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Health access, health status, and health attitudes: Predicting willingness to use advanced practice nurses.

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HEALTH ACCESS, HEALTH STATUS, AND HEALTH ATTITUDES: PREDICTING WILLINGNESS TO USE ADVANCED PRACTICE NURSES

by

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A DISSERTATION

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ABSTRACT OF DISSERTATION
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Athough the role of the advanced practice nurse is still relatively new, there is a growing body of research literature regarding the specialty's impact on health care delivery. These health care providers have the potential to be a viable alternative to traditional methods of providing health care to a variety of patients.

The purposes of this study were to: (a) identify the relationship between health care access and willingness to use advanced practice nurses; (b) identify the relationship between health care status and willingness to use advanced practice nurses; (c) identify the relationship between the demographic variables of age, race, gender, and socioeconomic variables and willingness to use advanced practice nurses; and (d) identify the relationship between attitudes toward health and willingness to use advanced practice nurses.

A correlational design was used to explore the relationship between variables. A reliability measure of .95 was achieved. Validity was achieved through a test-retest pilot study.

The findings of this study indicated that predictors of willingness to use advanced practice nurses were lack of high school education, receipt of Medicaid, purchase of food stamps, and expressed agreement with negative health attitudes. The diagnosis of emphysema and the presence of health limitations were also predictive of willingness to use advanced practice nurses. The failure to obtain screening breast exams and mammograms were predictors of women and their willingness to use advanced practice nurses. Health insurance and lack of health insurance were predictive of willingness to use advanced practice nruses.

Abstract Approved by: Committee Chairman [signature]

Program Director [signature]

Date 9/27/96 Dean of Graduate School [signature]

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TABLE OF CONTENTS

		Page
ABSTRACT		iii
ACKNOWLEDGEMENTS		v
LIST OF TABLES		ix
LIST OF FIGURES		xi
CHAPTER		
I	Introduction	1
	Statement of the Purpose	17
	Research Questions	17
	Theoretical Framework	18
	Theory of Goal Attainment	18
	Aday and Andersen's Conceptual Model of Access	22
	Conceptual Model for Study	26
	Definitions of Terms	27
	Assumptions	30
	Significance of the Study	30
II	Review of Literature	32
	Demographic Variables Related to Health Care Access	33
	Health Attitudes Related to Health Care Access	37
	Health Status Related to Health Care Access	40
	Willingness to Use APNs Related to Health Care Access	40
	Conclusion	55
III	Methodology	57
	Method	58
	Subjects	58
	Instrumentation	59
	Procedure	61
	Analysis of Data	63
	Sample Size	65
	Limitations	69

TABLE OF CONTENTS (Continued)

CHAPTER		Page
IV	Findings	72
	Relationship Between Demographic Variables and Willingness to Use APNs	75
	Gender	75
	Marital Status	76
	Racial Background	76
	Level of Education	77
	Age	79
	Socioeconomic Variables	79
	Public and Private Health Insurance	82
	Relationship Between Access to Health Care and Willingness to Use APNs	87
	Presence or Absence of a Source of Usual Health Care	87
	Variables Associated With Source of Usual Health Care	88
	Satisfaction With Health Care	100
	Relationship Between Health Status and Willingness to Use APNs	101
	Health-Related Limitations	101
	Weight and Height	105
	Smoking	106
	Blood Pressure Checked During Past Year	106
	Physical Activity	106
	Relationship Between Attitudes About Health and Willingness to Use APNs	107
	General Attitudes About Health	107
	Pap Smear Tests, Breast Examinations, and Mammograms	112
	Relationship Between Whether Respondents Had Heard of APNs and Willingness to Use APNs	114
	Measurement of Willingness to Use APNs and Attitudes Toward Health	116
V	Discussion, Implications, Recommendations, and Conclusions	120
	Discussion	120
	Relationship to Conceptual Framework	120
	Relationship Between Demographic Variables and Willingness to Use APNs	122
	Relationship Between Health Status and Willingness to Use APNs	126
	Relationship Between Health Access and Willingness to Use APNs	127

TABLE OF CONTENTS (Continued)

Page

CHAPTER

V Discussion, Implications, Recommendations, and Conclusions (Continued)

Relationship Between Health Attitudes and Willingness to Use APNs 128
Implications 129
Recommendations 132
Conclusions 134

REFERENCES 136

APPENDIX

A Predicting the Willingness to Use APNs . . . 148

LIST OF TABLES

Table		Page
1	Mean Score for Willingness to Use Services of an APN Under Different Conditions	73
2	Willingness to Use APNs Under Different Conditions (Percent of Respondents)	74
3	Sample by Marital Status	76
4	Sample by Racial Background	77
5	Sample by Educational Level	78
6	Sample by Age	80
7	Sample by Medicare, Medicaid, and Any Other Public Assistance Program Insurance Coverage .	82
8	Source of Health Insurance Programs Possessed by Respondents Who Reported Coverage	85
9	Facilities Identified as the "Usual" Source of Health Care	89
10	Mode of Transportation Used to Get to "Usual" Source of Health Care	91
11	Appointment Requirements for Access to "Usual" Source of Health Care	93
12	Spearman Correlations Between Appointment Requirements and Respondents' Willingness to Use Services of an APN Under Different Conditions	94
13	Spearman Correlations Between Appointment Latency and Willingness to Use Services of an APN Under Different Conditions	96
14	Knowledge of "Usual" Source of Health Care Prior to First Use	97
15	Reasons for the Absence of a "Usual" Source of Health Care	100

LIST OF TABLES (Continued)

Table		Page
16	Self-Reported Ratings of Health	102
17	Self-Reported Health-Related Limitation of Physical Activity	102
18	Self-Reported Occurrence of Missing Work, School, or Scheduled Activities During the Past Year Because of Health	103
19	Spearman Correlations Between Presence or Absence of Health Related Limitations and Willingness to Use Services of an APN Under Different Conditions	103
20	Frequency Distributions of Serious Conditions Diagnosed by a Doctor	105
21	Respondents' Attitudes About Health (Percent of Respondents)	107
22	Percent of Women Who Had Received Pap Smear Tests, Breast Examinations, and Mammograms . .	112
23	Spearman Correlations Between Whether Females Had Received Breast Examinations and Mammograms and Willingness to Use Services of an APN Under Different Conditions	113
24	Spearman Correlations Between Whether Respondents Had Heard of APNs and Willingness to Use Services of an APN Under Different Conditions	115
25	Factor Pattern Matrix Resulting From the Principle Components Analysis of the 13 Items Used to Assess Overall Willingness to Use APNs	117
26	Factor Pattern Matrix Resulting From the Principle Components Analysis of the 10 Items Used to Assess Attitudes About Health .	118

LIST OF FIGURES

Figure		Page
1	Theory of goal attainment	20
2	Aday and Andersen's (1974) framework for the study of access	23
3	Franks' (1993) framework for study of access	28

CHAPTER I

Introduction

After some 75 years of debate over national health insurance policy, the United States is renewing its efforts to develop some type of national program for health care. Reform proposals are multiplying as state and federal officials look for ways to ensure health care access for more citizens, while controlling rising costs and ensuring quality of services provided. Indeed, never before in American history has such a consensus on the need for health care reform existed among government, business, and special interest groups.

This consensus has largely resulted from health care costs that continue to rise at an alarming rate, while an estimated 37 million Americans are without health insurance coverage (Aaron & Schwartz, 1990; Davis, 1991; Davis & Rowland, 1986; Greenberg, 1992; McDermott, 1994; Mitchell, Krueger, & Moody, 1990; Starr, 1992). It has been estimated that 36% of the uninsured in the United States are children (Aaron & Schwartz; Davis). An additional 17% of United States citizens are underinsured as a result of cost-sharing, gaps in coverage, and preexisting exclusion clauses (Bazzoli, 1986; Farley, 1985; Sulvetta & Swartz, 1986). In 1991, 25 million United States citizens were

seriously underinsured (Burgess & Stefos, 1991; Gleicher, 1991; Reis, Sherman, Macon, & Freidman, 1990). Many other Americans fear that, even though they have health insurance, they would be financially ruined if a serious injury befell them or a family member. An estimated 56 million Americans fall within this group (Friedman, 1990).

While health care access for Americans has diminished, at 14%, the United States spends a greater share of its Gross National Product (GNP) on medical care than any other nation (McDermott, 1994). If costs continue to rise at the current rate of 4% per year, after adjusting for inflation, spending could reach 15% of the GNP by the end of 1995 (Enthroven & Kronick, 1991) and would exceed 19% by the end of the decade (Barter, Graves, Phoon, & Corder, 1995; Forsythe & Willis, 1995). The health sector's share in other countries is substantially lower, for example, under 8% in Canada, under 6.5% in England, and under 6.5% in Japan (Fuchs, 1990; McDermott). By contrast, in 1993 Americans spent $900 billion on health care (Marmor & Mashaw, 1993; Smith, 1993).

Although a variety of cost containment measures have been instituted in the United States, including prospective payments for hospitals and physicians, coinsurance, and higher deductibles for consumers, the rise in costs is unabated. Davis (1992) stated that rationing, price controls, increased copayments, and higher deductibles are becoming a way of life for citizens in most developed nations of the world today.

While cost containment efforts have reduced the rate of increase for hospital expenditures, other health costs continue to rise. Health insurers are becoming alarmed at the size of health care bills and fear decreased profitability and economic failure if the trend continues. The rising cost in health care can be attributed to many factors, including but not limited to economic inflation, increased numbers of aged citizens, increased numbers of low birth weight neonates, increased development and use of high technology, inappropriate use of diagnostic and therapeutic procedures, and increased professional malpractice liability (Marquis & Buchanan, 1994; Pane & Taliaferro, 1994; Steinwachs, 1994; Wilensky, 1994). Heightened societal and personal expectations from an ever-increasing number of health care providers during the economic booms of the 1980s further compounded the worsening economic drain of paying for health care in the United States ("Wasted Health Care Dollars," 1992).

According to Curtin (1990), however, the economic boom of the 1980s was in reality not a boom at all. In the midst of economic inflation, the United States became a borrower nation, with a $6 trillion national and consumer debt. Curtin argued that, to counter this trend, Congress "must reduce the national debt, encourage consumer savings, increase productivity, and keep taxes low to avoid a depression" (p. 7). This must be accomplished at a time when an aging population has resulted in a steady increase in the number of Americans eligible for federally

subsidized medical services (Milulencak, 1993). In addition, the declining birth rate is eroding the tax payer base, which finances the Social Security System. In 1988, 12.4% of the population was older than 65 years of age, up from 4% in 1990, and the percentage of persons over 65 years of age is predicted to be 13.0% by the year 2000 and 22% by the year 2030 (Institute of Medicine, 1991). In 1990, the Social Security Board of Trustees predicted that, by the year 2005, Medicare hospital insurance trust funds would be exhausted (Friedman, 1990).

Also affecting the economic stability of our health care system is the decline in manufacturing jobs that traditionally provided full insurance benefits (Gimenez, 1989; Gordon-Bradshaw, 1987; Greenhouse, 1986; Navarro, 1989; Renner & Navarro, 1989). With extensive reductions in employer provided insurance programs, more Americans are being forced to seek the charitable or uncompensated care provided by public hospitals. These health providers, in turn, respond by shifting the cost of uncompensated care to those individuals who can afford to pay for services. Greenhouse (1993) stated that the nature of the U.S. insurance system is being challenged largely in response to increasing medical costs and employer demands.

Lack of insurance coverage and the ability to pay for services were recognized as significant barriers to health care access during the Kennedy and Johnson administrations of the 1960s. With the passage of Medicare and Medicaid bills in 1965, millions of poor and aged Americans were

able to access needed health care services. By 1988, of the 244 million American citizens covered, 13% were covered by Medicare, 6% were covered by Medicaid, 57% were covered through employer plans, and 9% were covered through individual private carriers, while 15% were uninsured (Davis, 1991). However, as a result of decreased federal support and increasing eligibility restrictions during the 1980s, less than 50% of individuals below the poverty level are now covered by Medicaid (Davis et al., 1987; Orr & Miller, 1981; Stevens, 1992; Walden, Wilensky, & Kaspar, 1985).

Employment no longer guarantees individuals health care access. Aaron and Schwartz (1990) stressed that the 15% of uninsured Americans are not victims of our welfare systems. Indeed, only 18% of the uninsured are unemployed (Curtin, 1990). Forty percent of uninsured adults work fulltime (Monheit, Hagan, Berk, & Farley, 1985). The remainder are Americans with one and two incomes from part-time or service jobs that provide no health insurance benefits. Jennings (1991) stated that three quarters of the uninsured are families of the working poor. Gimenez (1989) called this the "immiseration of the working class" (p. 7).

One component of health care access includes the availability of personnel and services. Our current health care system has been criticized for poor use of resources, particularly nurses (Aiken, 1982; Cleland, 1982; Fagin, 1981; Safriet, 1992). Nurses in advanced practice are

particularly underutilized (Brown, 1988; Mahoney, 1988; McGrath, 1990; Perrin & Goodman, 1978; Record, McCalley, Schweitzer, Blomquist, & Berger, 1980; Reinhardt, 1972, 1975; Salkever, Skinner, Steinwachs, & Katz, 1982; Spitzer, Sackett, Sibley, Roberts, & Techs, 1974). Advanced practice nurses (APNs) include nurse practitioners (NPs), certified nurse midwives (CNMs), clinical nurse specialists (CNSs), and certified registered nurse anesthetists (CRNAs). Ray and Hardin (1995) stated that, while CNMs' and CRNAs' roles traditionally have been practice specific, the role of CNSs and NPs have been more generic. The CNS practices primarily in acute care settings and the NP practices in the outpatient setting (Mirt, 1993). These health care providers are registered nurses who have completed advanced educational programs; have master's degrees, doctoral degrees, or both in nursing or certification and licensure by state boards of nursing; and have obtained clinical competencies beyond a basic nursing curricula, usually within a defined area of specialization (O'Malley, 1995). Forty percent of these health care providers are educated at the graduate level (Chavigny, 1993).

The concept of advanced practice nursing originated in the early 1960s in response to a shortage of primary care physicians and was intended to increase the accessibility and availability of health care services (Bullough, 1984). APNs now represent 10% of the 2.2 million nurses licensed to practice within the United States (American Nurses'

Association [ANA], 1993). During the 3 decades that followed efforts to formally establish the role of advanced practice nursing, research regarding nurses in advanced practice focused on the process of providing health care services and compared the care provided by the nurse to the care provided by physicians. Jacox (1987) reviewed the U.S. Congress, Office of Technology Assessment (1986) report on the use on nonphysician health care providers. She stated that this extensive review of research documented that the quality of care provided by APNs within their area of competence was equivalent to that of physicians. Further, the report suggested that having APNs, rather than physicians, provide quality services within their area of competence would appear to be cost-effective from a societal perspective. According to Jacox, the OTA report demonstrated that society would potentially benefit not only from the reduced cost of care but also would increase access to care. Lewin (1990) predicted that, if NPs alone were used to their full potential, $6.4 to $8.75 billion would be saved annually. Though APNs play valuable roles in providing approximately 80% of primary health care services in rural and underserved areas and despite their proven competency to deliver quality care, access to APNs remains a problem (U.S. Congress, Office of Technology Assessment, 1990).

The traditional health care triad composed of physicians, hospital executives, and insurers is being threatened by competition in the marketplace. While in the

past APNs served as complements to the physician when they performed work for the physician and the physician received the fee for service, today's APNs are seeking regulations that allow them to practice independently so they can substitute for the physician and receive direct payment for the services they perform. Feldstein (1988) pointed out that this new competition in the marketplace had resulted in political competition between physician groups and between physicians and nonphysician health care providers.

The utilization of APNs is gaining recognition among hospitals, insurers, and consumer groups as a cost-effective access alternative to high quality care. Harris (1983) reported that 59% of hospital administrators and 78% of insurance executives favored a health care delivery system that would encourage the use of APNs. Shanks-Meile, Shipley, Collins, and Tracker (1989) reported a significant increase in the demand for APNs after 1980, particularly in the private setting. Lewis and Sabo (1994) stated that, while members of the health care community are uncertain about the appropriate roles of the APN, those with an understanding of the contribution that these health care providers can make demonstrated a desire to hire them in rural and urban settings.

The most common reasons cited by the literature for the problems affecting availability and utilization of APNs are restrictive state regulatory barriers (Timmons & Ridenour, 1994). The most frequently cited regulatory barriers limiting care provided by APNs are legal

restrictions on the scope of practice, such as prescriptive authority and physician supervision, third-party reimbursement policies, and availability of educational programs (Nichols, 1992).

Direct third-party reimbursement is essential if these nurses are to successfully enter into independent practice and has been a goal of organized nursing since 1968 (Timmons & Ridenour, 1994). Lack of direct third-party payment from insurance companies and self-insured employers not only prevents them from practicing independently but additionally undervalues the services they provide (Mittelstadt, 1993).

The regulatory policy of denying direct third-party reimbursement to APNs has resulted in important effects on redistributive government policy. While research has credited them for improving health care access for rural Americans, this willingness to locate in rural areas is declining, and APNs cite regulatory barriers as one reason for the decline (Harrington & Culbertson, 1990).

Weston (1988) reported that states allowing direct third-party reimbursement to nonphysician providers had greater numbers of these providers. Sekscenski, Sansom, Bazell, Salmon, and Mullan (1994) reported that favorable practice environments for the APN were viewed as those areas that already had a larger supply of these practitioners. Restrictive physician supervision regulations were reported to have a negative impact on the distribution of APNs in rural areas (Weston).

Supervision requirements between physicians and APNs place additional restraints on independent practice and direct reimbursement for services. Often state practice acts require physicians to be present when care is provided by an APN. Wilken (1994) stated that some states' regulations exceed those of the federal regulations for receiving direct third-party reimbursement in rural areas by requiring direct physician supervision when the federal standard required only regular periodic physician supervision. Physician supervision requirements also may vary between clinical settings. Safriet (1992) charged that varying the requirements for physician supervision between clinical settings sent a message to consumers that the competency of APNs was determined by where they practiced and not by the quality of the services they provided.

Authority for APNs to prescribe medication varies greatly from state to state. Some states limit prescriptive authority by imposing restrictions of physician supervision and practice locations. Restricting prescriptive authority results in decreasing accessibility to health care, continuity of care, and quality of care provided to clients in rural and urban geographic locations by APNs (Faucher, 1992). Faucher reported that 35 states now authorize some form of prescriptive authority for APNs, with 25 of these alowing full autonomy in prescribing within the terms of their scope of practice.

The geographic location of facilities has been recognized as a major barrier to access to care since the late 1960s when health policy focused on making health care accessible to all Americans. The geographic maldistribution of physician and physical specialization had left many Americans without adequate health care access (Aday & Andersen, 1975). Geographic barriers to access were reduced when the Hill-Burton Act allowed many communities in rural areas around the United States to build hospitals. However, rural hospitals that provide a large portion of care to small communities have been impacted significantly by the cost containment efforts imposed by Congress. Many have become less financially viable and will be forced to close if the trend continues (Mullner, Byre, Lvey, & Kubal, 1982). In fact, 50 public hospitals were forced to sell to for-profit chains between 1980 and 1984 (Friedman, 1990). Bindman, Keane, and Lurie (1990) reported that, of the 81 community hospitals that closed in 1988, 11% were public, nonfederal hospitals. In addition, small not-for-profit, rural hospitals' closings are on the rise (American Hospital Association, 1995). The American Medical Association (AMA) reported that 409 rural hospitals have closed since 1980 (Hospital Closures on Rise, 1996).

Rural areas also have difficulty with recruitment and retention of health care providers, especially physicians (Rabinowitz, 1993). Physicians are reluctant to practice among the poor, the geographically isolated, and minority

groups. Ginzberg (1991) found a 10-fold or greater differential in the proportion of physicians to population when comparing more affluent areas with low income, minority neighborhoods. The U.S. Congress, Office of Technology Assessment (1990) revealed that the number of active physicians per 100,000 residents in rural areas is less than half that in urban areas. In 1988, 111 rural counties within the United States had no physician (U.S. Congress, Office of Technology Assessment). Access to physicians in rural areas declined between 1988 and 1996. In 1996, 149 rural counties within the United States had no physicians (AMA, 1996). These rural counties were in Alaska, Georgia, Missouri, Nebraska, North Dekota, South Dekota, and Texas (AMA).

Low income citizens continue to seek and obtain care from neighborhood institutions. This is common in both rural and urban emergency room settings. The decline of primary care practitioners and the reluctance of physicians to practice in rural and inner-city settings account for this trend (Gibson, 1980; Rogers, 1972). Though overcrowded and understaffed, public hospitals often represent the only source of available care for the uninsured, and even these institutions are accessible to only a fraction of those in need (Schlesinger, 1987; Sloan, Valvona, & Mullner, 1986). With an average cost of $140 per visit, an emergency room is not a desirable site for ambulatory primary care for the poor (Starr, 1992).

Unlike ability to pay and geographic location, attitudinal barriers to health care are less tangible and more difficult to identify, understand, and change. Mechanic (1972) stated that an individual's willingness to seek care was influenced by his attitudes toward and knowledge about health care and the social and cultural definition of illness that had been learned. One such attitudinal barrier is the belief that health care is solely or primarily concerned with the treatment of illness. In addition to fueling the trend away from primary care and toward specialization in the health professions, this misconception contributes to the neglect of programs designed to promote health through risk reduction (Davis, 1992; Starr, 1992).

Another attitudinal barrier to health care is dissatisfaction with the health care delivery system. Substantial differences in the quality of services across client groups, which may affect consumer satisfaction, have been documented (Chesney, Chavira, Hall, & Gary, 1982). Characteristics of health care delivery that have been identified with consumer dissatisfaction include long waiting periods, less thorough diagnostic evaluations, withholding of indicated treatment, and inappropriate and degrading interventions (Chesney et al.; Hayward, Shapiro, Freeman, & Corey, 1988; Muller, 1986; Zambrana, 1987).

APNs can make use of their understanding of the regulatory factors influencing today's health care market to ensure their viability and positively influence the

policies that dictate nursing practice. To achieve this economic and political success, nurses must ascertain: (a) how the public perceives APNs, the services they provide, and their role within the system; (b) how the consumer chooses between the alternative health care providers; (c) society's needs and wants in regard to health care; and (d) the satisfaction of the public with APNs (Lewis & Sabo, 1994).

The research since 1965 provides nursing with theory based information with regard to abilities of APNs to provide high quality health care services. What is lacking in the research is information on the relationship between variables of health care access, health status, and attitudes toward health and how the public chooses between alternative health care providers. These data are essential for the profession to successfully market APNs as a solution to inadequate health care access and rising health care costs as changes are made in the current health care delivery system.

The sheer number of nurses, combined with their critical roles in the provision of health care, should ensure a great deal of influence in the political process for making changes in the health care system. In reality, this has not occurred (Ashley, 1973; Hunter & Berger, 1984; Schutzenhofer & Spikes, 1986). The role of nursing in the health care system is dependent upon decisions and legislation enacted at the state and federal level by politicians, many of whom do not fully appreciate nursing's

impact on health care (Aiken, 1982; Cleland, 1982; Fagin, 1982; Glazer, 1985; Kalisch & Kalisch, 1982; MacPherson, 1987; Maraldo & Solomon, 1986; Schutzenhofer & Cannon, 1986). Twenty-five years of repressive legislation and regulations must be changed to fully promote independent practice for APNs.

If nurses are to play a positive role in shaping the future of professional nursing in a reformed health care delivery system, nursing must be in the forefront of policy making (Ashley & Aurilio, 1985; Binder, 1983; Cohen & Milburn, 1988; Davis & Rowland, 1983; Del Bueno, 1986; Fagin, 1981; Leininger, 1978; Lewis, 1986; Mason, 1988). Nursing became proactive and moved to the forefront of policy making with the presentation of Nursing's Agenda for Health Care Reform (ANA) in 1991.

Nursing's Agenda for Health Care Reform (ANA, 1991) embraced primary health care as the focus of a restructed health care delivery system. The agenda challenged the paternalistic approach to health care, which espoused "the professional knows best" (p. 236) and promotes the belief that consumers of health care should exercise choice about the care they receive (Sullivan, 1992). Tronbranski (1994) stated that any nurse who advocated individualized, holistic care must hold the importance of a nurse-patient relationship that fosters the involvement of the patient in decision making as a central tenet of the socio-political philosophy of nursing. Nursing's Agenda for Health Care Reform stated that the "cornerstone of nursing's plan for

reform is the delivery of primary health care services to households and individuals in convenient and familiar places" (ANA, p. 2).

The Clinton Administration promised health care reform and responded with the publication of the Health Security Act in September, 1993. The major strength of the Clinton health care reform proposal was a clear commitment to the concept of universal coverage (Forsythe & Willis, 1995). The Health Security Act set forth policy mehcnaisms for achieving universal coverage through the eliminiation of preexisting condition clauses in insurance coverage, strategies for reducing paperwork and administrative tasks for reimbursement, plans for the reporting of quality outcomes of patient care by providers, limited tort reform, and the beginnings of a risk adjustment process (Wilensky, 1994). However, a significant split occurred within the Democratic party in both the House and Senate over employer mandates and private sector spending limits. Though the bill was debated in Congress, it was never brought to the House floor because the votes to pass such legislation could not be assured. The Republican leadership presented a plan for health care reform that was similar to the Clinton plan and met a similar fate due to party splits.

The multitudes of health care reform bills presented by both the Democratic and Republican leadership displayed a wide range of the political and financial philosophies concerning government's role in the provision of health care. Angell (1993) stated that the one critical

component, which all the bills had in common, was that they supported health care delivery through managed care systems.

Institutions where health care delivery has been traditionally provided are undergoing tremendous changes in anticipation of managed care (Meehan, 1993). APNs who work in these traditional health care settings are experiencing proactive consequences of efforts toward health care reform (Enthoven, 1993). These consequences, resulting from complex social, economic, and political factors, will transform nursing practice.

Statement of the Purpose

The purposes of this study were to: (a) identify the relationship between health care access and willingness to use APNs; (b) identify the relationship between health care status and willingness to use APNs; (c) identify the relationship between demographic variables of age, race, gender, and socioeconomic variables and willingness to use APNs; and (d) to identify the relationship between attitudes toward health and willingness to use APNs.

Research Questions

The primary focus of the research was the assessment of the potential of APNs to increase health care access. To be valid, however, this assessment had to be proceeded by an understanding and identification of those variables which not only could be empirically related to health care access, but also were amenable to the influence of the

nursing profession. For the purposes of this study, the following questions were identified:

1. What is the relationship between health care access and willingness to use APNs?

2. What is the relationship between health care status and willingness to use APNs?

3. What is the relationship between health care access and the demographic variables of age, race, gender, and socioeconomic variables and willingness to use APNs?

4. What is the relationship between attitudes toward health and willingness to use APNs?

Theoretical Framework

The theoretical framework for the study was drawn from the goal attainment theory and the Aday and Andersen (1972) conceptual model (AACM) for the study of health care access. An overview of goal attainment theory and the conceptual model of health care access is presented to enhance the understanding of the framework.

Theory of Goal Attainment

King (1981) stated that "health care delivery for the future mandates an approach that promotes communication, cooperation, and coordination among health care providers" (p. 163). The theory of goal attainment incorporates three interacting systems in an open framework for nursing practice.

Individuals comprise a system in the environment called the personal system. Individuals interact to form groups and these groups comprise the interpersonal system.

These groups organize according to personal values, needs, and goals to form organizations that make up societies and comprise the social system. The major concepts of the theory are interaction, perception, communication, transaction, self, role, stress, growth and development, time, and space.

The theory of goal attainment states that two people meet in a situation, perceive each other, make judgments about each other, and react to the perception. Interaction occurs that can be directly observed and recorded. Goals and the means to achieve goals are mutually identified during the interaction. When the means to achieve goals are agreed upon, the individual moves toward transaction (see Figure 1). King (1981) operationally defined transaction as goal attainment. The following definitions were given by King:

> Self is defined as a personal system synonymous with the terms I, me, and person. Self is "a unified complex, whole person who perceives, thinks, desires, imagines, decides, identifies goals and selects means to achieve them." (p. 27)
>
> Perception is each person's representation of reality. (p. 145)
>
> Interaction is a process of perception and communication between person and environment and between person and person, represented by verbal and nonverbal behaviors that are goal directed. (p. 145)
>
> Communication is a process whereby information is given directly or indirectly from one person to another. (p. 146)
>
> Transaction is the observable behavior of human beings interacting with their environment that leads to goal attainment. (p. 147)

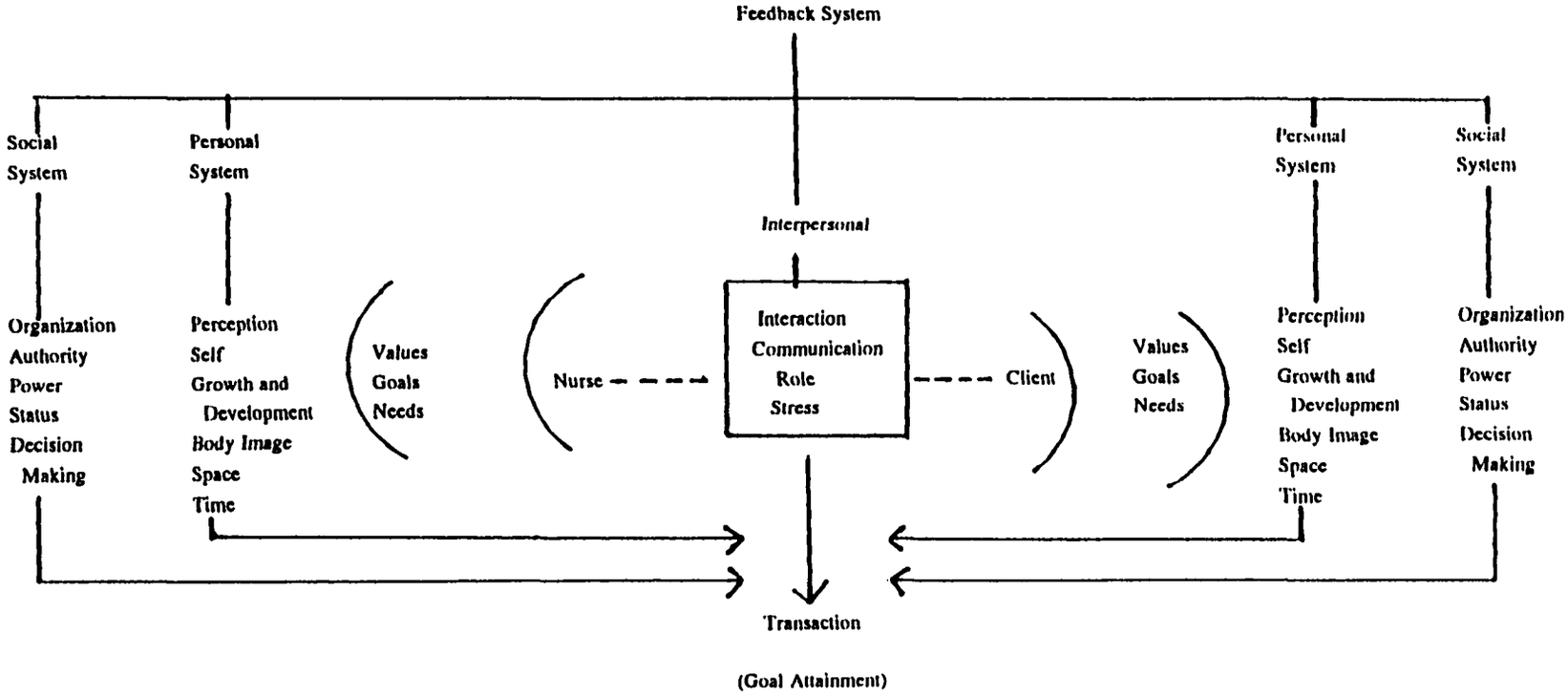

Figure 1. Theory of goal attainment.

> Role is a set of behaviors expected of persons occupying a position in a social system; rules that define rights and obligations in a position; a relationship with one or more individuals interacting in specific situations for a purpose. (p. 147)
>
> Stress is a dynamic state whereby a person interacts with the environment to maintain balance for growth and development and performance. (p. 148)
>
> Time is the continuous flow of events in successive order moving onward toward the future. (p. 148)
>
> Space is viewed as existing in all directions and is the same everywhere and is the immediate environment in which the persons interact and move toward goal attainment. (p. 148)
>
> Body image is a person's perception of his own body, others' reactions to his appearance, and is a result of others' reactions to self. (p. 33)

Theory has as its primary purpose the generation of scientific knowledge that describes, explains, and predicts phenomena relevant to a field of study. Propositions are truth statements about a theory (Dubin, 1978). Propositions are generated from a theory and give some idea of the predictive value of the concepts in the theory. The following are propositions of goal attainment theory:

1. If perceptual accuracy is present in nurse-client interactions, transactions will occur.
2. If nurses and clients make transactions, goals will be attained.
3. If goals are attained, effective nursing care will occur.
4. If transactions are made in nurse-client interactions, growth and development will be enhanced for both.
5. If nurses with special knowledge and skills communicate appropriate information to clients, mutual goal setting will occur.
6. When mutual goals have been identified, means have been explored, and nurse and client agree on means to achieve goals, transaction will be made and goals achieved.
7. If role expectations and role performance, as perceived by the nurse and client, are congruent, transactions will occur.

8. If role conflict is experienced by the nurse, client, or both, stress in nurse-client interactions will occur.
9. Accurate perception of time and space dimensions in nurse-client interactions leads to transactions.
10. Knowledge of one's concept of self will help bring about a helping relationship with clients. (King, 1981, p. 203)

Polit and Hungler (1983) stated that theory can never be tested directly. It is the hypotheses deduced from the theory that are subject to scientific investigation. King (1981) identified the following hypotheses for the theory of goal attainment.

1. Perceptual accuracy in nurse-client interactions increases mutual goal setting.
2. Communication increases mutual goal setting between nurses and patients and leads to satisfaction.
3. Satisfaction in nurses and clients increases goal attainment.
4. Goal attainment decreases stress and anxiety in nursing situations.
5. Goal attainment increases client learning and coping ability in nursing situations. (p. 202)

Aday and Andersen's Conceptual Model of Access

Aday and Andersen (1972) conceptualized the study of health care access as proceeding from health policy objectives through the characteristics of the health care system and the population at risk (inputs) to the actual utilization of health care services and consumer satisfaction (outputs). The major concepts of the conceptual framework are health policy, the health delivery system, the population at risk, utilization of health services, and consumer satisfaction. The interrelations of the variables are presented graphically in Figure 2.

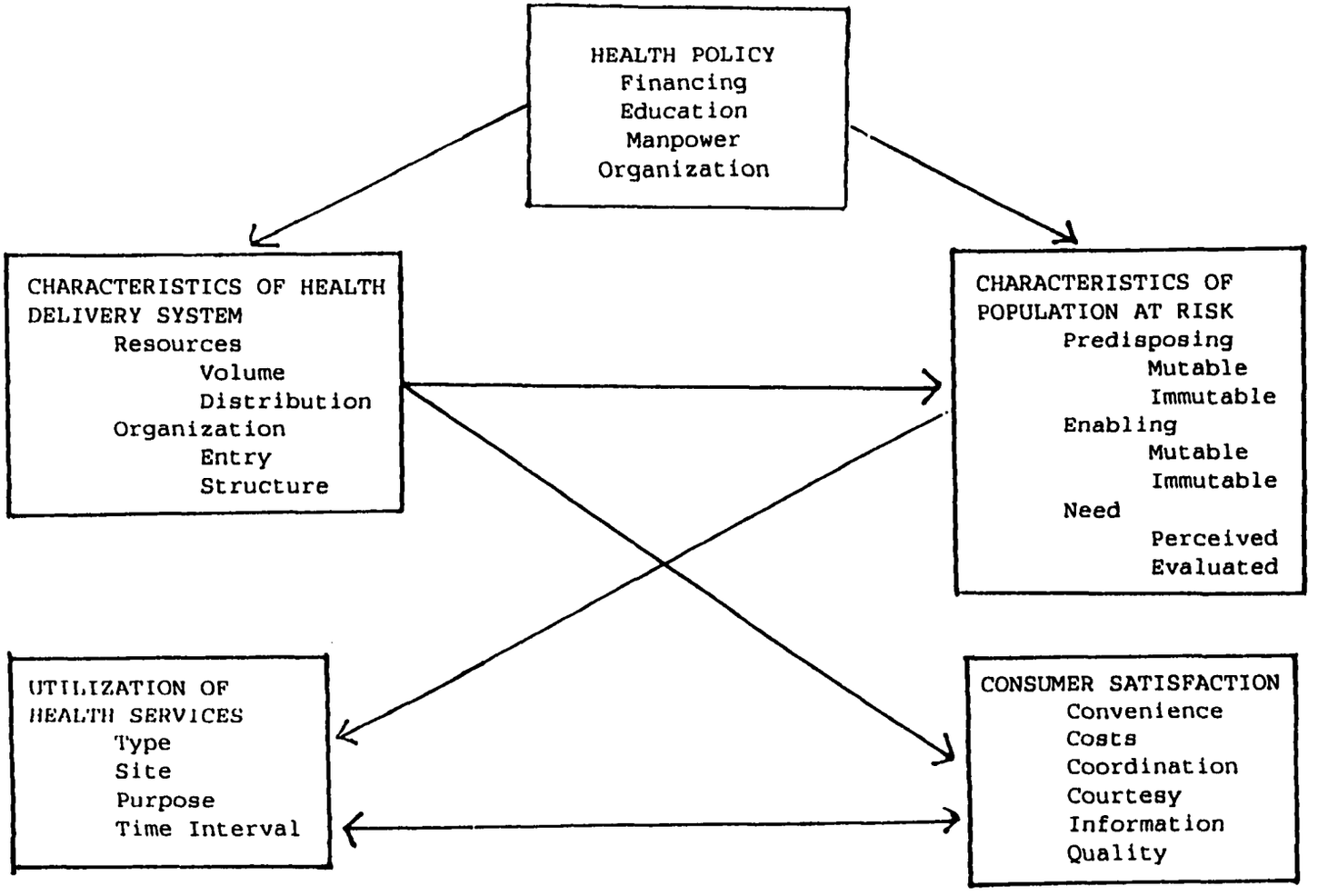

Figure 2. Aday and Andersen's (1974) framework for the study of access.

Aday, Andersen, and Fleming (1974) stated that access is the goal of much of health policy, which is defined as the financing, education, manpower, and organization components of the system. The health delivery system is characterized by two major elements--resources and organization. Resources include health personnel, health care facilities, equipment and materials, and labor and capital investments. Organization refers to what the system does with the resources allocated for its use. Organization is divided into entry and structure components. Entry refers to the mechanism of gaining entry into the system and includes such variables as distance and time required for travel and waiting time. This entry component is what Andersen (1970) termed access and defined as the entry into the medical system as well as the continuation of the treatment process. Structure refers to what individuals experience once access into the system is gained. Structure includes such variables as type of provider and type of services.

Characteristics of the population at risk are divided into predisposing, enabling, and need components. Predisposing and enabling components can be mutable or immutable in nature. Mutable characteristics are capable of being altered by health policy, while immutable characteristics are not. Need variables possess perceived and evaluated components. A perceived component of need is that need for service perceived by the individual, while the evaluated component of need is that need for service

evaluated by the delivery system. Predisposing variables include the following variables that exist prior to illness: age, race, gender, religion, and values concerning health. Enabling variables include the following resources available to the individual to acquire health care services: income, insurance coverage, and the attributes of the community where they reside. The need variables refer to the level of health of the individual.

Aday and Andersen (1972) identified the following two outcome components: utilization of health services and consumer satisfaction with health services. Utilization of health services includes the type, site, purpose, and time interval, while consumer satisfaction includes the variables of cost, convenience, coordination, courtesy, information, and quality.

Thus, health policy may be viewed as directly affecting characteristics of the delivery system or the population at risk. The delivery system, in turn, may directly affect the utilization of health care services and consumer satisfaction with health care services. The delivery system may affect characteristics of the population at risk, thereby indirectly impacting utilization of health care services and consumer satisfaction with health care services. Characteristics of the population at risk may directly impact utilization of and consumer satisfaction with health care services. Further, over time, utilization of services may affect

consumer satisfaction and, in turn, consumer satisfaction may impact utilization of services.

Conceptual Model for Study

Schulberg (1969) stated that the focus on independent versus dependent variables in evaluation research depends on whether one is primarily concerned with the outcomes of the delivery system itself or with how the components of the system relate to one another in achieving the objectives of the system. In this study, the objectives were projected as goal attainment. The focus of the research was the interrelationship of the components of the system in achieving the goal of access. Therefore, King's theory of goal attainment and Aday and Andersen's model of access served as the basis for the development of a conceptual framework to guide the study of access.

Aday and Andersen's (1972) concept of population at risk was viewed as the personal system, while the health care delivery system was viewed as the interpersonal system. The component of health policy was the social system that encompassed the environment in which the individual sought health care and the environment in which services were delivered. Individuals were viewed as possessing characteristics of King's (1981) personal system of perception, self, growth and development, body image, space, and time that influenced their reaction to the health care delivery system. In addition, each individual possessed values, goals, and needs that were influenced by the concepts of person. These concepts, which King

operationally defined as self, in turn, influenced the reaction of the consumer to the health care delivery system. These values, goals, and needs were influenced by the health care delivery system and thereby formed the basis of the interpersonal system, through which communication, interaction, and health patterns and beliefs could be fostered or changed by the nurse. The outcome, or transaction, could be measured through the components of consumer satisfaction and utilization of health care services. The goal of the process was health care access. The interrelations of the variables involved are presented graphically in Figure 3.

Definitions of Terms

The following terms were defined for the purpose of this study:

Health Care Access--the descriptors of a "usual" source of care that was utilized by the individual when health problems arose and which resulted in the provision of a plan of care. Operationally defined as type of facility, type of provider, transportation type to facility, time involved in getting to facility, appointment requirements and latency, length of time using facility, prior knowledge about facility (items 41-48), reasons for lack of usual source (items 49-53), and satisfaction with current health care (item 54) of the Predicting Willingness to Use Advanced Practice Nurses (PWUAPNs) instrument.

Health Status--past and present health behaviors and acute and chronic health problems identified through both

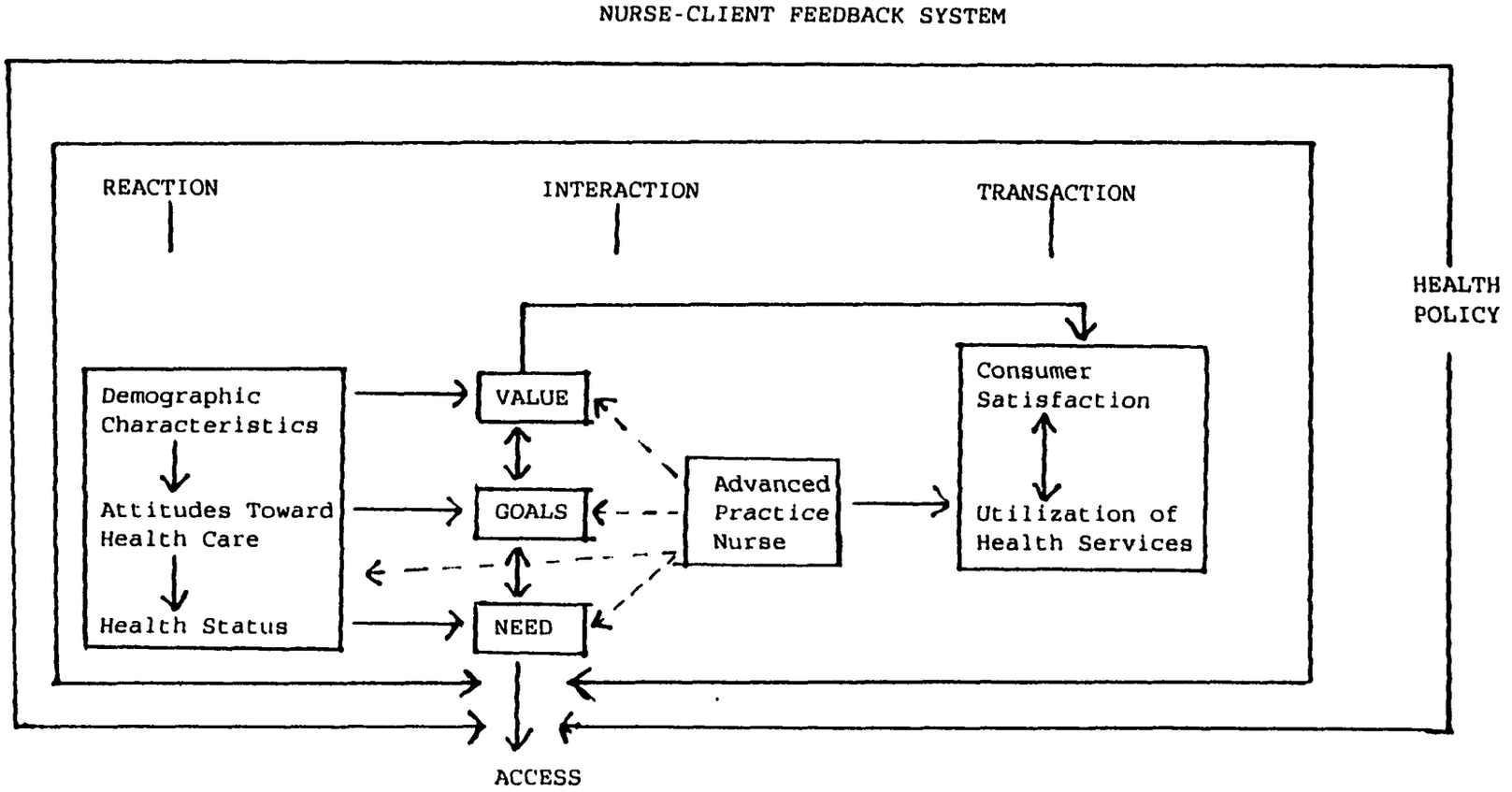

Figure 3. Franks' (1993) framework for study of access.

self-assessment and history of treatment by health care professionals. Operationally defined as height, weight, history of smoking, blood pressure checks, level of physical activity, presence of health limitations and their effect on scheduled activities, and the diagnosis of acute and chronic health problems diagnosed by a physician as worded in (items 16-24) the PWUAPNs instrument.

Health Care Attitudes--perceptions toward the availability of medical care and the funds with which to purchase it. Operationally defined as expressed agreement or disagreement with 10 statements of health attitude scale as stated in (items 25-31) the PWUAPNs instrument.

Advanced Practice Nurse--a registered nurse with a graduate degree in nursing who conducted comprehensive health assessments and diagnoses and treated complex responses of individuals, families, and communities to actual or potential health problems (ANA, 1992).

Willingness to Use--choosing the APN as a health care provider when other alternative health care providers were available. Operationally defined as selection of agree or strongly agree to 13 hypothetical situations (items 55-68) of the PWUAPNs instrument.

Demographic Variables--male and female adults of 18 years or older, including Caucasians, African Americans, Hispanics, and Orientals; socioeconomic status of lower income represnting less than $15,000, middle income represnting $15,001-$24,999, and upper income representing more than $25,000. Operationally defined as gender, age,

race, marital status, number of children, number of children at home, number of persons living in home, educational level, health insurance coverage, income after taxes, receipt of food stamps, and ownership of personal residence (items 1-15) of the PWUAPNs instrument.

Assumptions

The following assumptions were made for the purpose of this study: (a) individuals could access their health status, (b) individuals could describe their willingness to utilize alternate forms of health care providers, and (c) individuals should have the right to choose their health care provider.

Significance of the Study

Rogge (1987) stated that exercising political power has become an essential strategy for safeguarding the patient's welfare in contemporary nursing practice. Pervasive health care policies at the local, state, and national levels have profound consequences not only for the patient's welfare but also for defining the scope of nursing practice (Jones, 1985; Styles, 1987; Wieczorek, 1985). Del Bueno (1986) stated that "each nurse, regardless of her position in an organization, has the power to make choices that effects the group's goals" (p. 1496).

Because many health care organizations are now in the midst of changes mandated by political and economic forces, success or failure in meeting nursing goals depends on the willingness of nurses to participate in the process of

change. Lewis (1986) stressed that nurses could no longer afford passivity and submissiveness to the policies that determined the distribution of health care resources and the delivery of health care. Hartshorn (1988) argued that, if the profession of nursing was to obtain power to influence public policy, all nurses must be involved in the political process at all levels.

The realization that health care reform and improved health care is based on decision making at high level political tables is evolving in both the nursing profession and society at large. Nurses and consumers can no longer afford to be absent from the policy making table. Awareness of consumers' health needs and opinions in regard to nursing and the nurse's role in health care delivery will allow the profession to educate participants in policy making about the roles of nursing. Informed policy makers will contribute to the formulation of strategies that best achieve the goals of high quality, nondiscriminatory health care universally accessible to every individual who resides in the United States.

Nursing, as the largest aggregate of health care providers, is in a strategic position to document and criticize structural, interactional, and ideological barriers to access to health care (Stevens, 1992). Maraldo and Solomon (1986) suggested that the nursing profession should begin the process with a definition that includes components such as power, politics, and economic interests. Nursing research must be employed to establish a sound

theoretical base to support the need for policy changes with regard to organization and distribution of health care. Nursing practice must analyze access in its broadest sense, and nursing education must enlarge the focus of the profession to encompass the health of society as a whole.

CHAPTER II

Review of Literature

The American Nurses' Association's Nursing: A Social Policy Statement (1980) mandated that nursing is accountable for the availability, acceptability, and accessibility of health care within the United States. Although the role of the APN is still relatively new, there is a growing body of research literature regarding its impact on health care delivery. For the most part, these studies have dealt with the process dimensions of care provided by NPs and CNMs. Most researchers have examined the clinical abilities of these nonphysician providers in comparison to the clinical abilities of physicians. In addition, researchers have examined both patients' as well as physicians' satisfaction with these health care providers.

This chapter includes a discussion of research literature that explores the relationship of health care access to the demographic variables of age, race, gender, socioeconomic status, health status, and health attitudes. Research literature that explores the relationship between health care access and the acceptance of advance practice nurses is also discussed.

Demographic Variables Related to Health Care Access

Research that explores the relationship of demographic variables to health care access tends to be subgroup specific. Hayward et al. (1988) utilized secondary data analysis of the 1986 Access to Health Care Survey to determine whether groups other than the elderly and the uninsured had difficulty obtaining access to medical care. The sample included 7,633 adults nationwide. Logistic regression was used to determine the relationship of age, race, ethnic background, income, and insurance status in predicting access to health care. The insured population was found to have greater access than the uninsured. The uninsured, nonpoor, working-age adults were found to have less access to health care than the elderly. Insured working-age adults were 2.7 to 4.4 times as likely to have been unable to receive needed medical care as the elderly. The poor among insured working-age adults were 3.54 to 5.3 times as likely to have been unable to receive needed medical care as the nonpoor and 3.6 to 6.8 times as likely to have major financial difficulties because of illness. African Americans were 1.1 to 2.2 times as likely as Whites to have been unable to receive medical care. Hispanics were 1.3 to 3.2 times more likely as Whites not to have seen a physician within the past year. The elderly were found to have better access to health care than the nonelderly after controlling for all other demographic variables. Hayward et al. concluded that working-age, insured adults have less access to medical care than the

elderly population and that poverty and being non-White further lessens access to health care. Being uninsured, poor, African American, or Hispanic were independent predictors of low health care access.

Similar statistical data have been reported regarding health care access of children. Woods, Hayward, Corey, Freeman, and Shapiro (1990) studied the access to health care of American children and adolescents. The study used a multistage design to achieve a representative sample of 2,182 children 17 years or younger: 777 aged 1 to 5 years, 725 aged 6 to 12 years, and 678 aged 13 to 17 years. Households within a geographic area were randomly selected by the Waksberg Screening procedure for random-digit dialing. Once a household was contacted, an interview was conducted with either the male or female head of household. The 1986 federal poverty levels, household size, and income were used to categorize families as poor (< 100% federal poverty level), near-poor (100% to 150% federal poverty level), or nonpoor (> 150% federal poverty level). Chi-square analyses were used to determine the significance between proportions, while logistic regression was used to evaluate associations between access indicators and patient characteristics of ethnicity, income, and medical insurance. Logistic regression ($p < .001$) revealed that children who were uninsured, poor, or non-White were unlikely to have seen a physician in the past year. Non-White children had less access to health care independent of their health status, poverty status, insurance status,

or gender. Approximately 10% of the children had no medical insurance, 10% had no regular source of care, and 18% identified emergency rooms and community clinics as their usual site of care. Woods et al. concluded that being uninsured, poor, or non-White were independent predictors of children who have less health care access.

Research has shown that race is an important factor to consider within a health care delivery system. Udry, Morris, and Bauman (1976) studied women's preference for the racial composition of medical facilities. The questions addressed were

1. Do African Americans prefer to be together?

2. Do African Americans prefer to be served or treated by African Americans?

3. Do African Americans prefer to have separate clinics with all African American personnel?

Interviews were conducted and the results indicated a reduction among White women (especially southern White women) in their expressed preference for segregated health care. Neither northern nor southern African Americans expressed a preference for segregated health care.

A component of race that must be considered in determining barriers to health care access is perception of racism by the consumer. LaFargue (1972) explored racial prejudice in White nurses and the reaction of African American patients to ascertain if racial prejudice kept African Americans from seeking health care. The investigator chose 10 African American families and 23

White nurse participants from the pediatric clinics of a large Seattle hospital. The interview method was used to collect data. The Schuman and Harding Reactions Questionnaire was used to measure specifically the kind of prejudice among White nurses. Of the 23 White nurses, 18 (77.7%) showed little or no prejudice. All African American families reported having been treated badly because they were African American. Eight of the 10 African American families felt there was discrimination within the health field. However, none of the African American families felt they had experienced prejudice or had been treated badly by the public health nurse. None of the families could recall a specific incident in which racism affected their care. The findings suggested that higher perceived prejudice may be related to failure to comply with follow-up appointments and care. Though the value of this study was limited by a small sample size, the results suggested that race may be a barrier to health care access.

Gender has been shown to be a significant barrier to health care. Makuc, Freid, and Kleinman (1989) explored the national trends in the use of preventive health care by women. Data from the 1974 and 1985 National Health Interview Survey (NHIS), a continuing survey conducted by the National Center for Health Statistics (NCHS), were used by Makuc et al. to study the use of breast exams, pap smears, and hypertensive screening. The sample was comprised of 15,000 women in 12 subgroups based on age,

race, and income. SURREGR and SESUDAAN computer programs were used to calculate observed proportions, variances, and covariances. Between 1973 and 1985, the percentage of women with a recent breast exam increased from 66% to 70% overall. In 1985, the percent with a recent breast exam was 10% to 13%, lower among the poor than the nonpoor for all age-race subgroups except African American women 60 to 79 years of age. The older poor women were most likely never to have had a breast exam. These findings were similar to the use of pap smears with 18% of older poor women never having a pap smear. African American women were more likely to have had hypertensive screening than White women. Among women under 60 years of age, 72% to 73% of poor White women had not received hypertensive screening, while 83% to 86% of poor African American women had received hypertensive screening. In 1985, 84% of women between the ages of 60 and 79 years reported hypertensive screening. The finding that poor women of all ages and races were less likely to have access to preventive health measures than their nonpoor counterpart suggests that inequities in health care still remain due to poverty.

In summary, research regarding socioeconomic level, age, race, and gender variables suggested that poverty, African American or Hispanic race, and female gender pose significant barriers to health care access. Research indicated that the perception of racial prejudice also affects health attitudes and health behaviors.

Health Attitudes Related to Health Care Access

Research suggested that health behaviors may be affected by socioeconomic barriers to health care access. Weissman, Stern, Fielding, and Epstein (1991) used surveys and personal interviews to determine characteristics of patient delays before hospitalization. The sample included 17,231 adults who had first time admissions to five hospitals in Massachusetts. Of the 17,231 adults admitted during the first 6 months of 1987, data on 12,068 were included in the study. Findings indicated reports of delays in care by 16% of the sample. Patients who were African American, poor, uninsured, or had no regular source of care were 40% to 80% more likely to report delays ($p < 0.01$). Cost of care was a significant factor in delaying care for patients with the lowest socioeconomic status. Patients in the lower socioeconomic level who were also uninsured were 12 times as likely to delay care than any other patient group ($p < .001$). Delays in care are significant in that patients who reported delays experienced 9% longer hospital stays ($p < .0001$). Socioeconomic factors of income and insurance status affects vulnerable groups of patients by delays in care. These researchers suggested that because poor, uninsured, African American citizens are at greater risk for delaying needed medical care, policy options that address inequities in access to health care services are especially important.

However, simply providing coverage may not remove all the barriers to access and thereby may improve health

outcomes. Hass, Udvarhelyi, Morris, and Epstein (1993) studied the effect of providing health coverage to poor uninsured pregnant women on access to prenatal care and newborn health outcomes. All in-hospital, single-gestation live births in 1984 (n = 57,257) were compared to in-hospital, single-gestation live births in 1987 (n = 64,346). In 1985, Massachusetts instituted Healthy Start, a program providing health coverage for all uninsured mothers at 185% of the federal poverty level. Uninsured mothers at 100% of the federal poverty level were provided coverage under the state Medicaid plan. In 1987, 54% of the uninsured group was enrolled in the Healthy Start program. Two control groups consisted of births covered by Medicaid and births covered by commercial payers. Adequacy of prenatal care was examined using the criteria established by the Institute of Medicine: number and timing of prenatal visits. Adverse infant outcomes consisted of prematurity and low birth weight (< 2500 g). Comparison of adequacy of prenatal care and adverse infant outcomes were made for the group of uninsured births and the two control groups of Medicaid and commercial payer covered births.

Between 1984 and 1987, the rate of satisfactory prenatal care for all women in Massachusetts declined from 96.4% to 93.8% ($p < .001$). The overall incidence of adverse birth outcome was the same for both years, -6.6%. In 1984, uninsured women were less likely than insured women to receive satisfactory prenatal care (90.5% and 98.1%, respectively; interpayer difference, -7.6%).

Uninsured women were also less likely to initiate prenatal care before the third trimester of pregnancy (94.2% and 99.1%, respectively; interpayer difference, -4.9%). Uninsured women were 7.1% more likely to experience adverse birth outcomes than insured women (5.8%, interpayer; difference, 1.3%). There were no significant changes in the interpayer difference in rates for either adequacy of prenatal care or adverse infant outcomes measures relative to either control group between the years 1984 and 1987. These findings suggest that the expansion of health coverage to uninsured pregnant women is not associated with an improvement in access to prenatal care or birth outcomes. The researchers concluded that these findings might be explained by the fact that access to prenatal care to all women in Massachusetts declined during the years between 1984 and 1987.

Health Status Related to Health Care Access

An extensive review of literature found no specific studies exploring the relationship of health care access to health status. However, research regarding the use of APNs, which follows, supports the hypothesis that improved health outcomes are associated with increased access to health care.

Willingness to Use APNs Related to Health Care Access

Though the concept of APNs is relatively new, the growing body of research supports the positive impact NPs, CNMs, CNSs, and CRNAs have on health care access for low

income citizens in small towns, rural communities, and inner city locations. Sultz, Henry, Bullough, Buck, and Kinyon (1984) surveyed program directors and NP students in regard to practice issues of employment setting, mobility, income, role function, and legal and insurance problems in a longitudinal study in 1974 and 1980. NP students were resurveyed 6 months after graduation. The employers of these NPs were also surveyed to explore the reasons for employing an NP, quality of performance, and satisfaction with performance. The data were obtained by self-administered questionnaires distributed to each participant. The sample included 1,579 NPs in 1974 and 1,001 NPs in 1980. The findings revealed that two thirds of the NPs in 1974 and 1980 were employed providing primary care. In 1974, almost 51% of patients were low-income, 40% were middle income, and the remaining 9% were high income. While the 1980 findings were similar, a shift in the patient population to the high income bracket was reported. Though the researchers state that NPs serve citizens from small towns, rural, and inner-city locations, data of geographic distribution were reported by geographic regions only.

The findings support that employers of NPs were satisfied with the NPs' clinical performances, with only 7% reporting dissatisfaction due to cost of employment. Employers reported that participation of NPs in the care of patients improve patient follow-up return rates. The major reasons cited for employing an NP were emphasis on

maintaining high quality care during the time of existing shortages of primary care physicians and substituting for or assisting busy physicians.

Findings that CNMs increased health care access to low income groups in rural and inner city locations have been reported in the literature. Declercq (1992) used birth certificate data provided by the Natality, Marriage, and Divorce Statistics Branch of the National Center for Health Statistics, Centers for Disease Control to study the characteristics of mothers served by nurse midwives, the setting in which midwives attend births, and regional variation in these factors. Findings indicate that nurse midwifery practice within the United States was hospital based with 87.3% of all nurse midwife-attendance births occurring in a hospital setting in 1988. The mothers receiving care from nurse midwives in the hospital setting tend to be younger (17.8% less than 19 years of age, 48.3% less than 25 years of age), unmarried (35.4%), and foreign born (22.8%). Nurse midwives attending birth outside the hospital are 94.6% more likely to be White. Mothers attended by nurse midwives in and out of hospital settings tend to receive less prenatal care with nearly 37% in both groups beginning care after the fourth month. The only measure of outcome on birth certificates in birth weight and Apgar score indicates that nurse midwives' attendance births have better than average outcomes whether in an in-hospital or out-of-hospital setting. The findings reported

by Declercq support that health care access to low income, young, minority women was improved by the use of CNMs.

Research also documented satisfaction with services received from APNs with acceptance and satisfaction used interchangeably in the literature. Acceptance in the literature was measured as the satisfaction of services received. Zikmund and Miller (1979) surveyed the attitudes of 205 rural health consumers toward NPs. Personal interviews were conducted in the subjects' homes using a 15-item attitude Likert-type scale. The scale recorded the 15 items from 1 (strongly disagree) to 5 (strongly agree). The 15 belief statements were grouped by five into three factors: competency in role, interpersonal relations, and relative performance (trust). A factor analysis with orthogonal (varimax) rotation was used to delineate the attitudes toward NPs. The 3-factor matrix accounted for 51% of the total variance in the data. The factor competency in role accounted for 35.8% of the variance. This factor included statements that an NP would be available when needed, would be qualified to care for minor illnesses, would convey understandable information, and would make a right diagnosis as often as a doctor would. The second factor, interpersonal relations, accounted for 28.9% of the variance. This factor included information such as an NP would take more personal interest, spend more time, be less costly, and provide health counseling. The belief value that "I would respect the medical opinion of the NP" was split between the factor competency in role and

interpersonal relations. The factor relative performance (trust) accounted for 35.3% of the variance. This factor included statements that an NP could safely prescribe drugs, could detect the symptoms of a serious illness that require a physician referral, could not treat most minor health problems as well as a doctor, could work only under the direct supervision of a doctor, and could influence a patient to obey the instructions given by a nurse as well as by a doctor. The findings indicated that consumers are generally uncertain about the performance of an NP. While there was consensus that the nurse would spend more time with the patient, provide health counseling, and be less costly, consumers were uncertain as to whether the NP would demonstrate more personal interest in the patient than a physician. In the area of competency, the consumers agreed that the NP would be available when needed and qualified to attend to minor complaints and that the consumer would follow the advice of the NP. However, the consumer once again voiced uncertainty about the NP's ability to correctly diagnose illness. This study confirms the confusion of the public in regard to the educational preparation and the role of the NP.

Lack of knowledge regarding the NP role and lack of personal experience with an APN might account for this public confusion. Enggist and Hatcher (1983) used a system analysis to delineate factors influencing consumer receptivity to the NP. The study was performed at the General Medical Clinic, a part of the Ambulatory Care

Service Department of a large inner city hospital. In addition to the medical staff, the clinic employed four full-time and two part-time NPs. The sample included 120 consumers selected via systematic sampling as they arrived for clinic appointments at predetermined fixed time intervals. The sample was divided into two groups, one consisting of patients who have never been examined or treated by an NP and the second group consisting of patients who were examined by an NP, treated by an NP, or both. Data were collected by identical questionnaires in a treatment room to ensure privacy. In order to ascertain consumer acceptance of the NP concept, the researchers chose a process model. One model focused on the basic acceptance of the NP as the primary provider in cooperation with a consulting physician. In contrast, the second model focused on consumer choice and preference--the consumer, when confronted with an existing illness or symptoms, was asked to choose among the different types of health care providers available. The average age of the consumers was 54.3 years, 60% had an annual income less than $3000, and 50% had less than 9 years of education. While the African American/White patient mix of the first group was 52.3% White and 45.0 African American, the second group was 67.6% African American. The group that had no prior experience with an NP reported highest acceptance of the concept among the 41- to 60-year-old age group, with the lowest acceptance among the 21- to 40-year-old age group (42.1%). Males (81.4%) were more accepting than females. African

American patients (78.0%) were more accepting than Whites (56.4%). Socioeconomic level did not demonstrate a significant effect on acceptance. There is a strong statistical association between acceptance and the subject's belief that the NP can function independently. The subjects who did not believe that the NP could practice independently were split on the acceptance. Similar findings were reported for the NP cooperating with a physician. The subjects who believed that the NP should practice under the supervision of a doctor reported more acceptance. Only 30% of the subjects would accept the NP as both the primary care provider and the NP's practice in the independent role. With a physician's supervision, 61% accepted both. The findings showed that 93.8% of the patients with minor complaints accepted the NP as the primary provider of choice. With potentially serious complaints, 68.8% accepted the NP, while 60.0% of the subjects with unequivocally serious complaints were accepting of the NP as primary health provider. The researchers reported that patient education, source of health care, acceptance of the NP role, and regular or lack of regular source of care did not produce a significant difference in the consumer acceptance toward the NP. One important finding in the study was that persons who had experienced an illness and had no prior experience with an NP were more likely to opt for doctor only care. Enggist and Hatcher concluded that broad-scale inception of NP programs would provide low income and underserved citizens

with an important entry point into the health care delivery system.

As previously reported, the elderly already possess greater health care access. Since the age of the U.S. population is increasing, the relationship between age and the acceptance of NP is a significant issue. Fox and Storms (1980) selected 2,582 subjects for a telephone survey to measure the elderly's acceptance of the NP. The subjects included in the sample (N = 497) reported being 65 years of age or older. Of these, 26% were male and 74% were female. Eighty-three percent of the subjects had sought health care within the past 12 months. Eighty-five percent of the sample lived within 20 min of their source of care. Fifty-six percent of the sample reported having a chronic health condition. The sample was evenly divided as to whether they had heard of an NP before being contacted by the investigator, whereas 95% had heard of a registered nurse. The subjects were asked about their exposure to media related to health care and whether any member of their family worked in health occupations. There was no significant relationship between media exposure or family health care worker and prior knowledge of NPs. The subjects were then asked if they would allow an NP to conduct preliminary medical examinations, decide if a physician consult was necessary, provide follow-up care after the doctor prescribed treatment, do all prenatal and newborn wellness care, provide simple emergency care including suturing, and care for persons with high blood

pressure. Subjects who had heard of an NP were 7% more likely to accept the services described. Age had a significant inverse impact on acceptance for women. While 75.3% of persons aged 18 to 44 years stated acceptance, 67.6% of subjects over 65 stated acceptance. Age did not significantly impact acceptance of the NP by males, with approximately 77% of all-age males stating acceptance. One explanation suggested was that the elderly were more satisfied with the care they already received (72.4%).

Acceptance of the NP and satisfaction with the services received from these health care providers are indicative of the potential impact on the health care market. However, to fully explore the potential for use of the APN within a newly reformed health care market, one must possess knowledge of the variables that predict not only access to the market but also the intended use of the services provided by the APN. Few studies focus on predicting the market for advanced practice nursing. The ANA authorized a Gallup pole of 1,000 adults over 18 years of age between July 12 and 30, 1993. Respondents had a median age of 42 years and a median income of $31,100 and were 85% White and 53% female, and the majority had at least a high school education. Those polled were asked the following question:

> A proposal has been made to allow registered nurses to provide some of the basic or primary care you currently have to go to a family doctor to receive. These nurses would have at least a master's degree and would be allowed to perform physical exams, prenatal care, immunizations, and treat illnesses like colds and infections. How willing would you be to go to a registered nurse to receive this type of care?.

Of those polled, 86% were willing to use the registered nurse, with 52% "very willing" and 34% "somewhat willing." Twelve percent expressed an unwillingness to go to a registered nurse. It becomes imperative to determine the subgroups within the population most likely to use the services of NP and to market this professional to the public as an alternative health care choice.

Pender and Pender (1980) initiated the research into the prediction of potential consumers for the health promotion services provided by the NP. A sample of 388 adults was randomly selected from a county in northern Illinois in 1978. One person in each household was interviewed. The sample had a median age of 42 years. The sample was essentially equal by sex. The large majority fell within the middle socioeconomic status. Ten independent variables were identified as possible predictors of degree of willingness to use NPs' services: age, formal education, household size, major life change score, knowledge of current health issues, interest in using prevention and health promotion services, number of physician visits within the last 12 months, number of dental visits within the last 24 months, use of existing prevention and early detection services, and use of existing health education and health counseling services. The dependent variable of intention to use prevention and health promotion services of NPs was measured by asking each subject if they would directly reimburse a master's prepared NP for these services. The findings reported that

61% of the subjects would use the health promotion services if they were provided by the master's prepared NP, 35% would not, and 4% were undecided. Discriminant analysis revealed that the variables significant in predicting intention to use health promotion services (p = .05) were interest in use of prevention and health promotion services for direct pay, years of formal education, and major like change score. Individuals intending to use the illness prevention and health promotion services of an NP expressed greater interest in such services, had achieved a higher level of formal education, and had a lower major life change score. Nonparametric statistics were used to determine whether four additional qualitative characteristics were related to the intended use of NP services: sex, regular personal physician, positive attitude toward health in absence of illness, and third party reimbursement for NP services. Gender was not related to intended use, with males and females reporting comparable willingness (X^2 = .016, p > .05). With 87% reporting the use of a regular personal physician, Chi square analysis revealed no significant relationship to intention to use NP services (X^2 = .214, p > .05). Third party reimbursement significantly increased willingness to use the services (X^2 = 137.58, p < .001). Positive health attitudes in the absence of disease (i.e., periodic health checks) was significantly related to intention to use services (X^2 = 12.20, p < .001).

Pender and Pender's (1980) research raised the question of whether there would be a consumer market for APNs in a reformed health care system with a recognized overabundance of physicians and the finite amounts of health care dollars in 1994. Smith and Shamansky (1983) used a structured questionnaire during telephone interviews of 420 households in Seattle, Washington, to determine the consumer market for NPs. Of the 420 households contacted, complete data were obtained from 239. Sixty percent of the respondents were female. The mean age of the respondents ranged from 18 to 29 years. The mean income of the respondents was between $15,00 and $25,000. The questionnaire consisted of 42 items divided into two subgroups: role of the NP and subject reactions to innovation. Items assessing roles were measured on a Likert-type scale where each item was rated 1 (does not know) to 4 (not important). Examples of items in this subset are: (a) Do you know what an NP is? and (b) How important would it be to know that an NP would make a house call if you could not come to the office? Statements regarding innovation included: (a) my family might favor my going to a family NP for health care, and (b) I might need to change the way I take care of myself if I went to a family NP. Data were collected in 1980. Subjects were first asked to rate themselves as potential users on a scale of 1 (nonuser) to 10 (user). The subjects were then grouped into two maximally differentiated groups--the potential users who rated themselves 9 or 10 (n = 65) and

the potential nonusers who rated themselves 1 to 4 (n = 30). Chi-squared analyses revealed characteristics of the potential marker for NPs. The potential users were generally younger ($p < .001$), female ($p < .001$), in higher income groups ($p < .05$), and employed full-time ($p < .01$). Potential users valued teaching by the family NP ($p < .05$). Potential users would be willing to tell their friends and relatives about any care they received from NPs ($p < .001$). Care provided by the family NP was perceived as understandable by potential users ($p < .01$). Potential users believed the costs and benefits of care provided by the family NP made it worth trying ($p < .001$).

Using discriminant analysis, alternate linear combinations of the independent variables revealed that "My family might favor me going to an FNP" accounted for 56% of the variance. In combination, the eight variables accurately classified 100% of the potential users and 86% of the nonusers. Primary discriminant analysis of the innovation scale revealed that potential nonusers were more likely to select "do not know." Discriminant analysis suggested that demographic variables, independent of other variables, cannot accurately discriminate between potential users and nonusers of family NPs.

A similar study was completed in the New Haven, Connecticut, area by Shamansky, Schilling, and Holbrook (1985). The 42-item instrument used in the previous study was expanded to 71 items and included the subscales of innovation, buying behavior, system factors, cost of care,

and demographic and psychographic characteristics of the respondents. The innovation subscale has previously been described. The buying behavior subscale was a Likert-type scale that asked the consumer how likely they would be to purchase certain items (i.e., a cordless phone). The buyer subscale had an internal reliability coefficient of .64. The systems factor subscale included role functions such as house calls and time spent with patients. The internal consistency for this subscale was .69. The cost subscale was Likert-type with choices ranging from definitely would not use to definitely would use. The reliability coefficient for this scale was .94. The demographic and psychographic characteristics included age, household size, occupation, education, income, payment mechanism, source of care and where received, type of health care provided, frequency of contact with health care provider, and satisfaction with present health care. The findings reported found 32.9% of the respondents with prior knowledge of NPs. To the questions "Do you think the NP services are different than one provided by physicians? If yes, how are they different?", 54.2% of the respondents thought there was no difference, 16.3% reported positive differences, and 10.8% reported negative differences. The positive differences included the belief that the NP would get to know the individual and the family better, while a negative difference was that the nurse is not as scientific as the doctor. In response to the question "What is it you want in your health care that you are not getting now?",

54.2% were satisfied with their current level of care. Other responses included availability (15.2%), lower cost (11.4%), comprehensive care (7.9%), continuity (5.7%), and convenience (4.7%). Consumers rated time spent with client, house calls, copy of health records, physical facility characteristics such as space, and equipment important to health care. Buying behavior was not significantly related to innovation (OR = 1.13, p = .74). In regard to buying readily, 27.6% of respondents said they would buy a new item on the recommendation of a friend, while 55.3% stated they would buy it after a reasonable time after quality had become public. There was a significant relationship between education and buying behavior with high school or vocation school graduates 1.65 times as likely as college graduates to buy readily. The advantage of the innovation of NP was measured through the response to the statement "Going to an NP would offer advantages over the way I presently get health care." Among 326 respondents, 58.3% indicated agreement, 35.3% disagreed, and 6.4% did not know. The 58.3% indicating agreement tended to be younger, less than 30 years of age (OR = 2.6, p = .001), well educated (OR = 3.06, p = .001), and from lower income levels. Cost of care was significant to consumers, with 79.3% reporting they would seek NP services if they were covered by their insurance plans and 63.8% reporting they would not seek care if the NP's services were noncovered by their insurance plans. If the services of the NP cost the same as the services of a

physician, 44.9% would decline NP services. If NPs' services cost less, 70.2% would seek their services. Chi-square analysis provided association between cost of care and demographic variables. The demographic variables that were significantly related included satisfaction with current care and family size. Age was also significantly related to seeking care, as users tended to be somewhat younger, 43.4 years. All other demographic and psychographic variables did not influence intent to seek NP services if covered by insurance. Shamansky concluded that it would be useful to explore the relationship of the present health status of respondents, the severity of symptoms when health care is sought, and usual source of care in determining the market for NP services.

Conclusion

The research discussed reveals decreased availability and accessibility of health care to poor, low income, African American and Hispanic citizens residing within the United States. These variables have been shown to have a negative impact on health attitudes resulting in delays in seeking health care services. This behavior puts already high-risk groups at even more risk for worsened prognosis and outcomes.

The research reviewed on the use of NPs and CNMs demonstrates that these health care providers have the potential to be a viable alternative to classical methods of providing health care for a variety of patients. Availability, accessibility, and acceptability have been

increased by the use of APNs in treating the groups most at risk in our society. With major health care reform imminent, research is needed to document the relationship of health care access, health status, and health behavior to willingness to use APNs. Knowledge of variables of the public's willingness to use APNs could be used to enhance policies that dictate practice, educational programs, and model designs of the health care delivery system.

CHAPTER III

Methodology

The purpose of the research was to assess factors related to the willingness to use APNs. In the study, willingness was defined as the selection of an APN as a primary health care provider when given alternatives that included physicians.

The factors assessed were categories of variables that the National Medical Expenditure Survey (NMES) (U.S. Department of Health and Human Services [USDHHS], 1991) had identified as major determinants of the utilization of health care services in general; namely, level of access to health care, health care status, attitudes toward health care, and demographic variables. The research addressed the following four questions.

1. What is the relationship between health care access and willingness to use APNs?

2. What is the relationship between health status and willingness to use APNs?

3. What is the relationship between the demographic variables and willingness to use APNs?

4. What is the relationship between attitudes toward health and willingness to use APNs?

Method

Health care access, health status, and attitudes were measured with items based on those included in the NMES, (USDHHS, 1991). The assessment of health care access examined not only the presence or absence of a source of usual care but also the specific nature of this source and factors related to its utilization. Within the subsample of respondents who did not have access to a source of "usual" medical care, variables that could account for this lack of access were examined.

Health status was assessed with self-ratings of overall health, health-related limitations of physical activities, recent specific health problems, and the presence or absence of serious conditions that had been diagnosed by a doctor. Attitudes toward health were assessed in the context of perception of the value of health care professionals, the importance of health insurance, and the relationship between the availability of medical care and the ability to pay for such care.

A correlational design was used to investigate the relationship between willingness to use APNs and health care access, health status, attitudes toward health, and demographic variables.

Subjects

Random sampling was applied to obtain 500 adults (18 years of age and older) from the community of Evansville, Indiana. The strata into which the population was divided consisted of age, gender, and race. Based on the

demographics of the population of Evansville, Indiana (U.S. Bureau of the Census, 1990), the sample was 46% male, 54% female, 90% Caucasian, and 10% African Americans (American Indians, Asians, and "others" made up less than 1% of the population). Fourteen percent of the sample was 18 to 25 years old, 41% was 25 to 44 years old, 18% was 45 to 64 years old, and 27% were 65 years old and older. The median family income was $24,798.

Evansville's population of 126,272, is mostly a blue-collar worker, midwestern community, with a long history of strong union relationships between workers and management of industry. Industries, such as Bristol-Meyers, Whilrpool Corporation, Alcoa-Aluminum, and most recently Toyota, demand a skilled work force and highly educated management team. The community supports a 4-year public and a 4-year private university. Two technical colleges are located in the community.

Instrumentation

The researcher-designed instrument, PWUAPN (Appendix A), was used to assess level of accessibility to health care, health status, attitudes toward health, demographic variables, and willingness to use APNs. The instrument was designed to be self-administered and contained 68 items.

Survey items that assessed health care access, health status, and attitudes toward health were based on those included in the NMES (USDHHS, 1991). The NMES questionnaires were designed to provide sets of explanatory variables relevant to the analysis of health care

utilization but did not assess willingness to use APNs. Some items were used directly, such as height, weight, and breast exam, and others were used as a guide and reworded.

The evaluation of access to care began with a determination of the presence or absence of a "usual" source of care and, if present, the specific type or nature of this source. For respondents that acknowledged a usual source of care, the accessibility of the care was assessed with items focusing on limitations of accessibility, such as office hours, the necessity for appointments, distance from the source of care, and the amount of time required to utilize the source of care. For respondents who indicated the absence of a usual source of care, the survey contained a number of items whose purpose was to identify the specific reasons for such an absence.

Health status was assessed with items designed to provide a general self-rating of health and the magnitude of health related limitations affecting a variety of physical activities. In addition, items were included that assessed emotional health and the presence or absence of a number of specific serious conditions identified by a doctor's diagnosis. Health attitudes were assessed by items that focused on the respondent's perceptions of the relationship between individual behaviors and health, the importance of health insurance, the role and value of health care professionals, and the relationship between the availability of medical care and the ability to pay for such care. Demographic variables included race, gender,

age, marital status, education, family size, and type of public or private health insurance coverage. Socioeconomic variables consisted of income, home ownership, and the use of food stamps.

Finally, the instrument, PWUAPN, provided participants with a description of the education of and services provided by APNs. This description was followed by an assessment of the degree of willingness to use APNs under 13 different circumstances. These circumstances were designed to differ with regard to the nature of the medical service, the extent to which the service was accompanied by a reduction of barriers to access, and the extent of physician involvement. Each of the 13 items was assessed on a 5-point Likert-type scale, ranging from strongly agree (that the participant would use APNs) to strongly disagree.

Procedure

After receiving approval from the University of Alabama at Birmingham's Institutional Review Board (IRB), quota sampling from the population of Evansville, Indiana, was carried out by three students enrolled in an undergraduate research methods classs. The 3,150 existing city blocks in Evansville, Indiana, were assigned a number, which was placed in a container for selection. One of the research assistants randomly selected 100 blocks to comprise the sample. Five participants were interviewed from each of the blocks selected. Participants were interviewed until the gender, age, and race distribution for the sample approximated the population distributions of

Evansville, Indiana. Prior to contacting prospective respondents, the students were trained by the investigator. Students were provided with a written explanation, which was given upon the initial approach to the potential respondent. The explanation assured the person that participation was voluntary and that information would be confidential and would be used only for the purpose of the study. If questions were asked regarding "who an advanced practuce nurse was," the students were instructed to read the description at the beginning of the willingness scale in the instrument. They were to include descriptors such as NPs, nurse midwives, and CNSs. If any physician/APN comparison questions concerning the 13 conditions of willingness to use were asked, the students were to answer "the same as."

Potential subjects were contacted between February 28, 1996, and May 30, 1996. Each were requested to complete the survey by responding to questions by the interviewers who also recorded the responses. Interviewers answered any questions concerning the questionnaire. Subjects who expressed a preference to do so were permitted to self-administer the questionnaire. All questionnaires were completed at the time of initial contact with the interviewer to prevent the need for future retrieval or mailing.

Respondents were advised that their participation was voluntary and that withdrawal from the study was permitted

at any time. Individuals were not identified in any manner and confidentiality was assured at all times.

Analysis of Data

Statistical analysis consisted of a series of regression analyses. The purpose of each analysis was to determine the proportion of variability in willingness to use APNs. Separate regression analyses assessed the relationship between willingness to use APNs and access to health care, health status, attitudes toward health, and demographics, respectively.

Responses to the 13 items in the PWUAPN were made on a 5-point Likert scale. Each respondent's score consisted of the sum of the 13 ratings. Scores ranged from 13 to 65.

Because each of the four factors that predicted willingness to use APNs were assessed with a number of different variables, a multivariate approach to data analysis was employed. Further, because variables within the categories of access, status, attitudes, and demographics represented different dimensions of each particular category, a series of analyses was required to address each major research question.

The primary analytic technique consisted of simultaneous (standard) multiple regression. This regression model provided not only the proportion of variability in willingness to use APNs accounted for by the combined set of predictor variables but it also accounted for the increment in variability accounted for by each predictor variable considered as if it had been entered

into the regression equation following the entry of all other predictors.

While the individual items that made up the variable of willingness to use APNs were measured on an ordinal scale and, therefore, did not meet the assumptions required for multiple regression, it was anticipated that their relationships to predictor variables and to one another would provide valuable information about willingness to use APNs. Specifically, the individual items provided data from which it was possible to determine the circumstances under which people were more or less likely to use nurses as primary care providers and the underlying dimensions of willingness to use APNs.

In addition to providing descriptive statistics to summarize the responses to individual items, exploratory analyses were performed to determine the relationships between individual items and the variables of access, status, attitudes, and demographics. These exploratory analyses included both simple correlations and stepwise multiple regressions. The latter consisted of conceptualizing each of the 13 items as a predictor variable and key (as identified in the primary analyses), access, status, attitudinal, and demographic variables as the criterion. These analyses determined which subset of the individual items employed to assess willingness to use APNs accounted for the greatest proportion of variability in the key health and demographic variables.

To assess the underlying dimensions of willingness to use APNs, a principle component (factor) analysis of the 13 items was performed. This analysis also served to refine the instrument for purposes of future research. All analyses were performed with the SAS Version 6.03 (SAS Institute, 1983) computer program.

Sample Size

The determination of the appropriate sample size for the proposed research was based on a consideration of two factors. The first factor was guided by the desire to obtain a sample that was representative of the target population, which consisted of the adult residents of Evansville, Indiana. In this regard, the appropriate sample size was ultimately dependent upon the interrelated factors of the heterogeneity of the sample on the variables being studied, the number of variables assessed, the level of precision desired, and the type of sampling design employed. Because of the large number of variables being assessed and the absence of estimates of heterogeneity, the following procedure was applied.

The primary measure assessed was willingness to use APNs. Scores on this variable ranged from 13 to 65. Assuming that the mean of the population was 39, the maximum standard deviation of the population would be 26. With a sample of 500, the standard error of the mean would equal 1.11. In this case, the 95% confidence interval was between 36.82 [39 - (1.96) (1.11)] and 40.88 [3 + (1.96) (1.11)], which would represent a major error of $\pm$ 2.18 for

this variable. Because this confidence interval was based on an undoubtedly extreme estimate of the standard deviation of a population assumed to consist of an infinite number of people, the actual confidence interval was expected to be smaller.

The second factor concerned the power of the statistical analyses. Because multiple regression analyses was applied to assess relationships between the criterion variable of willingness to use APNs and sets of predictor variables, the determination of what constitutes an appropriate sample size merited special attention. In addition to sample size, the power of a regression analysis was a function of the number of predictor variables, the magnitude of the multiple correlation coefficient ($\underline{R}$), and the significance level at which hypotheses were tested (alpha).

Because a large number of analyses were performed to address multiple research questions, a more conservative level of .05 was adopted to guard against an inflation of family-wise (vs. per comparison) type I error rate. Given a fixed significance level of .05, the investigator primarily addressed the issues of the maximum number of predictor (independent) variables that would be included in any one analysis, the magnitude of the effect to which the regression analysis was sensitive (i.e., $\underline{R}^2$), and sample size.

Although the w^2 (omega squared) statistic is the most frequently applied measure of treatment effect in

experimental research, $\underline{R}^2$, which represents the proportion of variability in the criterion variable that can be accounted for by the combined predictor variables, is the appropriate measure in correlational research (Keppel, 1991). As can be seen in the following formula, which provided an $\underline{F}$ test of significance of $\underline{R}^2$, analyses that are sensitive to relatively small relationships require large sample sizes to achieve reasonable power where:

$$F = \frac{R/K}{(1-R)/(N-K-1)}$$

$\underline{N}$ = sample size, K = number of predictor variables, and $\underline{df}$ = (K, N-K-1).

Conventionally, power estimates are made on the basis of the minimum effect (relationship) size that the investigator wishes to detect. In this research, because a sample size of 500 was determined to be adequate to obtain a representative sample, the determination of the power of the statistical analyses applied was based on this sample size. Finally, because the accuracy of estimates of the relationship between predictor and criterion variables in the population increased as the ratio of subjects to predictor variables increased, a minimum requirement was to have five times as many subjects as predictor variables (Tabachnick & Fidell, 1989). This study employed a minimum ratio of 35:1. Given this ratio, an examination of each category of predictor variables included in the instrument indicated that the maximum number of predictor variables included in any one of the multiple regression analyses did not exceed 134.

Given a sample size of 500, a power analysis was performed to assess the magnitude of effects to which the analysis would be sensitive (i.e., would lead to the rejection of the null hypothesis of $\underline{R}^2 = 0$) under the following constraints: (a) the maximum number of predictor variables in any regression analyses was 13, and (b) the minimum number ratio of subjects to predictor variables was 35:1. On this basis, as illustrated below, it was determined that, with a sample of 550 subjects and 13 predictor variables, $\underline{R}^2$ values of .06 or greater would be statistically significant. All regression analyses involving fewer than 13 predictor variables and with a subject to variables ratio greater than 35:1 were even more sensitive.

$$2.18^* = \underline{R/13}$$

$$(1-\underline{R})/500-13-1)\ \underline{R} = .06$$

*critical value for $\underline{F}$ for $\underline{df}$ = 13, 485, alpha = 0.5

The reliability of the scale developed to assess willingness to use APNs was assessed with the alpha coefficient (Cronbach, 1972), a measure of the internal consistency of responses to all items on the scale. The reliability of the instrument was high, with $\underline{r}11 = .95$. The two sources of error variance to which the alpha was sensitive was content sampling and the heterogeneity of the behavior domain sampled.

In addition, cross validation of the results of the multiple regression analyses was performed to provide an estimate of shrinkage, which is the tendency for multiple

correlation coefficients derived from a sample to overestimate the population value. Cross validation was assessed by randomly splitting the sample in half and comparing the squared multiple correlation coefficients obtained from each.

Limitations

This research had several limitations that had the potential to affect the validity of the findings. With regard to external validity, it was recognized that the generalizability of the results would be limited by both the sampling procedure and the population from which the sample was selected.

With respect to the sampling procedure, the use of quote sampling entailed the identification of relevant strata into which the sample was divided, followed by a determination of the proportion of the population that fell into each stratum. The sample was then selected in a manner that ensured that the proportions of the sample falling into each stratum equaled those of the population. However, unlike stratified random sampling, in which subjects within each stratum are randomly selected, each stratum obtained through quote sampling cannot be assumed to be representative of the corresponding stratum in the population. In addition, even if the sample was representative of the population with regard to the identified strata, it could not be assumed that it would be with regard to other important variables. Therefore, the

sample assessed could not be assumed to be representative of the population.

However, the external validity of the results was further limited by the relatively narrowly defined population from which the sample was selected. That is, it could be assumed that the willingness to use APNs in the population from which the sample was drawn represents the level in other populations that may differ on a number of variables related to willingness. The same limitation was true of the identified relationships between willingness to use APNs and health status, attitudes toward health, health care access, and demographic variables.

The most obvious limitation with regard to internal validity was the correlational design that was employed. However, in addition to the inability to identify causal relationships between willingness to use APNs and other variables, limitations to the validity of the measurement of the variables per se were considered.

One area of concern was the possibility that the validity of the measures could be affected aversely by the operation of response sets. With regard to willingness to use APNs, it was possible that the responses of some of the subjects represented an attempt to "please the investigator" if they viewed the purpose of the research as an attempt to demonstrate a willingness to use APNs. While not necessarily a deliberate deception, to the extent that it was related to ratings of willingness to use APNs, the validity of the scale was reduced.

Further, because measures of health status were based on self-reports, their validity rested on the extent to which subjects possessed an accurate understanding of their health status. A possible result was that subjects with the same condition may have had different perceptions of both the seriousness of the condition and the extent to which it influenced their activities.

While the ideal measure of willingness to use the service of APNs would consist of a behavioral measure (that is, the extent to which advance practice nurses are actually used), this research employed an operational definition based on responses to hypothetical scenarios. The validity of this operational definition was a function of the extent to which actual behaviors under real circumstances could be assumed to be related to judgements made in response to hypothetical circumstances.

CHAPTER IV

Findings

The purpose of the research was an assessment of factors that have been reported in the research literature to be related to willingness to use APNs. Of the 605 respondents sampled, 42.3% were male and 57.7% were female. Ages of the respondents ranged from 18 to 87 years, with a mean age of 44.96 years. The mean family income after taxes was $28,950. Racial composition of the sample was 81.9% Caucasian, 13.6% African American, 2% American Indian, 0.8% Hispanic, 0.8% Asian or Pacific Islander, and 0.8% other racial backgrounds. Slight oversampling of the African American population was done to approximate the 1990 U.S. Census Bureau's percentage for this group. Of the 604 who responded to educational level, 8.8% lacked a high school education. Of the remainder, 28% were high school graduates, 16.7% had some college, 6.6% had a 2-year college degree, 8.3% were graduates of trade schools, 16.7% were 4-year college graduates, 4.5% had some college past 4 years, 8.1% had a master's degree, and 2.3% had doctoral or professional degrees.

Table 1 presents the mean overall willingness score to operationally defined APNs. Overall, willingness to use APNs was the mean of the responses to the 13 survey items,

Table 1

Mean Score for Willingness to Use Services of an APN Under Different Conditions

Condition: If APN . . .	n	M	SD
Saw me immediately and I had to wait 3 days to see a doctor	602	1.95	.84
Treated emergencies after office hours	603	2.04	.87
Services were paid by my insurance	603	2.08	.89
Wrote prescriptions to a pharmacy	604	2.14	.92
Had office hours that were convenient	602	2.19	.90
Made house calls	601	2.20	.95
Services did not differ from doctor's	604	2.20	.90
Could provide care for the entire family	603	2.21	.92
Spent more time with me	602	2.29	.93
Had office closer to home	601	2.29	.98
Could treat my children at school	596	2.42	1.02
Office was located at a distance from the collaborating doctor	602	2.74	1.10
Services were not paid by my insurance	600	3.41	1.14

each of which assessed willingness under a different situation or circumstance on a 5-point scale upon which 1 represents strongly agree, 2 represents agree, 3 represents

uncertain, 4 represents disagree, and 5 represents strongly disagree. For each item, strongly agree was associated with the greatest willingness. Higher values were associated with less willingness to use APNs. The mean overall willingness to use APNs was 2.32 (SD = .76).

Table 2 presents the distribution of responses for each of the 13 items. Willingness to use APNs under each condition was assessed on a 5-point scale.

Table 2

Willingness to Use APNs Under Different Conditions (Percent of Respondents)

Condition: If APN . . .	n	SA	A	U	D	SD
Saw me immediately and I had to wait 3 days to see a doctor	602	30.1	51.5	12.8	4.5	1.2
Treated emergencies after office hours	603	26.2	52.2	14.6	5.5	1.5
Services were paid by my insurance	603	24.4	52.9	15.1	5.6	2.0
Wrote prescriptions to a pharmacy	604	22.8	52.2	15.7	7.1	2.2
Had office hours that were convenient	602	18.8	55.0	16.9	6.8	2.5
Made house calls	601	21.8	38.9	18.1	9.3	1.8
Services did not differ from doctor's	604	19.4	53.0	18.0	7.8	1.8
Could provide care for the entire family	603	20.1	50.2	20.7	6.5	2.5
Spent more time with me	602	17.9	47.7	23.8	8.6	2.0
Had office closer to home	601	18.1	50.2	19.0	9.5	3.2

Table 2 (Continued)

Condition: If APN . . .	n	SA	A	U	D	SD
Could treat my children at school	596	17.3	43.0	24.2	11.9	3.7
Office was located at a distance from the collaborating doctor	602	11.3	35.5	28.1	17.8	7.3
Services were not paid by my insurance	600	7.0	12.5	31.8	29.8	18.8

Note. SA = strongly agree. A = agree. U = uncertain. D = disagree. SD = strongly disagree.

Relationship Between Demographic Variables and Willingness to Use APNs

The following tables describe the sample on the categorical demographic variables of gender, marital status, racial background, and education, respectively. The variable of age is broken down in yet another table.

Gender

The sample consisted of 57.7% females (n = 349) and 42.3% males (n = 256). A point-biserial correlation between the dichotomous variable of gender and the continuous variables of overall willingness to use APNs indicated that the relationship between the two variables was not significant, $r_{pb}(582) = .01$, $p > .05$. The relationship between gender and willingness to use APNs under each of the 13 specific conditions was assessed with Spearman correlations between gender and each of the 13 ordinally scaled items, which together comprise the

variable of overall willingness to use APNs. None of the correlations was significant.

Marital Status

Table 3 shows none of the point-biserial correlations between overall willingness to use APNs, and each of the five dummy coded marital status variables were significant. Further, a multiple regression analysis indicated that, together, the five dummy coded marital status variables did not account for a significant proportion in the variability in willingness to use APNs, $R(5, 576) = 12$, $p > .05$. None of the Spearman correlations between each of the five dummy coded marital status variables and willingness to use APNs under each of the 13 specific conditions were significant.

Table 3

Sample by Marital Status

Marital Status	n	Percent	r_{pb}
Married	332	55.4	.06
Divorced	114	19.0	.00
Separated	17	2.8	-.06
Widowed	52	8.7	.00
Single	84	14.0	-.04

Note. N = 599.

Racial Background

Table 4 shows none of the point-biserial correlations between overall willingness to use APNs, and each of the seven dummy coded racial background variables was

significant and, together, the seven variables did not account for a significant proportion of the variability in willingness to use APNs, $R(7, 574) = .05$, $p > .05$. None of the Spearman correlations between the racial background variables and willingness to use APNs under each of the 13 specific conditions were significant.

Table 4

Sample by Racial Background

Racial Background	n	Percent	r_{pb}
American Indian	12	2.0	.01
Caucasian	494	81.9	-.02
Asian or Pacific Islander	5	.8	.02
African American	82	13.6	.02
Puerto Rican	1	.2	.00
Cuban	2	.3	-.02
Mexican or Mexican American	2	.3	.01
Other	5	.8	.02

Level of Education

The variable of level of education was transformed into nine dummy coded dichotomous variables. Table 5 shows the variable of whether the respondent had less than a high school education and was significantly associated with willingness to use APNs, $r_{pb}(582) = .08$, $p < .05$, with lack of a high school education associated with a greater willingness to use APNs. Together, the nine variables did

not account for a significant proportion in the variability in willingness to use APNs, $R(8, 573) = 12$, $p > .05$.

Table 5

Sample by Educational Level

Educational Level	n	Percent	r_{pb}
Not a high school graduate	53	8.8	-.08*
High school graduate	169	28.0	-.01
Some college	101	16.7	-.02
2-year associate college degree	40	6.6	.02
Trade or specialized school	50	8.3	.00
4-year college degree	101	16.7	-.01
Some college beyond 4 years	27	4.5	.02
Master's degree	49	8.1	.08
Doctoral or professional degree	14	2.3	.03

Note. $N = 604$.
*$p < .05$.

Level of education was, however, associated with willingness to use APNs under four conditions. Not having graduated from high school was associated with a greater willingness to use APNs if the nurses' offices "were closer to home," $r_s(601) = .08$, $p < .05$. Lack of a high school education, $r_s(600) = .10$, $p < .05$, and graduation from high school, $r_s(600) = .10$, $p < .05$, were associated with an increased willingness to use APNs, and a 4-year college degree, $r_s(600) = .08$, $p < .05$, and some college beyond a 4-year degree, $r_s(600) = .10$, $p < .05$, were associated with

a decreased willingness to use APNs if services were not paid by the respondent's insurance.

Even if the nurse "spent more time with me and my family," $r_s(602) = .10$, $p < .05$, the possession of a master's degree was correlated with less willingness to use APNs. Not having a high school education was associated with a greater willingness, $r_s(601) = .10$, $p < .05$, to use APNs under the condition "if the nurse made house calls," and a master's degree was associated with less willingness, $r_s(601) = .08$, $p < .05$. On the other hand, a master's degree was correlated with unwillingness to use APNs even if the nurse made house calls.

Age

Ages of the respondents ranged from 18 to 87 years and, for the 601 who reported their age, the mean age was 44.96 years (SD = 15.60). Table 6 shows the frequency distribution of the sample by age. The relationship between age and overall willingness to use APNs was not significant, $r(578) = .04$, $p > .05$. Increasing age was associated with a decreased willingness to use APNs under conditions in which regular office hours were maintained at the most convenient times, $r_s(598) = .09$, $p < .05$; the services were not different from those provided by a doctor, $r_s(600) = .11$, $p < .01$, and the nurse could be seen immediately (vs. waiting 3 days to see a doctor), $r_s(598) = .10$, $p < .05$.

Socioeconomic Variables

Demographic variables assessed primarily for the purpose of obtaining measures of socioeconomic level included the number of children that lived in the home, the

Table 6

Sample by Age

Age	n	%
18-20	13	2.2
21-30	112	18.6
31-40	124	20.6
41-50	155	25.8
51-60	80	13.3
61-70	75	12.5
71-80	35	5.8
81-90	7	1.2

Note. N = 601.

total number of people living at the respondent's residence, annual after-taxes income, whether anyone living in the respondent's residence purchased or received food stamps during 1995, and whether the residence of the respondent was owned by either the respondent or a family member.

The number of children that lived in the home ranged from 0 to 5 (M = .99, SD = 1.06) and the total number of people living at the respondent's residence ranged from 0 to 8 (M = 3.33, SD = 1.24). Neither number of children

living in the home, $r(545) = .04$, $p > .05$, nor total number of people in the home, $r(569) = -.05$, $p > .05$, was significantly correlated with overall willingness to use APNs. However, increases in both the number of children and total household size were associated with greater willingness to use APNs if the services were paid for by insurance, $r_s(565) = .09$, $p < .05$, and $r_s(590) = .10$, $p < .05$, respectively, and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), $r_s(564) = .13$, $p < .005$, and $r_s(589) = .15$, $p < .0005$, respectively.

The mean household annual after-tax income ranged from $2,488 to $120,000 ($M$ = $28,950, SD = 20,785). The Pearson correlation between willingness to use APNs and household income was not significant, $r(568) = .02$, $p > .05$. Income was significantly correlated with willingness to use APNs under the condition in which the services were not covered by insurance, $r_s(586) = .22$, $p < .0001$, with increases in income associated with decreases in willingness to use APNs under this particular condition.

Of the 596 respondents measured on the variable, 11.4% (n = 68) reported that they had, and 88.6% (n = 528) reported that they had not purchased or obtained food stamps during 1995. There was a significant positive correlation between whether food stamps had been used and an overall willingness to use APNs, $r_{pb}(573) = .11$, $p < .01$, indicating that the use of food stamps was associated with greater willingness to use APNs. Further, the use of food stamps was associated with greater willingness to use

APNs under each of the following conditions: if the services were not paid for by insurance, $r_s(591) = .10$, $p < .05$; if the nurse spent more time with the respondent, $r_s(593) = .10$, $p < .05$; if the services were not different from those provided by a doctor, $r_s(595) = .13$, $p < .005$; if the nurse made house calls, $r_s(592) = .12$, $p < .005$; if the nurse wrote prescriptions, $r_s(595) = .09$, $p < .05$; and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), $r_s(593) = .11$, $p < .01$.

Sixty-two percent ($n = 375$) of respondents owned their homes and 38.0% ($n = 230$) did not. No significant relationship was found between home ownership and overall willingness to use APNs, $r_{pb}(582) = .03$, $p > .05$. Also, no significant correlations were found between home ownership and willingness to use APNs under any of the 13 specific conditions assessed.

Public and Private Health Insurance

The final category of demographic variables analyzed was health insurance variables. Table 7 presents frequency distributions for coverage by Medicare, Medicaid, or any other public assistance program, other than Indiana Medicaid.

No significant relationships were found between willingness to use APNs and whether the respondents were covered by Medicare, $r_{pb}(582) = .04$, $p > .05$, or whether they were covered by any public assistance program, other than Indiana Medicaid, $r_{pb}(582) = .08$, $p > .05$. Coverage by Medicaid was associated with an increased overall

Table 7

Sample by Medicare, Medicaid, and Any Other Public Assistance Program Insurance Coverage

Government program	n	Percent	r_{pb}
Medicare	108	17.9	-.04
Medicaid	64	10.6	-.11*
Other public assistance	27	4.5	-.08

Note. N = 605.
*p < .05.

willingness to use APNs, $r_{pb}(582) = .11$, $p < .05$. The presence of coverage by Medicare was, however, associated with an increased willingness to use APNs under conditions in which the services were not paid by insurance, $r_s(600) = .08$, $p < .05$; the nurse was located in a remote area away from the collaborating doctor's office, $r_s(602) = .11$, $p < .01$; and if the nurse made house calls, $r_s(601) = -.09$, $p < .05$.

Coverage by Medicaid was associated with an increased willingness to use APNs under each of the following conditions: if the office of the nurse was closer to home, $r_s(601) = .10$, $p < .05$; if the services were paid by insurance, $r_s(603) = .11$, $p < .01$; if the nurse spent more time with the respondent, $r_s(602) = .09$, $p < .05$; if the services were not different from those provided by a doctor, $r_s(604) = -.09$, $p < .05$; and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), $r_s(602) = -.09$, $p < .05$. Coverage by any other public

assistance program, other than Indiana Medicaid, was associated with an increased willingness to use APNs under conditions in which the services were not paid by insurance, $r_s(600) = -.09$, $p < .05$, and the nurse was located in a remote area away from the collaborating doctor's office, $r_s(602) = -.10$, $p < .05$.

In response to the question--"Do you have health insurance from any of the following: an employer or family business, a union, an insurance company?"--80.6% ($n = 485$) responded "yes" and 19.4% ($n = 117$) responded "no." A significant relationship was found between willingness to use APNs and whether the respondents were covered by one of the four categories of health insurance listed above, $r(581) = -.12$, $p < .05$. That is, the possession of health insurance defined by these categories was associated with decreased overall willingness to use APNs.

Table 8 presents the percentage of the respondents who reported that they did have health insurance who were covered by each of the four insurance programs listed above. The possession of health insurance was associated with a decreased willingness to use APNs under each of the following conditions: the office of the nurse was closer to home, $r_s(599) = -.09$, $p < .05$; the services were not paid by insurance, $r_s(597) = -.19$, $p < .0001$; the nurse spent more time with the respondent, $r_s(599) = -.11$, $p < .01$); the services were not different from those provided by a doctor, $r_s(601) = -.10$, $p < .05$; the nurse made house calls, $r_s(598) = -.11$, $p < .01$; emergencies were treated

after office hours, $r_s(601) = -.08$, $p < .05$; the nurse wrote prescriptions, $r_s(601) = -.12$, $p < .005$; and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), $r_s(599) = -.09$, $p < .05$.

Table 8

Source of Health Insurance Programs Possessed by Respondents Who Reported Coverage

Source of insurance	n	Percent	r_{pb}
Employer or family business	327	67.7	.02
Union	23	4.8	.06
Insurance company	127	26.3	.08*
Other	8	1.2	-.07

Note. N = 483.
*$p < .05$.

No significant relationships were found between overall willingness to use APNs and whether the respondents were covered by an employer or family business, $r_{pb}(582) = .02$, $p > .05$; or a union, $r_{pb}(582) = .06$, $p > .05$. There was a significant relationship with whether they were covered by an insurance company, $r_{pb}(582) = .08$, $p < .05$, with coverage by an insurance company associated with less willingness to use APNs.

Coverage by an employer or family business was associated with a decreased willingness to use APNs under conditions in which the services were not paid by insurance, $r_s(600) = .14$, $p < .001$, and the nurse made house calls, $r_s(601) = .09$, $p < .05$. Coverage by an

insurance company was associated with a decreased willingness to use APNs under conditions in which the care for the entire family was provided, $r_s(603) = .10$, $p < .05$; regular office hours were maintained at the most convenient times, $r_s(602) = .10$, $p < .05$; the office of the nurse was closer to home, $r_s(601) = .09$, $p < .05$; the services were paid by insurance, $r_s(603) = .11$, $p < .01$; the nurse spent more time with the respondent, $r_s(602) = .11$, $p < .01$; the services were not different from those provided by a doctor, $r_s(604) = .12$, $p < .005$; emergencies were treated after office hours, $r_s(603) = .08$, $p < .05$; the nurse wrote prescriptions, $r_s(604) = .13$, $p < .005$; and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), $r_s(602) = .13$, $p < .005$.

A multiple regression analysis was performed to determine the proportion of variability in overall willingness to use APNs that could be accounted for by the combined dichotomous variables of whether respondents were covered by Medicare, Medicaid, other public assistance, a union, an employer or family business, an insurance company, or another health insurance program. There was a significant multiple correlation, $R(7, 574) = .20$, $p > .005$, indicating that 3.92% of the variability in overall willingness to use APNs could be accounted for by the weighted linear combination of the seven predictor variables.

Based on responses to the survey items of whether respondents were covered by Medicare, Medicaid, other

public assistance, a union, an employer or family business, an insurance company, or another health insurance program, it was possible to determine which respondents were and which were not covered by one or more plans designed to wholly or partially pay or reimburse for health care expenses. Of the total 604 respondents for whom information on these item variables was available, 90.7% (n = 548) were covered by at least one plan and 9.3% (n = 56) were not covered by any plan.

Lack of health insurance coverage from any source was negatively associated with overall willingness to use APNs ($r_{pb}(581) = -.15$, $p < .0005$). Further, this lack of coverage was also significantly associated with a decreased willingness to use APNs under the following specific conditions: services to children were provided at an office located in a school $r_s(595) = -.11$, $p < .01$; the services were not paid by insurance, $r_s(599) = -.24$, $p < .0001$; the nurse spent more time with the family, $r_s(601) = -.09$, $p < .05$; the nurse was located in a remote site away from the collaborating doctor's office, $r_s(601) = -.16$, $p < .0001$; if the nurse made house calls, $r_s(600) = .15$, $p < .0005$; and emergencies were treated after office hours, $r_s(602) = -.11$, $p < .01$.

Relationship Between Access to Health Care and Willingness to Use APNs

Presence or Absence of a Source of Usual Health Care

The primary variable for measuring access to health care was the presence or absence of a "usual" source of

health care, defined as a particular place to which the respondent usually went to receive treatment, advice about health, or both. Of the 602 respondents who indicated whether they had a usual source of health care, 88.4% (n = 532) did have and 11.6% (n = 70) did not have a usual source of health care. For those 602 respondents, the means for the variable of overall willingness to use APNs were 2.33 (SD = .78) and 2.25 (SD = 2.25), respectively (on a scale upon which 2 represented agree that they would be willing to use APNs, and 3 represented uncertain). A one-way analysis of variance indicated that the difference between the means of the two groups was not significant, $F(1, 577) = .62$, $p > .05$.

To determine if the two groups differed on any of the 13 ordinally scaled questions, which together comprised the variable of willingness to use APNs, a series of Kruskal-Wallis one-way analyses of variance of ranks were performed. The two groups did not differ significantly on any of the 13 items.

Variables Associated With Source of Usual Health Care

Respondents who reported having a usual source of health care were asked to describe the specific nature of the source; whether they usually saw a doctor, how long they had been using the facility, and how much they knew about the facility prior to their first visit. They also described their use of the source in terms of the variables of the extent to which appointments were required,

appointment latency, mode of transportation used to get to the facility, and time required to get to the facility.

Nature of source of usual health care. Table 9 presents a frequency distribution of the different types of facilities that respondents identified as their usual source of health care. Over three-fourths indicated a doctor's office. The relationship between type of facility for health care and willingness to use APNs was assessed by obtaining point-biserial correlations between each of the eight dummy coded (dichotomous) "type of facility" variables listed in Table 9 and the continuous variable of overall willingness to use APNs. None of these correlations were significant. A multiple regression analysis indicated that the eight dummy coded variables together did not account for a significant proportion in the variability in overall willingness to use APNs, $R(8, 573) = .15$, $p > .05$.

The relationship between type of facility, which represented the usual source of health care, and willingness to use APNs also was assessed by examining the Spearman correlations between each of the 13 ordinally scaled items, which together comprised the variable of willingness to use APNs and whether the source of usual care was a doctor's office. In this relationship, significance occurred when services were not covered by the respondent's insurance, $r_s(530) = 10$, $p < .05$. This indicated that having a doctor's office as the source of usual care was associated with a greater willingness to

Table 9

Facilities Identified as the "Usual" Source of Health Care

"Usual" source	n	Percent	r_{pb}
Doctor's office	407	76.6	.01
Hospital clinic	65	12.2	.08
Neighborhood clinic	29	5.5	-.07
Walk-in center	16	3.0	.08
Hospital emergency room	5	.9	-.04
School clinic	4	.8	-.01
Company clinic	3	.6	.02
Respondent's home	1	.2	-.08
Other	1	.2	-.04

Note. N = 531.

use APNs under conditions in which the services were not covered by insurance. Of the 512 respondents who saw a doctor as their usual source of health care, 98.6% (n = 505) answered that they always used the physician.

Mode of transportation and time required to get to source of usual health care. Table 10 presents a frequency distribution of the different modes of transportation used to get to the usual source of health care. The relationship between mode of transportation and willingness to use APNs was assessed by obtaining point-biserial correlations between each of the six dummy coded "type of transportation" variables listed in Table 10 and overall

willingness to use APNs. None of these correlations were significant. A multiple regression analysis in which the six dummy coded variables served as predictors of willingness to use APNs indicated that the weighted linear combination of the eight variables accounted for 2.4% of the variability in willingness to use APNs, $R(6, 575) = .15$, $p < .05$. A stepwise multiple regression analysis revealed that receiving health care in the home accounted for the greatest percentage of variability in willingness to use APNs, $R(1, 575) = .08$, $p < .05$. None of the other five modes of transportation variables accounted for a significant increment in the percentage of variability in willingness to use APNs.

Table 10

Mode of Transportation Used to Get to "Usual" Source of Health Care

Mode of transportation	n	Percent	r_{pb}
Drive	434	81.6	-.06
Driven by someone else	71	13.3	.07
Walk	9	1.7	-.08
Taxi	9	1.7	.05
Public transportation	6	1.1	.05
Receive care at home	2	.4	-.08
Other	1	.2	.04

Note. N = 532.

The relationship between mode of transportation and willingness to use APNs also was assessed by examining the

Spearman correlations between each of the 13 ordinally scaled items used to assess the extent of willingness to use APNs and each of the two variables of whether the respondent drove or was driven to the source of usual care.

The variable of whether the respondent drove to the source of usual care was significantly related to willingness to use APNs if the nurse was located in a remote site away from the collaborating doctor's office, $r_s(530) = .12$, $p < .01$, and if the nurse made house calls, $r_s(530) = .15$, $p < .001$. The variable of whether the respondent was driven to the source of usual care was also significantly related to willingness to use APNs if the nurse was located in a remote site away from the collaborating doctor's office, $r_s(530) = -.14$, $p < .005$, and if the nurse made house calls, $r_s(530) = -.13$, $p < .005$. That is, respondents who drove were less willing to use APNs under the two conditions than those who did not drive, and respondents who were driven were more willing to use APNs under the two conditions than those who were not driven.

The length of time required to get to the usual place of care ranged from 1 min to 2.5 hr, with a mean of 16.99 min ($SD = 12.63$). The Pearson correlation between overall willingness to use APNs and the length of time required to get to the usual place of care was not significant, $r(495) = -.07$, $p > .05$.

Requirements for appointments and appointment latency. Table 11 presents a frequency distribution of "appointment

requirements" of the respondents' usual sources of health care. The relationship between appointment requirements and willingness to use APNs was assessed by obtaining point-biserial correlations between each of the four dummy coded appointment variables (always, usually, sometimes, and never have an appointment) and willingness to use APNs. Each of the variables (always, $r_{pb}(515) = .09$, $p < .05$; usually, $r_{pb}(515) = -.12$, $p < .005$; or sometimes, $r_{pb}(515) = .09$, $p < .05$, made prior to the receipt of heath care) were significantly correlated with overall willingness to use APNs.

Table 11

Appointment Requirements for Access to "Usual" Source of Health Care

Appointment requirement	n	Percent	r_{pb}
Always	290	55.2	.09*
Usually	157	29.9	-.13**
Sometimes	53	10.1	.09*
Never	25	4.8	-.04

Note. N = 525.
*p < .05. **p < .005.

Specifically, both always and sometimes having an appointment were associated with less willingness to use APNs, and usually having an appointment was associated with greater willingness to use APNs. Whether the respondent never had an appointment was not significantly associated with willingness to use APNs.

A multiple regression analysis found that, together, the four appointment variables accounted for 2.55% of the variability in willingness to use APNs, $R(4, 577) = .16$, $p < .005$. A stepwise multiple regression analysis revealed that whether respondents "usually" had an appointment accounted for the greatest percentage of variability in willingness to use APNs, $R(1, 580) = .11$, $p < .01$. None of the other three appointment variables accounted for a significant increment in the percentage of variability in willingness to use APNs.

Table 12 shows the relationship between appointment requirements and willingness to use APNs. Willingness to use APNs also was assessed by examining the Spearman correlations between type of appointment requirement and each of the 13 conditions under which willingness was rated. Each of the four appointment variables is dichotomous with 0 represnting no and 1 representing yes. Items used to assess willingness to use APNs were rated on a 4-point scale. Lower values were associated with a greater willingness to use APNs.

Table 13 shows the mean for latency of appointments was 7.77 days ($SD = 13.80$). Latency was not significantly related to overall willingness to use APNs, $r(497) = -.04$, $p > .05$, but, as can be seen in Table 14, was significantly related to 5 of the 13 conditions under which willingness was rated. In each case, increases in appointment latency were associated with increases in willingness to use APNs. Items used to assess willingness to use APNs were rated on

Table 12

Spearman Correlations Between Appointment Requirements and Respondents' Willingness to Use Services of an APN Under Different Conditions

Condition: If APN . . .	n	Frequency of having an appointment: A	U	S	N
Could provide care for entire family	531	.12***	-.12***	.08	-.10*
Had office hours that were convenient	531	.11*	-.12***	.07	-.05
Had office closer to home	529	.07	-.09*	.10*	-.07
Could treat my children at school	525	.06	-.07	.02	.00
Services were paid by my insurance	532	.10*	-.12***	.06	-.04
Services were not paid by my insurance	530	.07	-.03	.00	-.05
Spent more time with me	530	.11*	-.14**	.05	.00
Services did not differ from doctor's	532	.09	-.09*	.01	.01
Office was located at a distance from the collaborating doctor	530	.04	-.10-*	.09*	-.01
Made house calls	530	.10*	-.12***	.09*	-.07
Treated emergencies after office hours	531	.07	-.09*	.06	-.02
Wrote prescriptions to a pharmacy	532	.11*	-.11*	.05	-.05
Saw me immediately and I had to wait 3 days to see a doctor	531	.07	-.04	.01	-.08

Note. *p < .05. **p < ..005. ***p < .01.
A = always, U = usually, S = sometimes, N = never

a 4-point scale. Lower values were associated with greater willingness to use APNs.

Table 13

Spearman Correlations Between Appointment Latency and Willingness to Use Services of an APN Under Different Conditions

Condition: If APN . . .	n	Appointment latency
Could provide care for entire family	511	-.08
Had office hours that were convenient	511	-.12***
Had office closer to home	505	-.10*
Could treat my children at school	511	-.14**
Services were paid by my insurance	510	-.04
Services were not paid by my insurance	509	.05
Spent more time with me	511	-.05
Services did not differ from doctor's	511	-.06
Office was located at a distance from the collaborating doctor	509	-.24****
Made house calls	509	-.06
Treated emergencies after office hours	510	-.10*
Wrote prescriptions to a pharmacy	511	-.05
Saw me immediately and I had to wait 3 days to see a doctor	510	-.06

Note. *p < .05. **p < .005. ***p < .01, ****p < .0001.

Prior knowledge of and length of association with usual source of health care. Respondents rated the extent to which they "knew about" their current usual source of health care at the time of their first use as either "a great deal," "some," "hardly anything," or "nothing." Table 14 presents the frequency of responses in each category. None of the point-biserial correlations between each of the four dichotomous "knowledge" variables and overall willingness to use APNs were significant. A multiple regression analysis found that,together, the four knowledge variables did not account for a significant percentage of the variability in willingness to use APNs, $R(4, 510) = .10$, $p > .05$.

Table 14

Knowledge of "Usual" Source of Health Care Prior to First Use

Amount of knowledge	n	Percent	r_{pb}
A great deal	113	21.4	-.05
Some	233	44.1	.05
Hardly anything	110	20.8	.03
Nothing	72	13.6	-.06

Note. N = 528.

The relationship between initial knowledge about the usual source of care and willingness to use APNs also was assessed by examining the Spearman correlations between each of the 13 conditions under which willingness was rated

and each of the four "knowledge" variables. Whether respondents knew a great deal about their source of care was significantly related to willingness to use APNs under the following two conditions: if the services were not paid by insurance, $r_s(530) = -.09$, $p < .05$, and if the services were located at a remote site away from the collaborating doctor's office, $r_s(530) = -.10$, $p < .05$. With both variables, knowing "a great deal" was associated with a greater willingness to use APNs.

Whether the respondents knew "some" about their source of care was significantly related to willingness to use APNs if the services were located at a remote site away from the collaborating doctor's office, $r_s(530) = .09$, $p < .05$, with knowing "some" associated with less willingness. Whether the respondents knew "nothing" about their source of care was significantly related to willingness to use APNs if the services were located closer to home, $r_s(529) = -.10$, $p < .05$, and if the nurse could be seen immediately rather than having to wait 3 days to see a doctor, $r_s(531) = -.10$, $p < .05$. Under both conditions, knowing "nothing" was associated with a greater willingness.

The mean time that respondents had been using their usual source of care was 8.79 years ($SD = 8.14$). This variable was not significantly related to overall willingness to use APNs, $r(484) = .03$, $p > .05$, but was significantly related to willingness to use APNs if the services were located at a remote site away from the collaborating doctor's office, $r_s(499) = -.12$, $p < .01$,

with greater time of use of the usual source of care associated with an increased willingness to use APNs.

Lack of a usual source of health care. Respondents who reported having no "usual" source of health care were assessed on five variables, the purpose of which was to identify reasons for not having a usual source of health care. Respondents answered either "yes" or "no" to questions that asked if the absence of a source of usual health care was because the respondent: (a) seldom or never got sick, (b) just recently moved into the area, (c) had a usual source of care that was no longer available, (d) preferred to go different places for different health needs, and (e) perceives that places from which medical care was available was too far away.

None of the point-biserial correlations between each of the five dummies coded "reason for absence of usual source of health care" variables, and willingness to use APNs were significant. A multiple regression analysis found that, together, the five "reason" variables did not account for a significant percentage of the variability in willingness to use APNs, $R(5, 32) = .10$, $p > .05$. A total of 65 responses were given for Items 1 and 5, and 64 responses were given to Items 2, 3, and 4 (Table 15).

The relationship between reasons for the absence of a usual source of care and willingness to use APNs also was assessed by examining the Spearman correlations between each of the 13 conditions under which willingness was rated and each of the five "reason" variables. Respondents who

Table 15

Reasons for the Absence of a "Usual" Source of Health Care

Reason	n	Percent	r_{pb}
Seldom or never get sick	32	49.2	-.24
Just recently moved into area	16	25.0	.18
Usual source no longer available	9	14.1	.01
Like to go different places for care	20	31.3	-.06
Potential sources are too far away	7	10.8	.15

attributed their lack of a usual source to having "just recently moved into the area" was significantly correlated with willingness to use APNs if the services were paid by insurance, $r_s(63) = .27$, $p < .05$, with affirmations of recently moving into the area as a reason for the absence of a usual source associated with less willingness to use APNs. No other correlations were significant.

Satisfaction With Health Care

All respondents, regardless of whether they possessed a "usual" source of health care, were asked if they were satisfied with the health care that they currently received. Of the 588 total responses, 88.8% ($n = 522$) indicated that they were satisfied and 11.2% ($n = 66$) indicated that they were not satisfied. The relationship between respondents' satisfaction with the health care that they currently received and overall willingness to use APNs

was not significant, $r_{pb}(582) = -.04$, $p > .05$. Similarly, level of satisfaction with current health care was not significantly related to any of the 13 specific conditions under which willingness to use APNs was rated.

Relationship Between Health Status and Willingness to Use APNs

Health status was assessed with self-ratings of overall health; health-related limitations of physical activities; whether the respondent had missed work, school, or other scheduled activities during the preceding year because of health reasons; lifestyle; and the presence or absence of specific serious conditions that had been diagnosed by a doctor. Tables 16 through 20 describe the sample for each of these variables.

Self-rating of health as excellent, good, fair, or poor (Table 16) was not significantly related to overall willingness to use APNs, $r_s(581) = -.07$, $p > .05$. However, lower ratings of health were associated with a greater willingness to use APNs if the nurse was located in a remote site away from the collaborating doctor's office, $r_s(601) = -.12$, $p < .005$, and if the nurse made house calls, $r_s(600) = -.10$, $p < .05$.

Health-Related Limitations

Tables 17 and 18 show frequency distributions for whether poor health kept the respondent "from working at a job, doing work around the house, going to school, or participating in activities outside of your home" or whether, during the past year, poor health resulted in "missed work, school, or scheduled activities." Greater

Table 16

Self-Reported Ratings of Health

Rating of health	n	Percent
Excellent	133	22.0
Good	355	58.8
Fair	95	15.7
Poor	21	3.5

Note. N = 604.

Table 17

Self-Reported Health-Related Limitations of Physical Activity

Health-related limitations	n	%
Yes	72	11.9
No	533	88.1

Note. N = 605.

Table 18

Self-Reported Occurrence of Missing Work, School, or Scheduled Activities During the Past Year Because of Health

Missed activities because of health	n	%
Yes	177	29.9
No	533	70.1

Note. N = 592.

overall willingness to use APNs was associated with the presence of health-related limitations on activities, $r_{pb}(582) = .13$, $p < .005$.

Table 19 presents the Spearman correlations between the presence or absence of health related limitations on activities and respondents' willingness to use APNs under specific conditions. Items used to assess willingness to use APNs were rated on a 4-point scale. Lower values were associated with a greater willingness to use APNs.

Table 19

Spearman Correlations Between Presence or Absence of Health Related Limitations and Willingness to Use Services of an APN Under Different Conditions

Condition: If APN . . .	n	rs
Could provide care for entire family	603	.08*
Had office hours that were convenient	602	.11***
Had office closer to home	601	.08
Could treat my children at school	596	.09*
Services were paid by my insurance	603	.08*
Services were not paid by my insurance	600	.13**
Spent more time with me	602	.10*
Services did not differ from doctor's	604	.11***
Office was located at a distance from the collaborating doctor	602	.17****

Table 19 (Continued)

Condition: If APN . . .	n	rs
Made house calls	601	.13**
Treated emergencies after office hours	603	.10*
Wrote prescriptions to a pharmacy	604	.07
Saw me immediately and I had to wait 3 days to see a doctor	602	.06

Note. *p < .05. **p < .005. ***p < .01. ****p < .0001.

Whether health problems resulted in "missed work, school, or scheduled activities" was not related to overall willingness to use APNs, $r_{pb}(570) = .04$, $p < .05$. Respondents who missed activities due to health expressed greater willingness to use APNs if the nurse made house calls, $r_s(588) = .09$, $p < .05$, if the nurse wrote prescriptions, $r_s(591) = .09$, $p < .05$, and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), $r_s(590) = .09$, $p < .05$.

Table 20 presents a frequency distribution for 12 medical problems diagnosed by a doctor. Point-biserial correlations revealed that only the presence of diagnosed emphysema was significantly related to greater overall willingness to use advanced practice nurses, $r_{pb}(582) = -.11$, $p < .01$.

Table 20

Frequency Distributions of Serious Conditions Diagnosed by a Doctor

Condition	n	Percent	r_{pb}
Stroke	25	4.1	-.04
Rheumatism	15	2.5	-.03
Emphysema	11	1.8	-.11***
Arthritis	105	17.4	.01
Diabetes	53	8.8	-.02
Heart disease	20	3.3	-.02
Cancer (other than skin)	27	4.5	-.03
Gall bladder disease	11	1.8	-.01
Heart attack	18	3.0	.03
Hardening of the arteries	12	2.0	.03
High blood pressure	94	15.5	-.03
Other	31	5.1	.01

Note. N = 605.
***p < .01.

Weight and Height

Among males, weight (M = 189.20 lb, SD = 28.55 lb) was significantly correlated with overall willingness to use APNs, r(253) = .14, p < .05, with increases in weight associated with decreases in willingness to use APNs. The relationship between height (M = 70.66 in, SD = 2.51 in) and willingness to use APNs was not significant. Among females, neither weight (M = 147.58 lb, SD = 34.68 lb) nor

height (M = 64.60 in, SD = 3.05 in) were significantly correlated with overall willingness to use APNs.

Smoking

Of the 591 respondents who answered the question about smoking, 30.1% (n = 178) reported that they smoked cigarettes and 69.9% (n = 413) reported that they did not. Smoking was not significantly related to overall willingness to use APNs, $r_{pb}(568) = .07$, $p > .05$. With regard to willingness to use APNs under specific conditions, being a cigarette smoker was associated with a greater willingness to use APNs if the office of the nurse was closer to home, $r_s(587) = .08$, $p < .05$.

Blood Pressure Checked During Past Year

Of the 605 respondents, 75.7% (n = 458) indicated that their blood pressure had been checked during the past year, and 24.3% (n = 147) checked the no or did not know response. Blood pressure checks were not related to overall willingness to use APNs, $r_{pb}(582) = .06$, $p > .05$. Having had a blood pressure test during the past year was, however, associated with a greater willingness to use APNs if the office of the nurse was closer to home, $r_s(601) = .11$, $p < .05$.

Physical Activity

Level of physical activity was a dichotomous variable assessed by asking respondents to indicate if they often spent at least 30 min in moderate or strenuous physical activity three or more times a week or, except for ordinary activities of daily living, they did not spend much time in

physical activities. The former was selected by 48.3% (n = 292) of respondents as best describing their level of physical activity and the latter by 51.7% (n = 313). Level of physical activity was not significantly related to overall willingness to use APNs, $r_{pb}(582) = .01$, $p < .05$, but the higher level of activity was associated with a greater willingness to use APNs if the nurse was located in a remote site away from the collaborating doctor's office, $r_s(602) = -.16$, $p < .0001$.

Relationship Between Attitudes About Health and Willingness to Use APNs

General Attitudes About Health

Attitudes toward health were measured with 10 items, each of which was a statement for which respondents expressed their agreement or disagreement on a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree). Table 21 describes the percent of responses in each of the five categories of agreement for each of the 10 items.

Table 21

Respondents' Attitudes About Health (Percent of Respondents)

Attitude	n	SA	A	U	D	SD
Healthy enough not to need insurance	604	1.2	8.3	4.6	36.9	49.0
Health insurance is not worth the cost	601	3.5	8.5	11.1	42.1	34.8
More likely to take risks than average person	603	2.8	16.4	11.4	48.4	20.9

Table 21 (Continued)

Attitude	n	SA	A	U	D	SD
Can overcome most illness without help	604	3.5	21.2	12.4	46.0	16.9
Home remedies are often better than prescribed drugs	603	1.8	14.6	19.9	46.4	17.2
My own behavior determines how soon I get well	603	7.3	38.0	15.1	30.8	8.8
Understand my health better than doctors do	602	4.2	27.2	16.1	42.4	10.1
Luck is important in recovering from illness	602	0.0	6.1	7.3	55.0	31.6
Doctors only recommend surgery if it is the only solution	603	3.2	32.3	23.5	32.0	9.0
Medical care is easily available even without having money with you	601	2.3	25.0	18.6	31.8	22.3

Note. SA = strongly agree. A = agree. U - undecided. D = disagree. SD = strongly disagree.

The relationship between attitudes about health and willingness to use APNs was first assessed by obtaining Spearman correlations between overall willingness to use APNs and each of the 10 attitudes toward health items. Increased willingness to use APNs was associated with increased agreement with the attitudes that "I'm healthy enough that I don't really need health insurance," $r_s(581)$

= .10, $p < .05$, "home remedies are often better than drugs prescribed by a doctor," $r_s(580) = .09$, $p < .05$, and "doctors never recommend surgery unless there is no other way to solve the problem," $r_s(580) = .09$, $p < .05$.

Spearman correlations were also obtained between each of the 10 attitudes toward health variables and each of the 13 "conditions" upon which respondents rated willingness to use APNs. Agreement with the attitude that "I'm healthy enough that I really don't need health insurance" was associated with increased willingness to use APNs if the office of the nurse was closer to home, $r_s(600) = .09$, $p < .05$, and if the nurse was located in a remote site away from the collaborating doctor's office, $r_s(598) = -.11$, $p < .01$.

Disagreement with the attitude that health insurance is not worth the money it costs was associated with increased willingness to use APNs if the nurse had office hours at the most convenient times, $r_s(598) = -.08$, $p < .05$, if the services were not different from those provided by a doctor, $r_s(600) = -.12$, $p < .005$, and if the nurse wrote prescriptions, $r_s(600) = -.09$, $p < .05$. Disagreement with the attitude that most illnesses can be overcome without help from a medical professional was associated with increased willingness to use APNs if the services were not paid by insurance, $r_s(599) = -.09$, $p < .05$.

Agreement with the attitude that home remedies are often better than prescribed drugs was associated with increased willingness to use APNs if the office of the

nurse was closer to home, r_s (599) = .13, p < .005, if the services were paid by insurance, r_s(601) = .11, p < .01, if the nurse spent more time with the respondent, r_s(600) = .09, p < .05, if the nurse made house calls, r_s(599) = .13, p < .005, if emergencies were treated after office hours, r_s(601) = .12, p < .005, and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), r_s(600) = .08, p < .05. Agreement with the statement that "my own behavior determines how soon I get well" was associated with increased willingness to use APNs if the nurse could provide care for the entire family, r_s(601) = .08, p < .05, if the services were paid by insurance, r_s(601) = .10, p < .05, if the services were not different from those provided by a doctor, r_s(602) = .09, p < .05, if the nurse wrote prescriptions, r_s(602) = .09, p < .05, and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), r_s(600) = .12, p < .005.

Agreement with the statement that "I understand my health better than most doctors do" was associated with increased willingness to use APNs if the office of the nurse was closer to home, r_s(599) = .10, p < .05, if the services were not paid by insurance, r_s(598) = .15, p < .0005, if the nurse spent more time with the respondent, r_s(600) = .10, p < .05, if the services were not different from those provided by a doctor, r_s(602) = .11, p < .01, if the nurse made house calls, r_s(599) = .10, p < .05, if the nurse wrote prescriptions, r_s(602) = .12, p < .005, and if the nurse could be seen immediately (vs. waiting 3 days to

see a doctor), $r_s(600) = .09$, $p < .05$. Disagreement with the statement that luck plays a big part in how long it takes to recover from an illness was associated with increased willingness to use APNs if the services were not paid by insurance, $r_s(598) = -.09$, $p < .05$, if the nurse spent more time with the respondent, $r_s(600) = -.08$, $p < .05$, and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), $r_s(600) = -.09$, $p < .05$. Agreement with that statement was associated with increased willingness to use APNs if the nurse was located in a remote site away from the collaborating doctor's office, $r_s(600) = .15$, $p < .0005$.

Agreement with the statement that doctors never recommend surgery unless there is no other way to solve the problem was associated with increased willingness to use APNs for the care of one's children if the nurse's office was located in the school, $r_s(594) = .10$, $p < .05$, and if the nurse were located in a remote site away from the collaborating doctor's office, $r_s(600) = .20$, $p < .0001$. Disagreement with the statement that "I think you can get medical care even if you don't have money with you" was associated with increased willingness to use APNs if the services were not paid by insurance, $r_s(596) = -.15$, $p < .0005$, if the nurse spent more time with the respondent, $r_s(598) = -.08$, $p < .05$, and if the nurse could be seen immediately (vs. waiting 3 days to see a doctor), $r_s(598) = -.08$, $p < .05$. Agreement with the statement was associated with increased willingness to use APNs if the nurse was

located in a remote site away from the collaborating doctor's office, $r_s(598) = .17$, $p < .0001$.

Pap Smear Tests, Breast Examinations, and Mammograms

Table 22 shows the subsample of female respondents' attitudes about health as determined by whether the respondent had ever received a pap smear test, a breast examination from a health care provider, or a mammogram. While there was no relationship between overall willingness to use APNs and whether a pap smear test had ever been performed, $r_{pb}(322) = -.04$, $p > .05$, an increased willingness to use APNs was associated with not ever having undergone a breast examination, $r_{pb}(324) = -.15$, $p < .01$, or a mammogram, $r_{pb}(324) = -.15$, $p < .01$. Similarly, among women who had received pap smear tests or breast examinations, an increased willingness to use APNs was associated with increases in the time since the last pap smear test, $r(298) = -.19$, $p < .005$, and last breast examination, $r(251) = -.20$, $p < .005$.

Table 22

Percent of Women Who Had Received Pap Smear Tests, Breast Examinations, and Mammograms

Procedure	n	%
Pap smear	331	97.6
Breast exam	289	85.3
Mammogram	203	59.9

Note. N = 339.

Table 23 shows Spearman correlations between whether females had ever received pap smear tests breast examinations from a health care provider, or mammograms, and each of the 13 "conditions" upon which respondents rated willingness to use APNs were also obtained. There were no significant correlations between whether women had ever received a pap smear test and willingness to use APNs under any of the conditions. There were, however, a number of significant correlations between whether females had ever received breast examinations or mammograms and willingness to use APN under particular conditions. For both breast examination and mammogram, 1 represents yes and 2 represents no. Willingness to use APNs under each condition was measured on a 5-point scale on which 1 represnts strongly agree and 2 represents strongly disagree.

Table 23

Spearman Correlations Between Whether Females Had Received Breast Examinations and Mammograms and Willingness to Use Services of an APN Under Different Conditions

Condition: If APN . . .	N	Breast exam	N	Mammogram
Could provide care for entire family	338	-.14***	338	-.11*
Had office hours that were convenient	338	-.14***	338	-.14***
Had office closer to home	336	-.16**	336	-.11*
Could treat my children at school	331	-.11*	331	-.13*

Table 23 (Continued)

Condition: If APN . . .	N	Breast exam	N	Mammogram
Services were paid by my insurance	337	-.09	337	-.05
Services were not paid by my insurance	335	.01	335	-.06
Spent more time with me	337	-.12*	337	-.18****
Services did not differ from doctor's	338	-.11*	338	-.18****
Office was located at a distance from the collaborating doctor	337	-.16**	337	-.19****
Made house calls	336	-.06	336	-.06
Treated emergencies after office hours	337	-.10	337	-.08
Wrote prescriptions to a pharmacy	338	-.14***	338	-.12*
Saw me immediately and I had to wait 3 days to see a doctor	337	-.10	337	-.12*

Note. *p < .05. **p < .005. ***p < .01. ****p < .001.

Relationship Between Whether Respondents Had Heard of APNs and Willingness to Use APNs

In Table 24, the correlation between whether respondents had heard of APNs and overall willingness to use them was significant, $r_{pb}(577) = .11$, $p < .01$, in all but three conditions. Having heard of an APN prior to the completion of the instrument was associated with greater willingness to use one. Conditions under which respondents were not willing to use APNs were: "could treat my children at school" ($r_s = .08$), "office was located at a

distance from the collaborating physician" (r_s = .05), and "services were not provided by insurance" (r_s = .03). For the variable of whether respondents had heard of APNs, 1 represents yes and 2 represents no. Willingness to use APNs under each condition was measured on a 5-point scale on which 1 represnts strongly agree and 2 represents strongly disagree.

Table 24

Spearman Correlations Between Whether Respondents Had Heard of APNs and Willingness to Use Services of an APN Under Different Conditions

Condition If APN . . .	n	r_s
Could provide care for entire family	597	.18******
Had office hours that were convenient	597	.14*****
Had office closer to home	595	.13**
Could treat my children at school	591	.08
Services were paid by my insurance	597	.14****
Services were not paid by my insurance	594	.03
Spent more time with me	596	.12**
Services did not differ from doctor's	598	.11***
Office was located at a distance from the collaborating doctor	597	.06
Made house calls	595	.17******
Treated emergencies after office hours	597	.13****
Wrote prescriptions to a pharmacy	598	.17******
Saw me immediately and I had to wait 3 days to see a doctor	596	.13****

Note. *p < .01,.**p < .005. ****p < .001. *****p < .0005 ******p < .0001.

Measurement of Willingness to Use APNs and Attitudes Toward Health

The reliability of the instrument used in the study was examined with the Cronbach's Coefficient Alpha. In the present study, a number of the variables, while not significantly related to overall willingness to use APNs, were related to one or more of the 13 items, which together comprised overall willingness. One possibility was that the 13 items were not highly intercorrelated and that scores on individual items were not highly correlated to the overall willingness score. As a measure of internal consistency, coefficient alpha would be expected to reflect such a state of affairs. In fact, the reliability of the instrument was high, $\underline{r}ll = .95$. The factor structure of the instrument was assessed with a principle components (factor) analysis to determine the number of underlying orthogonal dimensions represented by the 13 items. Table 25 presents the factor pattern matrix in which the 13 items represent a single dimension or factor. The principle components analysis yielded only one factor. Factor loadings represent the correlations between scores on the individual items and scores on the factor.

The individual items that were applied to assess attitudes toward health, unlike those that assess willingness to use APNs, were not combined to form a "global" attitude toward health variable. To determine if such an approach would be appropriate in future research, an "overall" attitude variable, defined as the mean of the 10 individual items, was created. Coefficient alpha for

Table 25

Factor Pattern Matrix Resulting From the Principle Components Analysis of the 13 Items Used to Assess Overall Willingness to Use APNs

Condition: If APN . . .	Factor loadings
Could provide care for entire family	.92
Had office hours that were convenient	.92
Had office closer to home	.88
Could treat my children at school	.74
Services were paid by my insurance	.87
Services were not paid by my insurance	.40
Spent more time with me	.89
Services did not differ from doctor's	.85
Office was located at a distance from the collaborating doctor	.62
Made house calls	.84
Treated emergencies after office hours	.86
Wrote prescriptions to a pharmacy	.89
Saw me immediately and I had to wait 3 days to see a doctor	.85

this "new" instrument was .66. A principle components analysis with an orthogonal (varimax) rotation yielded three factors, indicating that the 10 items used to assess attitudes toward health represent three independent dimensions of attitude (Table 26). Factor loadings represent the correlations between scores on the individual items and scores on the factor.

Table 26

Factor Pattern Matrix Resulting From the Principle Components Analysis of the 10 Items Used to Assess Attitudes About Health

	Factor loadings		
Attitude	Factor I	Factor II	Factor III
Healthy enough not to need insurance	.10	.61	.45
Health insurance is not worth the cost	.02	.82	-.07
More likely to take risks than average person	.16	.64	.07
Can overcome most illness without help	.56	.49	.09
Home remedies are often better than prescribed drugs	.72	.24	.01
My own behavior determines how soon I get well	.78	.04	-.12
Understand my health better than doctors do	.79	.00	-.15
Luck is important in recovering from illness	.38	.23	.57
Doctors only recommend surgery if it is the only solution	-.19	-.16	.78
Medical care is easily available even without having money with you	-.24	.18	.75

Note. N = 597.

In conclusion, significant relationships existed between greater overall willingness to use APNs and lack of high school education, Medicaid, and receipt of food stamps. Agreement with health attitudes significantly related to overall willingness to use APNs were: "I'm healthy enough that I don't need health insurance," "home remedies are often better than drugs prescribed by a doctor," and "doctors never recommend surgery unless there is no other way to solve the problem." Lack of breast exams and mammograms was also significantly related to overall willingness to use APNs. The presence of purchased health insurance and lack of health insurance was associated with decreased overall willingness to use APNs. Willingness to use APNs was greater under the condition that (a) a nurse could see the person immediately, (b) emergencies were treated after office hours, (c) services were paid by insurance, and (d) the APN could prescribe medications. The respondents expressed the least willingness to use APNs under the condition that services were not paid by insurance and the services were provided in an office at a distance from the collaborating physician.

CHAPTER V

Discussion, Implications, Recommendations, and Conclusions

Discussion

Most of the respondents indicated a willingness to use APNs in 11 of the 13 conditions assessed. This would indicate that individuals value family oriented health services that are more convenient in location and service hours and are covered by insurance. Respondents were less willing to use APNs in locations away from the collaborating doctor and if the services were not covered by insurance. Individuals who lacked a high school education, received Medicaid benefits, and purchased food stamps expressed a greater willingness to use APNs. Individuals who purchased health insurance reported a decreased willingness to use APNs.

The primary and secondary analyses revealed that the demographic variables of lack of a high school education, the presence of health insurance coverage, Medicaid coverage, and the purchase of food stamps were significant as predictors of overall willingness to use APNs. Lack of high school education, Medicaid coverage, and the purchase of food stamps was associated with increased willingness and the presence of purchased health insurance decreased willingness to use APNs.

Relationship to Conceptual Framework

Consistent with the Aday and Andersen's conceptual framework for the study of access, health policy determines the utilization of health care through financing, education, manpower, and organization. This is most evident in the responses of willingness to use APNs if insurance paid for the services provided and if the APN could provide prescriptions for medications. Lack of third party reimbursement from insurance companies and employers and lack of prescriptive authority and imposition of restrictive physician supervision regulations creates an unlevel competitive field, which prevents APNs from forming independent practices. This further sends the message to the public that APNs and the services they provide are inferior to those of physicians. This decreases the manpower available to provide health care services and makes the organization of health care dependent on one type of provider (i.e., physicians).

The study also supported Aday and Andersen's framework in that the respondents valued the items that were identified in consumer satisfaction, such as convenience, costs, quality, information, coordination, and courtesy. Individuals who had prior knowledge of APNs expressed greater willingness to use these services. This finding supports the notion that consumer satisfaction components influence the utilization of health services through type, site, purpose, and time interval. Because 75% of the respondents reported using a physician's office as a usual

source of care and 98.6% of these respondents indicated that they saw a doctor for care, willingness to use the service of an APN was not related to dissatisfaction with their current provider. Therefore, services provided by the APN would not be viewed as a duplication of services by the population at risk but as unique and complementary services to care, which was provided by the physician. These services would be primarily health maintenance and health promotion, which required education of the client in order to achieve cooperation and compliance to achieve a goal.

These findings support the goal attainment conceptual framework used to guide the study. With legislation that allows the APN to function independently, the nurse could interact with the populations at risk to influence values, goals, and needs, which, in turn, could influence consumer satisfaction and the utilization of health services. The product of this transaction would be increased health care access.

Relationship Between Demographic Variables and Willingness to Use APNs

The study revealed that only the demographic variables of lack of a high school education, Medicaid coverage, and the purchase of food stamps were significantly related to willingness to use APNs. These variables were associated with increased willingness to use APNs. This contradicts the findings reported by Smith and Shamansky (1983) that the potential users of family NPs were primarily women, who are relatively more affluent, better educated,

professionally employed or working as a homemaker, middle or upper income, and younger than the general population.

The findings also contradict the findings of Shamansky et al. (1985) that users of APNs tended to be younger and better educated. However, Smith and Shamansky (1983) found these individuals tended to be from lower income groups. Findings of the current study would suggest that, should the user be female, she would most likely be a Medicaid recipient, purchase food stamps, lack a high school education, and would never have undergone either a breast examination or a mammogram.

These results support the findings reported by Hogan and Hogan (1982) that persons with lower incomes expressed the greatest willingness to use APNs. The present findings were also consistent with the data from the 1985 National Health Interview Survey that showed recent breast exams to be 10% to 13% lower among the poor. An explanation for the low percentage may be the population from which the samples were drawn. Shamansky et al. (1985) sampled the population of New Haven, Connecticut, the community surrounding Yale University. One might expect this community to be more homogeneous in regard to age and education. Another explanation might be the time that has elapsed between the previous studies and the curent research.

An important finding in this study was the identification of age, education, and income in relation to willingness to use APNs. While not significantly related to overall willingness to use APNs, increasing age was

associated with decreased willingness to use APNs under conditions in which regular office hours were at the most convenient times, the services provided were not different than those provided by a physician, and the nurse could see the patient immediately. Income was significantly correlated with decreased willingness to use an APN if the services of the APNs were not covered by insurance, with increases in income associated with decreased willingness. High school graduation, a 4-year college degree, and some education beyond a 4-year degree were associated with a decreased willingness to use APNs if the services were not covered by insurance. Possession of a master's degree was also associated with less willingness to use APNs if the nurse "spends more time with the family and makes house calls."

Another important finding of this study was the relationship of purchased health insurance coverage to willingness to use APNs. While no significant relationship was shown when health insurance coverage was provided as part of an employment benefit package with overall willingness, those individuals who purchased private insurance, including Medicare recipients who purchased Medigap supplemental plans, indicated decreased willingness to use APNs if the services were not covered by insurance. These results support the findings by Timmons and Ridenour (1994) and Mittelstadt (1993) that lack of direct third-party reimbursement from insurance companies and self-

insured employers have a negative impact on individuals' willingness to use APNs.

An unexpected finding of this study was the relationship between the lack of insurance coverage and decreased willingness to use APNs. Not only was lack of health coverage significantly associated with an overall decreased willingness to use APNs, it also was significant in 6 of the 13 conditions that assessed willingness. One explanation might simply be that, if individuals have the ability to pay or are forced to pay due to lack of coverage, they prefer to pay for the services of a physician. Conversely, when an individual has health coverage, why seek the care of a professional whose services are not reimbursable within a health plan. This explanation would be consistent with the well-documented findings of previous researchers of the negative impact that lack of third-party reimbursement for the services of APNs has on the utilization of these providers. These findings may also be explained by the age of the previous studies.

A paradigm shift has occurred in economic, political, and social thoughts in the country in the past 10 years. As Curtin (1990) revealed, the economic boom of the 1980s was in reality a slow decline into national debt. The baby boomers of the 1960s became the parents of the 1990s and, with that maturation process, became increasingly alarmed at the decrease in the standard of living and the decreased security that was provided by employment. The period

between 1960 and 1980, when the Johnson Administration enacted Medicare, was a time of plenty. Unemployment was low and unions made great strides in increasing the hourly wage and benefit package for their members. The stark differences between the affluent middle class and those citizens in poverty were unacceptable to the American public. Growing old meant growing poor.

The review of literature indicates that this trend no longer exists in this country. Though unemployment remains low in the U.S., unions no longer have the influence they previously had with employers. Employees fear the effect that prolonged strikes would have due to lack of income and benefits and the availability of other workers. Therefore, the power of the unions has been eroded. The public has also become less tolerant of assistance through entitlement programs. While most would agree that some system of support should be available for those at risk, the public now demands responsibility and accountability from those who receive the benefits. The current Republican majority in the U.S. House of Representatives could be a clear indication that American citizens are becoming more conservative in their political views and more alarmed about the economic policies of this country.

Relationship Between Health Status and Willingness to Use APNs

Another trend revealed by this study was the association of health-related limitations with an increased willingness to use APNs. While the selection of disease choices was limited in the instrument, each respondent was

asked to identify diseases that imposed the limitation on working at a job, working around the house, going to school, and participating in outside activities. The diagnosis of emphysema was associated with an increased willingness to use APNs. Smoking and having a blood pressure check were not related to overall willingness but to increased willingness "if the nurse was closer to home." Self-rating of health status was not associated with overall willingness but, the lower the self-rating, the greater the willingness to use APNs in remote areas and in the home. These findings would support the conceptual framework used to guide this study in that health status affects needs that affect access. The link between smoking, lung disease, and the resulting limitation that is placed on physical activity is well documented in health research. It is, therefore, logical that individuals with severe physical limitations due to lung disease would prefer to use a professional in a setting that required the least amount of physical exertion to obtain access to that professional. This would also explain the significant association between activities missed due to health and an increased willingness to use APNs if the nurse made house calls, wrote prescriptions, and could be seen immediately.

Relationship Between Health Access and Willingness to Use APNs

Though geographic variables in the past have been reported as barriers to health care access, this study revealed a significant relationship only with appointment requirements. Under the condition "usually have an

appointment," willingness to use APNs increased. While transportation in general was not significantly related to overall willingness to use APN, having to be driven to the health care facility was. Lacking a usual source of health care was significant only if the individual was new to the area. Under this condition, the respondent indicated a greater willingness to use an APN if the service was covered by health insurance.

"Being driven" and an increased willingness to use APNs might be interassociated with the increased willingness to use APNs by individuals with physical limitations. The underlying barrier to access in both these situations is dependency. This variable was not reported in the literature as a barrier to access and would warrant future investigation. The association between having an appointment and increased willingness is suggestive of a need for greater flexibility in access to health care providers.

Relationship Between Health Attitudes and Willingness to Use APNs

This study revealed a significant association between health attitudes and willingness to use APNs. The health attitudes of "I'm healthy enough that I don't need health insurance," "home remedies are better than drugs," and "doctors never recommend surgery unless there are no other ways to solve the problem" are associated with increased willingness to utilize APNs. These findings are consistent with the findings by Smith and Shamansky (1983) and Shamansky et al. (1985) that individuals who are interested

in health promotion and health education expressed greater willingness to use the services of an APN. These findings also support the conceptual framework's premise that a person's values influence the utilization of health care services.

An important finding in relation to values is the element of "trust" of physicians to exhaust conservative treatment before using surgery. Trust has been reported by Aday and Andersen (1975) as a component of consumer satisfaction and is viewed as having a reciprocal effect on utilization of health care services in the conceptual framework that guided this study. However, level of satisfaction with current health care was not significantly related with any of the 13 specific conditions under which willingness to use APNs was rated. With 88.8% of the respondents reporting satisfaction with their current health care provider and clearly three fourths using physicians as their usual source of care, willingness to use APNs was not viewed as an alternative due to dissatisfaction with the current provider.

Implications

This study revealed that willingness to use APNs was greatest among that group of individuals for which the concept originated (i.e., those in poverty in remote rural or urban areas). Willingness is also greater among individuals who reported chronic health problems that restrict physical activity and increase the desire for health care services provided within the home or close to

the home. Increased willingness is also reported by individuals who could benefit from health education in regard to smoking, exercise, and breast examinations.

Decreased willingness to use APNs was reported when the services are not covered by insurance. Increased willingness to use the services of APNs when services were not covered by insurance was reported by respondents whose usual source of care was a physician's office. Increased willingness was also reported under the condition in which APNs could prescribe medications for the patient.

These findings have great implication for nursing education, practice, research, and policy. The focus of undergraduate nursing education continues to be mainly on preparing nurses to practice within an acute care, in-patient hospital setting. Nursing education must respond by enlarging the focus of nursing education to also practice within the community setting.

The increased willingness to use APNs by persons whose usual place of care was a doctor's office supports the need for APNs to practice within a multilevel, collaborative health care system. Networking between the medical and nursing profession is needed to increase the understanding of the appropriate role of the APN and the contribution that these nurses can make within such a health care delivery system. In order to accomplish this goal, nursing practice must enlarge the focus of the profession to encompass the health of society as a whole.

The decreased willingness of individuals to use the services of APNs when services are not covered by insurance and the increased willingness to use services when the APN can prescribe medications support the need for continued policy changes at the state and federal levels to ensure direct third-party reimbursement and prescriptive authority for APNs in every state. Nursing must organize at the grassroots level to encourage and support nurses in seeking political offices and to encourage and support other citizens seeking political offices who are sympathetic to the needs of all nurses. In addition, nurses should actively seek appointment to health-related committees at the state and federal levels to ensure the presence of the nursing profession at policy-making tables.

The increased willingness to use APNs in 10 of the 13 willingness situations with prior knowledge of APNs suggests the necessity for better informing the public about who we are and what we do. Nurse leaders need to be highly visible and involved with matters that affect the health of this country and should seek through all types of media to inform the public of the contributions nurses make and can make to improve the quality of life for U.S. citizens. Nurses at local levels must become involved in informing the citizens in their own communities about the practice of nursing.

Nurses, as the largest aggregate of health care providers, are in a strategic position to document and criticize structural, interactional, and ideological

barriers to access to health care (Stevens, 1992). Maraldo and Solomon (1986) suggested that nursing began the process with a definition of policy that included components such as power, politics, and economic interests. Nursing research must be employed to establish a sound theoretical base to support the need for policy changes with regard to the organization and distribution of health care. Butterfield (1990) stated that the omission of theories that relate nursing to the behavior of society may leave nurses without the understanding or competencies necessary to facilitate change at this level.

Recommendations

Further research is essential to foster understanding of the public's willingness to use APNs. The public cannot easily ascertain the role of the APN. In addition, clearly 50% of the population in this study had no prior knowledge and experience with these professionals and their services. Information is lacking as to the source, personal or impersonal, from which the public obtains information necessary to form opinions in regard to a particular health care provider. Under these circumstances, nursing research should develop response models to determine which type of media content and media systems are most efficient in affecting the public's willingness to use and adopt APNs as a primary health care provider. This additional research would provide a theoretical basis for informing the public about who the APN is, what contributions they can make in

the delivery of health care, and how their role differs from other health care providers within the system.

Nursing research should also develop response models to determine a systematic plan for gaining the cooperation and collaboration of other health care providers with advanced practice nursing. Collaboration of APNs with other medical professionals is essential because the average consumer continues to regard the physician as the gold standard for the provision of health care services. This response model should focus on the competencies and conditions under which other medical professionals would express willingness to use the services of an APN, as well as promote the practice of advanced nursing to consumers. Like their physician counterparts, APNs in independent practice must have a referral source from other professionals in order to compete and be successful. Such a relationship among health care professionals would lend the additional legitimacy of advanced nursing practice that has alluded the specialty since the introduction of the NP in the early 1960s.

Finally, nursing research should further explore the relationship between health status and health attitudes in order to gain an understanding of the behavior of society with regard to health education and health maintenance. With the advent of managed care, the focus of all health professionals has changed to health promotion, and more medical and surgical care is being provided in the out-patient setting. Knowledge, involvement, and acceptance on

the part of the consumer is vital if these managed care principles are to be successful. This theory-based foundation is essential in developing a multilevel collaborative delivery system with other health care professions, which will be the most cost efficient in terms of delivery of services and more efficient in effecting the willingness to use APNs.

Conclusions

The results of this study should be interpreted with caution for several reasons. First, the instrument has been used only once. Secondly, the focus was limited because it explored behavior in hypothetical situations. The generalizability of the results of this study are limited both by quota sampling and the population from which the sample was selected. Smith and Shamansky (1983) and Pender and Pender (1980) noted the need for further investigation regarding the characteristics of individuals using APNs as primary health care providers.

This study clearly identified individuals who lack a high school education, receive Medicaid, and purchase food stamps as the group most willing to use the services of APNs. The relationship between lack of insurance and the presence of purchased health insurance and decreased willingness to use APNs raises serious questions for advanced practice nursing. It is critical that this relationship should be investigated further to determine if APNs would be utilized by remaining groups or if the

practice of advanced nursing would be limited to a small portion of society.

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APPENDIX A

Predicting the Willingness to Use APNs

Predicting Willingness to Use
Advanced Practice Nurses

This study is being done to meet completion requirements for a doctoral degree in nursing at The University of Alabama at Birmingham. The survey will require about 10 minutes of your time. Your name will not be put on the survey to ensure that your responses will be confidential and anonymous. Participation is voluntary and you can stop at any time. The student will be happy to answer any questions you have in regard to the questions on the survey.

The purpose of this survey is to explore people's willingness to use the services of advanced practice nurses. Because people differ widely with regard to health care needs, it is important to obtain information which might influence willingness to use the services of these nurses. By answering the questions on this survey, you will provide valuable information. Thank you for participating in this study.

Part I: Demographic Variables

The purpose of the questions in Part I is to obtain personal information about you and your family.

1. Gender

   _____ Male
   _____ Female

2. Age _____ (years)

3. Marital Status

   _____ Married
   _____ Widowed
   _____ Divorced
   _____ Separated

4. Number of children _____

5. Number of children living at home _____

6. Total number of people living in your home _____

7. Which of the following best describes your racial background:

_____ American Indian
_____ Alaska Native
_____ Asian or Pacific Islander
_____ African American (Black)
_____ Caucasian (White)
_____ Puerto Rican
_____ Cuban
_____ Mexican or Mexican-American
_____ Other

8. Which of the following best describes your level of education?

_____ Not a high school graduate
_____ High school graduate
_____ Some college
_____ Two-year associate college degree
_____ Graduate of a trade school or other specialized school
_____ Four-year college degree
_____ Some college beyond four years
_____ Master's degree
_____ Doctoral or professional degree

9. Are you covered by Medicare at the present time?

_____ Yes
_____ No
_____ Don't know

10. Are you covered by Medicaid at the present time?

_____ Yes
_____ No
_____ Don't know

11. Is your health care covered by any other public aid program that pays for medical care besides Indiana Medicaid?

_____ Yes
_____ No
_____ Don't know

12. Do you have health insurance from any of the following? If yes, please check.

_____ An employer or a family business
_____ A union
_____ An insurance company
_____ Other (please specify) _____

13. Think about all of your sources of income. After taxes, about how much money do you and your family have to live on?

_____ Per week OR
_____ Per Month OR
_____ Per Year

14. During 1994, have you or anyone living with you bought or received government food stamps?

_____ Yes
_____ No

15. Do you (or your family) own or rent your home or apartment in which you live?

_____ Own
_____ Rent
_____ Neither

Part II: Health Status

16. How tall are you? _____ feet _____ inches

17. How much do you weight? _____ pounds

18. Do you smoke cigarettes?

_____ Yes
_____ No

19. In the past year have you had your blood pressure checked?

_____ Yes
_____ No
_____ Don't know or don't remember

20. Which of the following comes closest to describing your physical activity?

_____ I often spend at least 1/2 hour in moderate or strenuous physical activity three or more times a week.
_____ Except for ordinary activities of daily living, I don't spend too much time in physical activities.

21. In general, which of the following best describes your health?

___ Excellent
___ Good
___ Fair
___ Poor

22. Does your health keep you from working at a job, doing word around the house, going to school, or participating in activities outside of your home?

_____ Yes
_____ No

23. During the past year, have you missed work, school, or scheduled activities because of health reasons?

_____ Yes, If yes, how many days _____
_____ No

24. Please check any of the following conditions that a doctor has ever told you that you have.

_____ A stroke
_____ Rheumatism
_____ Emphysema
_____ Arthritis
_____ Diabetes (high blood sugar)
_____ Heart disease
_____ Any cancer (except skin cancer)
_____ Gallbladder disease
_____ A heart attack (myocardial infarction)
_____ Hardening of the arteries (arteriosclerosis)
_____ High blood pressure (hypertension)

Part III: Attitudes About Health

For each of the following statements, indicate the extent to which you agree or disagree with the statement.

25. I'm healthy enough that I really don't need health insurance.

__ Strongly Agree __ Agree __ Uncertain __ Disagree __ Strongly Disagree

26. Health insurance is not worth the money it costs.

__ Strongly Agree __ Agree __ Uncertain __ Disagree __ Strongly Disagree

27. I'm more likely to take risks than the average person.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

28. I can overcome most illness without help from a medically trained person.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

29. Home remedies are often better than drugs prescribed by a doctor.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

30. If I get sick, it is my own behavior which determines how soon I get well again.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

31. I understand my health better than most doctors do.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

32. Luck plays a big part in determining how soon I will recover from an illness.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

33. Doctors never recommend surgery (an operation) unless there is no other way to solve the problem.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

34. I think you can get medical care easily even if you don't have money with you.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

Please answer the following questions only if you are female.

35. Have you ever had a pap smear test?

_____ Yes _____ No

36. If you have had a pap smear test, about how long has it been since you had your most recent one?

_____

37. Have you ever had a breast exam by a doctor or other health care provider?

_____ Yes _____ No

38. If you have had a breast exam, about how long has it been since you have your most recent one? _____

39. Have you ever had a mammogram? (Breast x-ray)

_____ Yes _____ No

Part IV: Access to Health Care

40. Is there a clinic, health center, doctor's office or other place that you usually go if you are sick or need advice about your health?

_____ Yes _____ No

If you answered yes to question 40, please continue to answer all questions. If you answered no, please skip to question 49 and continue.

41. Which of the following best describes the usual place at which you receive health care?

_____ Doctor's office _____ Hospital Clinic

_____ Neighborhood Clinic _____ Company Clinic

_____ Hospital Emergency Room _____ School Clinic

_____ Walk-in Center _____ Your Home

_____ Other

42. At the usual place you receive health care, do you usually see a doctor?

_____ Yes _____ No

43. How do you usually get to the usual place you receive care?

_____ Walk _____ Drive

_____ Driven by Someone Else _____ Taxi

_____ Public Transportation (Bus) _____ Receive Care at Home

_____ Other (please specify) _____

44. About how long does it take for your to get to your place of usual care? _____

45. When you receive medical care, which of the following is most often the case?

_____ Always make an appointment first

_____ Usually make an appointment first

_____ Sometimes have an appointment/Sometimes just walk in

_____ Always just walk in

46. When you make an appointment, about how many days is it between making the appointment and seeing a health care professional (doctor or nurse)?

_____ Days OR _____ Weeks

47. How long have you been going to this place? _____

48. When you first went to this place, how much do you feel you knew about the doctor or the place?

_____ A great deal _____ Some

_____ Hardly anything _____ Nothing

Answer Questions 49-53 only if you answered "NO" to question 40.

49. I don't have a source of usual health care because I seldom or never get sick.

_____ Yes _____ No

50. I don't have a source of usual health care because I have just recently moved into the area.

_____ Yes _____ No

51. I don't have a source of usual health care because my usual source of care in this area is no longer available.

_____ Yes _____ No

52. I don't have a source of usual health care because I like to go to different places for different health needs.

_____ Yes _____ No

53. I don't have a source of usual health care because the places where I can receive medical care are too far away.

_____ Yes _____ No

54. I am satisfied with the health care I currently receive.

_____ Yes _____ No

Part V: Willingness to Use Advanced Practice Nurses

After reading the following description, please answer the remaining questions on the survey.

One of the proposals in health care reform is to allow advanced practice nurses to provide some of the basic or primary care you currently have to go to a family doctor to receive. These nurses would have advanced education. They would perform physical exams, and treat illnesses like colds and infections. They would also give pregnancy care and baby shots.

For each of the following statements, indicate the extent to which you agree or disagree with the statement.

55. I would be willing to use the services of an advanced practice nurse if the nurse could provide most of the basic care for my entire family.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

56. I would be willing to use the services of an advanced practice nurse if the nurse had regular office hours on the days of the week and the time of day that were most convenient for me.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

57. I would use the services of an advanced practice nurse if the office was closer to my home.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

58. I would be willing to use the services of an advanced practice nurse for my children's health needs if the office of a nurse were located in the school.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

59. I would use the services of an advanced practice nurse if the services were paid under my insurance policy.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

60. I would use the services of an advanced practice nurse if the services were not paid under my insurance policy.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

61. I would use the services of an advanced practice nurse if the nurse spent more time with me and my family members

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

62. I would use an advanced practice nurse if the services provided were no different than those provided by a doctor.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

63. I would use the services of an advanced practice nurse if the nurse was located in a remote site away from the collaborating doctor's office..

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

64. I would use the services of an advanced practice nurse if the nurse made house calls.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

65. I would use the services of an advanced practice nurse if the nurse provided treatment for emergencies after office hours.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

66. I would use the services of an advanced practice nurse if the nurse wrote or called prescriptions to a pharmacy.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

67. If I had to wait three days to see a doctor but could see the advanced practice nurse immediately, I would be willing to use the nurse.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
__	__	__	__	__

68. Before reading the description at the beginning of this survey, had you ever heard of or read about advanced practice nurses?

_____ Yes _____ No

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Major Subject Nursing Health Policy

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