed and had private health insurance. Most subjects had seen their primary care provider between zero and two times in the past 12 months. Exposure to NPs was minimal for this sample. The majority of subjects reported that they had not seen a nurse practitioner in the media, nor had they or their family been treated by a nurse practitioner (see Tables 1 through 4).

Table 1.

Frequencies for Sample Gender, Race, and Age

Variable	n	%
Gender		
Female	114	56.4
Male	88	43.6
Race		
White	181	89.6
Non-White	21	10.4
Age in years		
20-29	22	10.9
30-39	33	16.3
40-49	49	24.3
50-59	39	19.3
60-69	24	11.9
70-79	23	11.4
80-89	12	5.9

Table 2.

Frequencies for Sample Education, Degree and Job Title

Variable	n	%
Education		
<12 years	18	9.0
12 years	65	32.3
13-15 yrs	57	28.4
>=16 yrs	61	30.3
Degree		
None	14	14.6
Technical	22	22.9
Bachelor	41	42.7
> Bachelor	19	19.8
Job Title		
None	80	41.2
Non-Professional	61	31.4
Professional	53	27.3

Table 3.

Frequencies for Sample Setting, Insurance, and Number of Primary Care Visits in Last 12 Months

Variable	n	%
Setting		
Urban	113	55.9
Rural	89	44.1
Insurance		
None	1	0.5
Private	166	83.4
TennCare	18	9.0
Medicare	53	25.6
Primary Care Visits		
0-2	116	58.6
3-5	57	28.8
6-8	11	5.6
>8	18	7.0

Note. Insurance > 100% as some consumers had more than one type of insurance.

Table 4.

Frequencies for Sample Treatment by a NP and Media Exposure to NPs

Variable	yes n/%	no n/%
Treatment by NP	80/39.8	121/60.2
Media Exposure	98/39.6	103/59.9

Research Questions

The first research question asked "What knowledge does the consumer hold about the role of the nurse practitioner?" On the questionnaire "What Do You Think and Know About Nurse Practitioners," most subjects marked yes to NPs performing traditional nursing roles such as providing health counseling, taking health histories, giving children shots for measles or mumps, and providing health teaching. Most also marked yes to NPs performing non-traditional nursing roles such as diagnosing and treating minor illnesses or injury and performing physical examinations. Most respondents marked no or don't know to NPs performing non-traditional nursing roles such as prescribing medications, ordering and interpreting laboratory tests and x-rays, and performing Pap smears and prostate examinations. Twenty-six (12.8%) responded correctly to all ten statements (see Table 5).

Table 5.

Frequencies for Sample Knowledge of NP Role

Variable	Yes n/%	Don't Know n/%	No n/%
Give health counseling?	161/79.7	35/17.3	6/3.0
Get your health history?	173/85.6	26/12.9	3/1.5
Give children shots for measles, mumps, etc.?	176/87.1	24/11.9	2/1.0
Teach you how to take care of your health?	181/90.5	18/9.0	1/0.5
Diagnose and treat a minor illness and injury?	147/72.8	43/21.3	12/5.9
Do a physical exam?	105/52.2	52/25.9	44/21.9
Prescribe medicine?	50/24.9	64/31.8	87/43.3
Suture (sew up) minor cuts and open wounds?	108/53.5	60/29.7	34/16.8
Order and explain laboratory tests and x-rays?	85/42.3	68/33.8	48/23.9
Perform pap smears and prostate exams?	71/35.1	75/37.1	56/27.7

The second research question asked "What are the attitudes, intention, and beliefs of consumers toward nurse practitioners?" Most subjects stated that they were slightly likely to extremely likely to use a nurse practitioner for healthcare. Most felt that using a NP for healthcare was slightly to extremely wise, rewarding, and safe. Most stated that it was slightly unlikely to extremely unlikely that using a NP for healthcare would put them at risk for not getting good care, would result in their being made fun of by family, friends, and coworkers, or would have a negative effect on their relationship with their spouse, girlfriend, boyfriend, or children. More stated that it was slightly unlikely to extremely unlikely that using a NP for healthcare would restrict their healthcare options. Most stated that it was neither likely nor unlikely that most people important to them, most members of their family, their close friends, spouse, girlfriend, boyfriend, coworkers, or boss thought they should use a NP for their healthcare. More subjects reported that it was slightly unlikely to extremely unlikely that they would do what most members of their family and their close friends thought they should do. More said it was likely that they would do what their spouse, girlfriend, boyfriend, or children thought they should do. More respondents stated that it was neither likely nor unlikely that they would do what their coworkers and boss thought they should do (see Tables 6 through 10).

Table 6.

Frequencies for Intention to Use a NP for Healthcare

Variable	likely				unlikely		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
I intend to use a NP for my healthcare.	13/6.7	33/16.9	52/26.7	27/13.8	24/12.3	23/11.8	23/11.8

Table 7.

Frequencies for Attitudes Regarding Using NPs for Healthcare

Variable	wise				ill advised		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
I feel that using a NP for my healthcare is:	17/8.6	75/38.1	46/23.4	39/19.8	14/7.1	2/1.0	4/2.0

Table 7. Continued.

Frequencies for Attitudes Regarding Using NPs for Healthcare

Variable	rewarding				unrewarding		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
I feel that using a NP for my healthcare is:	17/8.7	56/28.6	40/20.4	69/35.2	5/2.6	4/2.0	5/2.6

Table 7. Continued.

Frequencies for Attitudes Regarding Using NPs for Healthcare

Variable	safe				unsafe		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
I feel that using a NP for my healthcare is:	25/12.7	92/46.7	26/13.2	32/16.2	13/6.6	5/2.5	4/2.0

Table 8.

Frequencies for Behavioral Beliefs Regarding Using NPs for Healthcare

Variable	likely				unlikely		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
I believe that using a NP for my healthcare will put me at risk for not getting good care	5/2.5	16/8.1	19/9.6	40/20.2	26/13.1	60/30.3	32/16.2
I believe that using a NP for my healthcare will result in my being made fun of by my family.	16/8.1	5/2.5	3/1.5	39/19.8	8/4.1	52/26.4	74/37.6

Table 8. Continued

Frequencies for Behavioral Beliefs Regarding Using NPs for Healthcare

Variable	likely				unlikely		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
I believe that using a NP for my healthcare will result in my being made fun of by my friends.	16/8.1	5/2.5	1/0.5	33/16.7	11/5.6	53/26.8	79/39.9
I believe that using a NP for my healthcare will result in my being made fun of by my coworkers.	16/8.2	5/2.6	1/0.5	41/21.1	9/4.6	44/22.7	78/40.2

Table 8. Continued

Frequencies for Behavioral Beliefs Regarding Using NPs for Healthcare

Variable	likely				unlikely		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
I believe that using a NP for my healthcare will have a negative effect on my relationship with my spouse or girlfriend or boyfriend or children.	18/9.2	12/6.2	4/2.1	40/20.5	13/6.7	32/16.4	76/39.0
I believe that using a NP for my healthcare will restrict my healthcare options.	8/4.1	26/13.4	26/13.4	44/22.7	18/9.3	38/19.6	34/17.5

Table 9.

Frequencies for Normative Beliefs Regarding Using NPs for Healthcare

Variable	likely				unlikely		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
Most people who are important to me think I should use a NP for my healthcare.	4/2.1	11/5.8	11/5.8	120/ 62.8	6/3.1	17/8.9	22/11.5
Most members of my family think I should use a NP for my healthcare.	3/1.6	9/4.7	13/6.8	119/ 62.0	12/6.3	16/8.3	20/10.4
My close friends think I should use a NP for my healthcare.	8/4.1	11/5.7	11/5.7	127/ 65.8	10/5.2	12/6.2	14/7.3

Table 9. Continued.

Frequencies for Normative Beliefs Regarding Using NPs for Healthcare

Variable	likely				unlikely		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
My coworkers think I should use a NP for my healthcare.	8/4.3	9/4.8	8/4.3	138/ 73.4	6/3.2	8/4.3	11/5.9
My spouse or girlfriend or boyfriend thinks I should use a NP for my healthcare.	3/1.6	10/5.2	12/6.3	127/ 66.5	10/5.2	13/6.8	16/8.4
My boss thinks I should use a NP for my healthcare.	8/4.3	5/2.7	2/1.1	147/ 79.5	6/3.2	6/3.2	11/5.9

Table 10.

Frequencies for Motivation to Comply With Referent Persons

Variable	likely				unlikely		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
Generally speaking, I will do what most members of my family think I should do.	11/5.7	24/12.4	27/13.9	50/25.8	21/10.8	33/17.0	28/14.4
Generally speaking, I will do what my close friends think I should do.	16/8.3	16/8.3	21/10.9	69/35.9	16/8.3	30/15.6	24/12.5
Generally speaking, I will do my coworkers think I should do.	19/10.1	7/3.7	11/5.8	87/46.0	13/6.9	25/13.2	27/14.3

Table 10. Continued

Frequencies for Motivation to Comply With Referent Persons

Variable	likely				unlikely		
	extremely	quite	slightly	neither	slightly	quite	extremely
	n/%	n/%	n/%	n/%	n/%	n/%	n/%
Generally speaking, I will do what my spouse or girlfriend or boyfriend or children think I should do.	9/4.7	36/18.7	28/14.5	55/28.5	11/5.7	25/13.0	29/15.0
Generally speaking, I will do my boss thinks I should do.	4/2.1	7/3.7	15/7.9	87/46.0	11/5.8	24/12.7	41/21.7

The third research question asked "Is there a relationship between consumer knowledge, attitudes, intention and beliefs based on consumer age, gender, ethnicity, educational level, profession, type of insurance, frequency of visits to the primary care provider, and consumer exposure to NPs? The Pearson correlation coefficient was used to analyze the interval data of age, knowledge, intention, attitudes, behavioral and normative beliefs, and motivation to comply. The Spearman rank order was used to analyze the ordinal data of gender, race, education level and degree. Chi Square was used to identify if a relationship existed between consumer knowledge, attitudes, intentions, beliefs, and race, profession, type of insurance, number of primary care visits over the last 12 months, whether a subject or their family had been treated by a nurse practitioner, and whether the subject had seen a nurse practitioner in the media. An alpha level of .05 was used for all statistical tests.

Significant relationships were found between the variables of age and knowledge of the role of the NP, between gender and behavioral beliefs, and between gender and motivation to comply. A negative correlation was found between age and knowledge, with younger subjects having higher knowledge scores. A positive correlation was found between gender and motivation to comply, with males having higher motivation to comply scores than females. A positive correlation was found between gender and behavioral beliefs, with males

having higher negative behavioral belief scores than women. A negative correlation between age and intention (p=.052) and between age and normative beliefs (p=.056) approached significance, with younger subjects scoring higher on intention and normative beliefs than older subjects (see Table 11). A correlation between gender and knowledge approached significance (p=.056), with females scoring higher on the knowledge section than did males (see Table 12). A significant correlation was found between a subject's having been treated by a NP and that subject's intention and attitudes.. A correlation between having been treated by a NP and knowledge of the NP role approached significance (p=.056). A significant relationship was found between media exposure to NPs and knowledge, intention, attitudes, and behavioral beliefs. Race, education level, degree, job title, number of primary care visits in the past 12 months, and insurance type showed no effect on knowledge, intention, attitudes, behavioral beliefs, normative beliefs, or motivation to comply.

Table 11.

Pearson Correlation Coefficient for Age

Variable	Age		
	r	n	sig
Knowledge	-.1767	202	.012*
Intention	-.1395	195	.052
Attitudes	-.0002	199	.998
Behavioral Beliefs	.0280	201	.693
Normative Beliefs	-.1377	194	.056
Motivation to Comply	-.0534	195	.495

*$p<.05$

Table 12.

Spearman Rank Order for Gender

Variable	Gender		
	r	n	sig
Knowledge	-.1346	202	.056
Intention	-.1189	195	.098
Attitudes	-.1165	199	.101
Behavioral Beliefs	.1849	201	.009*
Normative Beliefs	-.0961	194	.182
Motivation to Comply	.1786	195	.013*

*$p<.05$

The fourth research question asked, "Is there a difference between consumer knowledge, attitudes, intention and beliefs toward nurse practitioners based on urban or rural setting?" Using a one-way analysis of variance, a significant difference ($F=4.440$, $df=1$, $p=.036$) existed in behavioral beliefs based on rural and urban settings. The mean behavioral belief sum score was higher in the subjects living in urban areas ($M=17.72$) than in the subjects living in rural areas ($M=15.52$). No other significant differences in knowledge, intention, attitudes, normative beliefs, or motivation to comply were found based on rural and urban settings.

Summary of the Findings

While most subjects knew that NPs perform traditional nursing roles, only 26 said NPs could perform all functions listed. The majority of respondents did not know that NPs precribe medications, order and interpret laboratory tests and x-rays, and perform Pap smears and prostate examinations. Most subjects held positive attitudes, intention, and behavioral beliefs regarding NPs.

Significant correlations were found between age and knowledge of the NP role. Relationships between age and intention and age and normative beliefs approached significance. Gender was found to be significantly correlated with behavioral beliefs and motivation to comply. The relationship between gender and knowledge approached significance. A significant correlation was found between a

subject's having been treated by a NP and that subject's intention and attitudes regarding NPs. A correlation between having been treated by a NP and knowledge of the NP role approached significance. A significant relationship was found between media exposure to NPs and knowledge, intention, attitudes, and behavioral beliefs. No other significant correlations were found.

A difference exists in behavioral beliefs based on rural and urban setting. Mean summed negative behavioral beliefs regarding the role of the NP were significantly higher in urban subjects than in rural subjects. No other significant differences were found in attitudes, intention, or normative beliefs based on urban or rural setting.

Chapter 5: Discussion, Conclusions, and Implications

Introduction

The purpose of this study was to determine a community's knowledge of, attitude and intention toward, and beliefs about the nurse practitioner. This study correlated knowledge, beliefs, intention and attitudes to demographic variables of age, gender, ethnicity, profession, educational level, and type of insurance, the number of times the consumer visited their primary care provider in the last 12 months, and whether the consumer had exposure to NPs. In addition, this study identified if a difference existed in consumer knowledge, attitudes, intention, and beliefs towards nurse practitioners based on urban or rural setting.

Limitations

Because this study utilized a convenience sample from a small geographical area, results can not be generalized to the larger population of healthcare consumers. Only persons listed in the phone book were eligible to participate in this study. Upon data collection and analysis, certain characteristics of the sample were found to be limitations. For example, on the questionnaire, "Attitudes and Beliefs About NPs," forced answer statements did not allow for those respondents with no coworker, boss, or family. As many of the respondents were retired and elderly, this consideration might have effected scores on the behavioral beliefs, normative beliefs, and motivation to comply portions of the questionnaire.

Discussion of Findings and Correlation to Previous Research

In examining the data analysis, one can draw several conclusions. Analysis of data related to the first research question revealed a knowledge deficit in the community regarding the role of the nurse practitioner. Only 26 (12.8%) respondents knew that NPs perform all ten functions tested. Some subjects did not know NPs can perform traditional nursing roles. The majority of the population sampled did not know that NPs act in an advanced nursing role and can prescribe medication, order and interpret laboratory results and x-rays, and perform Pap smears and prostate examinations. If NPs are to become an integral part of primary care, NPs must educate the community regarding this expanded role.

Attitudes, intention, and beliefs of consumers were generally reported as positive. However, attitudes, intention and beliefs might be more widely positive if more consumers had a more complete understanding of what a NP can offer. For instance, a person who does not know that a NP can prescribe medications might feel that seeing a NP places him or her at risk for not getting good care, i.e. appropriate pharmacological therapy. When this person is educated about the role, these negative beliefs are dissipated and replaced by more positive beliefs, and therefore, the person is more likely to see a NP for his or her healthcare.

This data showed a negative relationship between age and knowledge, suggesting that younger consumers are more familiar with the role. The data also

revealed a relationship between gender and behavioral beliefs and gender and motivation to comply. Men are more likely to have negative behavioral beliefs and more likely to feel the motivation to comply with referent persons. A correlation between gender and knowledge approached significance, suggesting that women may have more knowledge regarding the role than do men. This may be based on the fact that women have been exposed to the advanced practice role of pediatric nurse practitioner or certified nurse midwife.

A significant correlation existed between a subject's having been treated by a nurse practitioner and that subject's intention, and attitudes. This implies that consumers who have seen NPs for healthcare intend to see the NP again and find seeing a NP safe, rewarding and wise. The correlation between having seen a NP and knowledge of the role only approached significance, suggesting that even consumers who have been treated by a NP do not have a full understanding of the role. NPs should educate each client on this expanded nursing role at every opportunity. Part of forming a partnership for healthcare with a client is informing him or her of what the NP can offer. This should be done on the initial visit and through waiting room brochures.

The data showed that media exposure to NPs affects knowledge, intention, attitudes, and behavioral beliefs. This suggests that the most effective way to educate the public, to increase their likelihood of using a NP for healthcare, to

foster more positive attitudes and behavioral beliefs regarding NPs is to increase media exposure. Locally, NPs can contact the community's news station and suggest stories involving NPs, they can write health promotion columns and editorials for the local newspaper, and they can participate in health fairs and community seminars. NPs can also employ these measures on a national level. Several national news programs request story suggestions through web sites or mailing addresses. NPs should actively pursue marketing opportunities to increase media exposure.

Finally, the data showed a difference between behavioral beliefs based on rural and urban setting. The urban behavioral belief score was significantly higher. This finding suggests that people in urban areas have more negative behavioral beliefs regarding NPs. Urban consumers are more likely to believe that using a NP for healthcare will put them at risk for not getting good care, will restrict their healthcare options, and will result in their being made fun of by referent persons. If NPs are to practice in urban as well as rural settings, NPs need to find a way to replace these negative behavioral beliefs with more positive ones. Again, consumer education is the only way to change consumer attitudes, intention, and beliefs.

The data collected in this study was consistent with published research. Kviz, Misner, and Vinson (1983) gathered approximately 100 surveys from each of

30 rural counties and studied acceptance of the NP role. They found that most consumers stated they would allow a NP to perform traditional nursing roles, but would not allow the NP to prescribe medication, treat a minor illness or injury, and perform complete physical exams. Hill and Wiseman (1994) replicated the Kviz, Misner and Vinson study in a rural Mississippi area generating a return of 23% (n=71). They found that half of the sample would allow a NP to perform all function listed, including non-traditional nursing roles. This study generated a response rate of 20% (n=202), tested knowledge of the role rather than acceptance of the role , but found conclusions parallel to the Kviz, Misner, and Vinson study.

Cheyovich and Lewis (1976) designed a study to determine if a difference existed in acceptance of the NP before being seen by a NP and after one year of treatment by a NP. The results showed a shift in preference to the NP after one year of being under a NP's care. Cheyovich and Lewis' research supports findings from this study that intention, attitudes, and behavioral beliefs are more positive in consumers who have been treated by a NP than in those who have not.

Discussion of Conceptual Framework for the Study

Concepts of Ajzen and Fishbein's theory were supported by this study. The data showed that a relationship exists between knowledge, intention, attitude, behavioral beliefs, and normative beliefs. Changing the magnitude or quality of

one measure, for example, knowledge, will affect the other measures of intention, attitude, behavioral beliefs, and normative beliefs.

Orem's self care deficit theory was used to support the concept of the NP role in healthcare, i.e., to provide care based on the client's self care deficit. The data reflects a community wide knowledge deficit related to its options for healthcare, in this case, its option to use NPs for healthcare. Therefore, the community cannot fulfill its self care agency potential, and a community wide self care deficit exists. In providing care for the community, the NP should intervene to resolve this self care deficit through education about the NP role.

Conclusions

While most subjects knew that NPs perform traditional nursing roles, few were aware of the full scope of NP function. The majority of respondents did not know that NPs could prescribe medications, order and interpret laboratory tests and x-rays, and perform Pap smears and prostate examinations. Most subjects held positive attitudes, and would utilized the services of NPs.

Older consumers were least likely to utilize the services of NPs possibly due to their orientation to traditional nurse/physician roles. Younger consumer use of NPs may assist in orientation of their children to the NP role and increased use over time. Men were least likely to use NPs. NP services would be solicited more by women and children. This could affect consumer education.

NPs project a positive image. Use of NPs was found to be higher in persons who had utilized NP services in the past. Consumers are heavily influenced regarding the role of the NP through media exposure.

To foster more positive attitudes and beliefs about NPs and increase consumer use of NPs, community education is important. Media exposure is an effective means by which to accomplish this.

Implications for Nursing Education

This study has implications for nursing education. Nurse practitioner programs should incorporate education regarding marketing strategies for advanced practice nurses. Marketing skills could be incorporated into leadership, role theory, or management courses. NP education should include gender specific and developmental learning theories to arm NPs with the skills to educate men, women, and children both about the NP role and about clients' health management. As women are more knowledgeable about the role than men, gender specific teaching strategies could reinforce women's knowledge and increase men's knowledge of the role of the NP.

Implications for Nursing Practice

In their daily practice, NPs should educate every client about their role. They should provide waiting room brochures explaining the NPs educational preparation, role and philosophy of care. Patients should know that NPs are now

required to earn a master's degree, and have generally completed seven years of post secondary education. Clients should be taught that NPs provide complete physical examinations, including Pap smears and prostate examinations, order appropriate laboratory tests and x-rays, prescribe medication, and provide thorough health counseling and education, and refer to a physician or specialist when necessary. Patients should also be aware of the NP's philosophy of care (i.e., NPs' emphasis on establishing a nurse-client partnership for care, and emphasis on disease prevention and health promotion).

Implications for Nursing Research

This study raises new research questions. Do attitudes, intentions, and beliefs differ on the basis of client's perceived health status and their medical diagnoses? For example, is there a difference in a clients intention to use a NP for healthcare based on the complexity or severity of their medical condition?

This study should be replicated under different conditions (i.e., in populations with varying demographic attributes or with a larger sample). One could design a community wide education seminar or media event and repeat this study post intervention. One might test a sample of clients before their first encounter with a NP and again after treatment by a NP.

Summary

The conclusions reveal a community wide knowledge deficit regarding the role of the NP. Data supports the concepts of Orem's self care deficit theory and Ajzen and Fishbein's model. This study has implications for NP education, practice and research.

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Appendix A

RESEARCH PROTOCOL FOR REVIEW BY UTC HUMAN SUBJECTS COMMITTEE

Project Director: Susan Robinson, RN, BSN Dept.: Nursing
Co-Director: Dr. Maria A. Smith Dept.: Nursing

Address and Phone Number of Project Director and Co-Director: (for student projects, list both student and advisor)

Student: Susan Robinson; 2316 N. Shoreacres Road; Soddy Daisy, TN; 37379; 423/332-0730

Advisor: Dr. Maria A. Smith; UTC School of Nursing; 615 McCallie Avenue; Chattanooga, TN 37403; (615) 755-4654

Title of Project: A Southeastern Community's Knowledge, Attitudes and Beliefs Regarding The Role of the Nurse Practitioner

Estimated Starting Date and Completion Date: December 1, 1996 to March 1, 1997

I. Objective(s) of Project:

To answer the following questions:
1. What are the attitudes and beliefs of consumers toward nurse practitioners?
2. Is there a relationship between consumer attitudes and beliefs based on age, gender, ethnicity, educational level, profession, marital status, and type of insurance?
3. Is there a difference in consumer attitudes and beliefs toward nurse practitioners based on urban or rural setting?

II. Subjects (selection method, populations, description):

A sample of 100 male and female subjects will be utilized for the study from a mailing to 400 Rhea and Hamilton County residents randomly selected using a table of random numbers. The random sample will be selected from the 1996 Dayton telephone book which includes Spring City and the Hamilton County/Chattanooga telephone book.

III. Methods or Procedures (attach copy of data gathering instruments and proposed consent form):

The procedure utilized to obtain data will entail an introductory letter and researcher developed tool on attitudes and beliefs toward use of a nurse practitioner for healthcare. The tool was fashioned after other tools which utilized the Fishbein/Ajzen framework of attitude and relationship. The three page tool developed contains a demographic data sheet which will also obtain the respondents general knowledge of nurse practitioners. A seven point Likert scale has been developed to obtain attitudes and beliefs. The returned survey will signify the respondents' consent to be a subject in the study. A follow up postcard will be sent to either encourage response or thank the respondents.

IV. School of Nursing Thesis Committee Decisions and Comments:

Signatures:

[redacted]
Investigator Date

Approved by School of Nursing Thesis Committee

[redacted]
MSN Program Coordinator Date

[redacted]
Chair, Thesis Committee Date

[redacted]
Director, School of Nursing Date

[redacted]
Chair, UTC Human Subjects Committee Date

Appendix B

Cover Letter

Dear Sir or Madam:

I am a graduate student at the University of Tennessee at Chattanooga, School of Nursing, and I am conducting a study on attitudes and beliefs about nurse practitioners and their role in health care. This research fulfills a requirement necessary to complete a Master of Science in Nursing degree. Please help me in this effort by taking a few minutes of your time to share your views on this subject with me.

Your completed questionnaire will serve as your permission to be a subject in the study. Your privacy will be maintained since no identifying data appears on the forms you complete. Your response is valuable to my study and may help influence future health care programs. If you decide to participate, please return the questionnaire in the enclosed envelope.

Thank you for your time and support.

Sincerely,

Susan R. Robinson, RN, BSN

Appendix C

What Do You Know and Think About Nurse Practitioners?

Please complete the following:

1. Age: _____
2. Sex: _____
3. Race [check only one]: ___Caucasian ___African American ___Hispanic American
   ___American Indian ____other/specify_____
3. Job title: _____
4. Highest grade completed in school: (please mark (X) one)

   elementary school 1 2 3 4 5 6

   junior high school 7 8 9

   high school 10 11 12

   college 13 14 15 16 17 18 degree earned_____

5. What kind of insurance do you have? ___Private ___Tenncare ___Medicare
6. How many times in the past 12 months have you seen your primary care provider?____
7. Have you or a family member been seen by a Nurse Practitioner? ___Yes ___No
8. Have you ever seen a Nurse Practitioner on TV or in a magazine? ___Yes ___No

9. Can a Nurse Practitioner do the following? Please mark (X) 'yes', 'no' or 'don't know' for each.

A. Diagnose and treat a minor illness and injury?	Yes	No	Don't know
B. Give health counseling?	Yes	No	Don't know
C. Get your health history?	Yes	No	Don't know
D. Do a physical exam?	Yes	No	Don't know
E. Give children shots for measles, mumps, etc.?	Yes	No	Don't know
F. Teach you how to take care of your health?	Yes	No	Don't know
G. Prescribe medicine?	Yes	No	Don't know
H. Suture (sew up) minor cuts and open wounds?	Yes	No	Don't know
I. Order and explain laboratory tests and x-rays?	Yes	No	Don't know
J. Perform pap smears and prostate exams?	Yes	No	Don't know

Attitudes and Beliefs About Using Nurse Practitioners For Healthcare

General Instructions:
In this questionnaire you are about to fill out, we ask questions that use a scale with 7 places.
You are to place an X in the space that best describes your opinion.

For example, if you are asked to rate 'The weather in Chattanooga' and you think that it is extremely good, then you would place your mark as follows:

1. The weather in Chattanooga is:	extremely good	quite good	slightly good	neither	slightly bad	quite bad	extremely bad

==========

Would you please answer each statement like the example in the general instructions above. There are no right or wrong answers.
Simply place an X in the space that best describes your opinion.

The following definition of healthcare will help you answer the questions. Healthcare is defined as activities that promote health and wellness such as yearly check-ups, flu shots, childhood shots and seeing someone when you have a cold or the flu.

1. I intend to use a nurse practitioner for my healthcare.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely
2. I feel that using a nurse practitioner for healthcare is:	extremely wise	quite wise	slightly wise	neither	slightly ill advised	quite ill advised	extremely ill advised
3. I feel that using a nurse practitioner for healthcare is:	extremely rewarding	quite rewarding	slightly rewarding	neither	slightly unrewarding	quite unrewarding	extremely unrewarding
4. I feel that using a nurse practitioner for healthcare is:	extremely safe	quite safe	slightly safe	neither	slightly unsafe	quite unsafe	extremely unsafe
5. I believe that using a nurse practitioner for healthcare will put me at risk for not getting good care.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely
6. I believe that using a nurse practitioner for healthcare will result in my being made fun of by my family.	extremely unlikely	quite unlikely	slightly unlikely	neither	slightly likely	quite likely	extremely likely
7. I believe that using a nurse practitioner for healthcare will result in my being made fun of by my friends.	extremely unlikely	quite unlikely	slightly unlikely	neither	slightly likely	quite likely	extremely likely
8. I believe that using a nurse practitioner for healthcare will result in my being made fun of by my coworkers.	extremely unlikely	quite unlikely	slightly unlikely	neither	slightly likely	quite likely	extremely likely

9. I believe that using a nurse practitioner for healthcare will have a negative effect on my relationship with my spouse or girlfriend or boyfriend or children.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely
10. I believe that using a nurse practitioner for healthcare will restrict my healthcare options.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely
11. Most people who are important to me think I should use a nurse practitioner for my healthcare.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely
12. Most members of my family think I should use a nurse practitioner for my healthcare.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely
13. My close friends think I should use a nurse practitioner for my healthcare.	extremely unlikely	quite unlikely	slightly unlikely	neither	slightly likely	quite likely	extremely likely
14. My coworkers think I should use a nurse practitioner for my healthcare.	extremely unlikely	quite unlikely	slightly unlikely	neither	slightly likely	quite likely	extremely likely
15. My spouse or girlfriend or boyfriend thinks I should use a nurse practitioner for my healthcare.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely
16. My boss thinks I should use a nurse practitioner for my healthcare.	extremely unlikely	quite unlikely	slightly unlikely	neither	slightly likely	quite likely	extremely likely
17. Generally speaking, I will do what most members of my family think I should do.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely
18. Generally speaking, I will do what my close friends think I should do.	extremely unlikely	quite unlikely	slightly unlikely	neither	slightly likely	quite likely	extremely likely
19. Generally speaking, I will do what my coworkers think I should do.	extremely unlikely	quite unlikely	slightly unlikely	neither	slightly likely	quite likely	extremely likely
20. Generally speaking, I will do what my spouse or girlfriend or boyfriend or children think I should do.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely
21. Generally speaking, I will do what my boss thinks I should do.	extremely likely	quite likely	slightly likely	neither	slightly unlikely	quite unlikely	extremely unlikely

Appendix E

Postcard

Dear Sir or Madam:

Thank you for your recent support in responding to the (color) survey, "What Do You Know and Think About Nurse Practitioners?" and "Attitudes and Beliefs About Using Nurse Practitioners for Healthcare." Your input is valuable to my study and I appreciate your time and support.

Sincerely,

Susan R. Robinson, RN, BSN

Vitae

Susan Renee Robinson was born in Pensacola, Florida in 1968. She graduated from Woodham High School in 1986. She attended the University of Florida in Gainesville, where she became a member of Sigma Theta Tau and earned a bachelor of science in nursing, graduating with high honors in 1991. She practiced as a registered nurse for five years in cardiac and medical intensive care and as a home health case manager and staff educator. In 1996, she became a member of Chattanooga Area Nurses in Advanced Practice and was named to Who's Who Among American Graduate Students 1996. In 1997, she completed a master of science in nursing at The University of Tennessee at Chattanooga. Ms. Robinson currently lives in the Chattanooga area.