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## A Comparison Of Practice Patterns Of Nurse Practitioners In Collaborative Practice And Those In Independent Practice Arrangements

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**A COMPARISON OF PRACTICE PATTERNS OF NURSE  
PRACTITIONERS IN COLLABORATIVE PRACTICE  
AND THOSE IN INDEPENDENT PRACTICE ARRANGEMENTS**

**by**

**LEE WALLACE**

**A Thesis  
Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Science in Nursing  
in the Division of Nursing  
Mississippi University for Women**

**COLUMBUS, MISSISSIPPI**

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A Comparison of Practice Patterns of Nurse  
Practitioners in Collaborative Practice  
and those in Independent Practice Arrangements

by


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Professor of Nursing  
Director of Thesis



Assistant Professor of Nursing  
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Adjunct Faculty  
Member of Committee



Director of the Graduate School

## Dedication

I dedicate this study to my wife and daughter. I could never have finished without you. I love you.

### Acknowledgments

I would like to express my sincere thanks to those who have provided support and encouragement throughout this endeavor. First and foremost to my family, Wanda and Natalie have provided the much needed encouragement, support and love required during this past year. I would like to also thank Dr. Mary Pat Curtis, Linda Cox, and Lori Davis for all the assistance they have provided. I know I would never have completed this thesis without their wisdom and support. I would like to also express my sincerest appreciation to Mary Lillian Randle for spending her valuable time searching out articles for review. Last but not least I would like to thank the Lord, Almighty God for giving me and my family the strength and fortitude to complete my thesis.

## Abstract

Nurse practitioners provide health care in a variety of settings, which can be subdivided into two broad categories: collaborative practice, indicating physician and nurse practitioner practice in the same setting, and independent practice, indicating physician preceptor not in the same facility. This study's purpose was to determine if differences exist in practice patterns of nurse practitioners in collaborative and independent practice. This descriptive, comparative study was guided by the American Nurses Association Social Policy Statement. The setting was the predominately rural state of Mississippi. The sample (N=143) was mailed the Wallace Survey, which included a list of 32 commonly performed tasks. Respondents indicated if said tasks were performed with or without prior consultation with physician preceptor. Data analysis was performed using descriptive comparative percentages and Chi-square testing. Results indicated that a statistical difference did exist in practice patterns: clinical,  $p = .001$ ; administrative,  $p = .003$ ; and reimbursement,  $p = .0001$ . Nurse practitioners in independent practice performed significantly more tasks in these categories. Implications for practice derived from the findings included the need for information to the new nurse

practitioner in determining future practice arrangements. Implications for research included the need for further research exploring practice patterns. Implications for education included the need for graduate educators to remain cognizant of changes and trends in the profession and the need for further education of third party payers as to the role of nurse practitioners. Recommendations for further study included replication of the study with a population representing other rural and urban states.



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## Chapter I

### The Research Problem

Beyond license and certification, much flexibility has been required of the nurse practitioner to establish a practice pattern that meets the personal and professional needs of the advanced practitioner and also the health care requirements of the service area. Nurse practitioners have been required to adapt their performance patterns to meet the legislative requirements of the practice location and administrative demands of employers, to accommodate the practice style of the physician preceptor, and to satisfy third party reimbursement payers (Briggs, 1990, p. 31). Each state's legislative body has held ultimate accountability for granting nurse practitioners authority to perform certain tasks, with the respective Board of Nursing further refining the role (Pearson, 1995).

The role of the nurse practitioner was developed in the year 1965 by a physician and a nurse in the state of Colorado. Recognizing the need for available and affordable health care for families and children, these professionals worked with the University of Colorado to enhance the role of the registered nurse to provide primary care in collaboration with the physician. With the goal of meeting

the needs of children in the area, the first nurse practitioners thus were dedicated to caring for the pediatric population. Those nurse practitioners served as colleagues of the physician, yet the traditional doctor nurse relationship was maintained (Brush & Capezuti, 1995).

Opportunities for practice have continually emerged as health care has been reformed, awareness of the profession has increased, and the nurse practitioner role has been refined. Hospitals, industries, schools, and clinics - - all have provided options for the advanced practice nurse ("What Is a Nurse Practitioner?", 1991). Independent settings and collaborative arrangements also have been options as the nurse practitioner determined practice location. Little research has evaluated the differences in practice patterns of those in collaborative practice arrangements as compared to those in independent settings. A greater understanding of these practice arrangements has been determined to be essential to facilitate practice decisions facing future practitioners. Thus, this researcher focused on the provision of data related to patterns of practice of nurse practitioners.

#### Establishment of the Problem

The American Nurses' Association (ANA) described the role of the primary care practitioner as an advance practice nurse who provides "accessible, accountable, affordable"

health care to individuals, families and groups (ANA, 1987, p. 2). The promotion of health and prevention of disease has long been a priority of the nurse practitioner. This focus has been demonstrated to the client through direct care activities and education. Actual, as well as potential, health problems also have been successfully managed by nurse practitioners. The role of the nurse practitioner also includes consulting with other members of the health care delivery system and referring clients for further care as needed (ANA, 1987).

In the provision of primary health care, nurse practitioners have provided all services necessary for the promotion of health, prevention of disease and early detection and treatment of disease processes and illness (ANA, 1987). These services include forms of assessment such as obtaining health histories, physical exams, ordering and interpreting laboratory and diagnostic studies, and diagnosing health problems. Based on assessment and diagnostic findings and type and degree of illness, the nurse practitioner then develops a treatment plan, including ordering therapy, prescribing medications, providing counseling and education, and making referrals as indicated ("What Is a Nurse Practitioner?", 1991).

Comparison studies of care provided by nurse practitioners and physicians demonstrated that services within the areas of the nurse practitioners' training and expertise tended to be equal to or better than those

provided by physicians. The United States Office of Technology Assessment reached this conclusion in a 1986 study examining the quality of care delivered by nurse practitioners, certified nurse midwives and physician assistants. Nurse practitioners exhibited better communication, counseling and interviewing skills than physicians and were especially good with ambulatory patients suffering with chronic problems such as hypertension and obesity (Office of Technology Assessment, 1986). The nurse practitioner's care of patients with acute problems and adequacy of prescriptive practices also were equal to those of physician's care, according to the study.

Nurse practitioners have provided primary, tertiary, and critical care to a variety of clients in multiple practice arenas. Schools, industries, outpatient facilities, clinics, inpatient settings, nursing homes, and community settings have all served as practice sites for nurse practitioners (Brush & Capezuti, 1995). Nurse practitioners have demonstrated the ability to practice in independent settings or solo practice, as well as in collaborative settings with the physician preceptor.

Much attention has been given to the term collaborative practice. The American Nursing Association defines collaborative practice as a "partnership in which both sides have and value power, recognize and accept separate and combined spheres of responsibility and activity" (Buchanan, 1995, p. 15). Other definitions of collaboration include



concepts such as multidisciplinary team approach to patient care, working together in a joint effort to provide service, and partnerships in practice (Buchanan, 1995). All of these have been applicable to the relationship of the nurse practitioner and the physician preceptor.

Independent practice has proven to be a controversial issue in the role of nurse practitioners across the United States. Independent is defined by Webster (1992) as "not relying on another or others for aid or support" (p. 723). Many states have struggled with this definition of independent practice and the corresponding authority that should be granted, as nurse practitioners have struggled for role enhancements in areas such as prescriptive authority (Ortolon, p. 33).

McClain (1988) stated that "joint practice between nurses and physicians has long been espoused as the most appropriate model for the delivery of comprehensive health care in all settings" (p. 391). However, in today's society much diversity has been required to meet the needs of an everchanging population. Joint practice (collaborative) may have been appropriate for an urban setting in which access to care was not a problem; however, in rural areas where primary care was not available to many citizens, physicians and nurse practitioners may not have had the luxury of sharing a practice. In this situation the independent practice setting has been essential for the provision of care.

The decision of where and how to establish a practice has always been a major undertaking for advanced practice nurses. Schneider (1992) described the painstaking steps involved in the process of deciding whether to practice independently or collaboratively. Assessment of physical and mental stamina of the practitioner was the first step described by the author in the task of determining practice arrangement. The amount of time the nurse practitioner was willing to spend in the work setting was a key component in the evaluation of this step. Schneider (1992) also recommended a thorough evaluation of financial reserves and business skills prior to deciding where to establish practice location. Determining methods of reimbursement of services provided by nurse practitioners was the third step described as an essential component of determining practice location and arrangement. Step four included the thorough review of the state Nurse Practice Act to determine potential or existing practice limitations for independent versus collaborative practice. The new graduate also had to consider the availability of clinical resources as he or she matured in the profession, and health care skills were acquired and perfected. These issues required an honest evaluation and an open mind to facilitate the decision of what type of practice arrangement was best for the graduate.

Due to increasing numbers of nurses choosing advanced practice, variation of practice arrangements and lack of literature describing nurse practitioners' practice, further

assessment of practice patterns seemed essential. Thus, the purpose of this study was to examine the role of nurse practitioners in both independent and collaborative practice arrangements and investigate differences in practice patterns that exist in these settings.

### Significance to Nursing

As prevention and early detection have remained a high priority in health care reform, nurse practitioners can and will make a difference in the future of health care. Diverse conditions have continued to limit the execution of practice at the highest level of regulatory approval for the nurse practitioner (Pearson, 1995). Relative to nurse practitioner practice, this research identified differences in practice patterns in independent settings as compared to practice patterns in collaborative practice arrangements. This information is valuable in assisting new nurse practitioners to determine practice arrangements to meet their personal and professional goals. Results of this study further demonstrated unique skills performed in the delivery of primary care in a wide variety of practice settings. Identification of these unique skills will assist graduate nursing faculty in tailoring curricula to meet the needs of advanced practice students and graduates.

Variables have traditionally existed in the implementation of the advanced practice nurses' scope of

practice. Each nurse practitioner and physician preceptor team has been granted the authority to develop or adopt individualized protocols that the nurse practitioner uses in the provision of care (Pearson, 1995). These protocols vary according to the physician's practice style and preferences as well as the skill level of the nurse practitioner. Past research has been directed toward many facets of the nurse practitioner's role. However, comparative studies of specific practice patterns related to settings and situation have not been addressed. McGrath (1990) described the nurse practitioner as especially valuable in the delivery of primary care in rural areas where health care had been lacking. Due to the significant role in providing primary care in rural settings, this researcher felt it was essential to identify variances in practice pattern by location. Thus, educators and future primary care practitioners, as well as practicing primary care clinicians, benefitted from an analysis of duties performed in independent and collaborative practice settings.

### Conceptual Framework

The American Nurses' Association's Social Policy Statement (1995) was the basic conceptual framework for this research. This study was guided by the principle that "nursing's scope of practice is dynamic and evolves with changes in the phenomena of concern in knowledge about

various interventions' effects on patient or group outcomes, or in the political environment, legal conditions, and cultural and demographic patterns in society" (ANA, 1995, pp. 11-12). Each nurse has utilized this basis for determining how and to what extent he or she will set and pursue his or her career goals. These goals have often been dependent on various factors, including roles, educational preparations, and experience. These factors arise from the knowledge base or nursing practice built on the foundation of nursing science, philosophy, ethics, and the physical, economic, biomedical, behavioral and social sciences (ANA, 1995).

The current research focused on the roles and patterns of practice of advanced practice nurses. Advanced practice nurses are those nurses who have the experience and knowledge base that make it possible for them to specialize and expand their scope. This examination of practice patterns was based on a combination of theory, research, and knowledge of those principles that are part and parcel of graduate nursing education. These principles include health promotion, disease prevention, patient education, theory based planned management, and the need for ongoing research utilizing scientific methods.

The nurse practitioner has combined the facets of graduate education to hone and expand his or her skills and knowledge base. This skill and knowledge, along with regulatory agencies' edicts, are what nurse practitioners

utilize to determine their choice of practice setting and patterns of practice in their chosen specialty. This researcher found that cultural and political characteristics, including rural verses urban environment, population mix, legislative policies, incidence of federally qualified rural health clinics, and no certification recognition for physician assistants, all affected the role of the nurse practitioner and the practice patterns exhibited by nurse practitioners in this study.

The premise set forth by the ANA (1995) that advanced practice nurses will, within the guidelines set forth by ANA, provide "self initiated treatment regimens, as opposed to dependent functions," and that their care is "characterized by a complexity of clinical decision making" (p. 16) served as the basis for this study. This study therefore attempted to differentiate and describe the practice patterns of the nurse practitioners who chose to practice independently, as well as those practicing with a physician.

### Assumptions

For the purpose of this study, two assumptions served as the basis for the investigation. They are listed as follows:

1. Nurse practitioners practice both collaboratively and independently.

2. Nurse practitioners' care is "characterized by a complexity of clinical decision making," which is evident in their practice patterns.

### Purpose of the Study

Studies were found addressing various aspects of care provided by nurse practitioners; however, no studies were found that compared the specific practice patterns and habits of nurse practitioners in various settings.

The purpose of this study was to identify and describe practice patterns of nurse practitioners in various settings. The study was specifically designed to compare patterns of practice of nurse practitioners in independent settings to those in collaborative arrangements. The results of this study provided a portrait of various practice styles useful to educational institutions in the preparation of advanced practice nurses as well as for new graduates attempting to identify practice locations.

### Statement of the Problem

The statement of the problem for the proposed research is this: There is no established research which delineates the practice patterns of nurse practitioners in independent practice and nurse practitioners in collaborative practice.

### Hypothesis

The following null hypothesis will be utilized for the proposed study: There is no difference in the practice patterns for nurse practitioners in independent practice arrangements and those in collaborative practice.

### Definition of Terms

For the purpose of this study, terms will be defined as follows:

#### Collaborative Practice

Theoretical: Collaborative practice involves "The interactions between nurse and physician that enable the knowledge and skills of both professions to synergistically influence the patient care provided....Collaboration involves coordinating, cooperating, valuing and sharing" (King, Lee, & Hennerman, 1993, p. 444-445).

Operational: A nurse practitioner practicing in a primary care setting where a physician or physicians also practice on site as determined by the Wallace Survey.

#### Independent Practice

Theoretical: The term independent has been defined as "free from the influence, guidance or control of others" and defines practice as "a habitual way of behaving". The words custom or habit are presented as synonyms for the word practice (Picket, 1995).



Operational: A nurse practitioner practicing in a primary care setting in which a physician is not practicing on site as determined by the Wallace Survey.

#### Nurse Practitioner

Theoretical: The ANA (1987) describes a nurse practitioner as "a registered nurse prepared to deliver primary health care through a formal, organized educational program that meets guidelines established by the profession" (ANA, 1987, p. 2).

Operational: An advanced practice registered nurse certified by the American Nurses Association and the state of Mississippi.

#### Practice Pattern

Theoretical: Definite tendencies and/or characteristics that are utilized during the delivery of health care services by a health care professional.

Operational: Patterns of practice determined by responses on the Wallace Survey.

#### Summary

Little information has been available to educators and nurse practitioners regarding how practice patterns are affected by the environment. This comparative study evaluated differences between practice patterns of nurse practitioners in an independent setting and those practicing in the same setting as their physician preceptor(s).

Information regarding nurse practitioner practice patterns contributes to the efficiency, quality, and efficacy of an ever-changing health care delivery system.

## Chapter II

### Review of Literature

After a selected review of literature, the researcher determined no past studies of nurse practitioner practice patterns in either collaborative or independent practice arrangements. This lack of reference data proved to be an impediment in the course of this research. One related study addressed practice patterns of nurse midwives in rural settings as compared to those practicing in urban settings. Other related research addressed satisfaction within the nurse practitioner role and barriers to granting of prescriptive authority to advanced practice nurses. Other research was available concerning the delivery of preventative services by nurse practitioners. Since no specific studies reflecting the focus of this research could be found the following review of literature includes related issues and the advanced practice nurse.

Research performed by Koebel, Fuller, and Misener (1991) measured the overall job satisfaction rate of nurse practitioners. Koebel and her associates felt job satisfaction in the role of the nurse practitioner led to enhanced quality of services, improved access to the health care delivery system and increased cost savings for

the client. Herzberg's dual factor theory of job satisfaction and motivation provided the conceptual framework for the correlational investigation. Global or overall satisfaction supplemented Herzberg's theory of intrinsic and extrinsic factors that affect job satisfaction.

Unidimensional and multidimensional measures of nurse practitioner job satisfaction were assessed by the authors. Three questionnaires with a total of 60 questions were used to collect data. The Index of Job Satisfaction, Minnesota Satisfaction Survey Questionnaire-Short Form, and a sociodemographic questionnaire comprised the survey tools. The accessible population consisted of 128 nurse practitioners and 35 midwives in the state of South Carolina. Of the 163 total surveys mailed, 146 (90%) responses were returned, 14 were considered unusable, thus N = 132 responses were used for analysis.

Demographic data revealed a heterogeneous group with the exception of gender and race, 98% female and 90% Caucasian. Age and experience ranged from 26 to 63 years and 1 to 30 years respectively. Subjects graduating from certificate (72%) and master's (28%) programs were represented. A broad range of clinical expertise and specialty areas were included in the sample. Adult, family, pediatric, geriatric, neonatal, surgical practitioners, and nurse midwives were all represented. Various institutional settings such as hospital practice, outpatient and

inpatient, public health, and school systems were listed as employers.

The findings revealed that a majority (52.3%) of the nurse practitioners surveyed perceived their jobs as moderately satisfactory. Intrinsic and extrinsic satisfaction scores also were computed with intrinsic scale results indicating high satisfaction scores for 65.9% of the sample. The extrinsic scale scores indicated a dissatisfaction rate of 34.8% of the survey sample. Factors that emerged as major sources for satisfaction were intrinsic needs such as the feeling of helping others, allowing use of their nurse practitioner skills, and having an opportunity for growth and advancement. Factors that surfaced as contributors to dissatisfaction were extrinsic sources including compensation, company policies and practices, and supervision.

Koelbel et al. (1991) concluded that nurse practitioners tend to be more satisfied with factors intrinsic to their work rather than with factors related to the work environment. Koelbel and associates postulated that even though extrinsic factors cannot be used to motivate or develop more positive job satisfaction within the nurse practitioner population, these factors must be met before an individual can appreciate the intrinsic rewards. Institutions and employers of nurse practitioners need an understanding of this relationship of needs in order to

allow the nurse practitioner to perform to the highest potential possible.

The study by Koelbel et al. (1991) was of benefit to this present research because employer and administrative policies were determined to have an impact on the job satisfaction of nurse practitioners. The authors described the status of nurse practitioners as influenced by the complex health care delivery system, because diverse health care problems compete for the dwindling supply of available funds. Type of supervision also was described as a force affecting the satisfaction rate of nurse practitioners. Work performance and practice patterns were either enhanced or impeded by the degree of satisfaction.

In another advanced practice nurse study, Gordon and Erickson (1993) examined the role of certified nurse-midwives (CNMs). The purpose of the research was to provide data to assist with the development of a plan for the provision of maternity services throughout the state. This action would allow the state to develop health care provider options for the provision of care. The problem addressed by the research was the emerging trend of pregnant women lacking prenatal care due to lack of available maternity services in rural Arizona.

Gordon and Erickson (1993) utilized a descriptive design to gather information concerning delivery of maternity services. The targeted population consisted of all nurse-midwives certified by the Arizona State Board of

Nursing, including state-certified Indian Health Service CNMs. Sixty-five respondents were identified.

Data were gathered through the use of a mailed survey developed by the authors. Along with a 25-item questionnaire composed of checklists and open-ended questions, participants received an instructional cover letter. A brief description of the mandate issued by the state legislature authorizing and condoning the study also was provided for each recipient. Sixty responses were considered acceptable for use in this research. Descriptive statistics were used to analyze social and demographic data, scope of practice, and perceived barriers to rural practice.

Gordon and Erickson (1993) found that 97% of the CNMs were White with 52% being married. These percentages were consistent for urban and rural CNMs. Educational background revealed 53% of urban CNMs held a master's degree. Further research indicated that 70% of rural CNMs were ages 40 or younger, compared to 43.7% of urban CNMs. Average length of time since original certification was less (5.4 years) for rural CNMs than for urban CNMs (6.2 years). Indian Health Services employed most of the CNMs in the rural areas for the provision of care to Native American women. Services in these areas were more likely to include family planning (85%), routine gynecological care (85%), prenatal care (100%), labor and delivery (100%), postpartal care (100%), and newborn care (80%). Percentages in urban areas were consistently lower for CNMs providing the full range of

services. CNMs were most likely to be employed by institutions in both rural settings. Only seven CNMs in Arizona were self-employed.

Gordon and Erickson (1993) demonstrated the differences existing in barriers to practice between urban and rural respondents. Urban CNMs indicated lack of physician preceptors as the main barrier to rural practice. The most significant finding related to willingness to work in a rural setting was a past history of living in a rural area. Rural CNMs said that lack of hospital privileges was the most significant barrier. Other barriers mentioned by both urban and rural respondents included physician hostility, low salary, and isolation. Hours required for work and call were the most common reason cited for not practicing midwifery by all respondents.

Another significant finding was the lack of practicing CNMs to provide required maternity care for larger populations. The need for recruitment, retention, and education as a priority was expressed, since the number of certifications has consistently declined over the past ten years. Recommendations included recruiting nonpracticing CNMs back into practice, minimizing barriers, aggressively recruiting CNMs who have lived in rural areas in the past, and developing appropriate support services such as access to specialists for consultation.

Comparison of nurse-midwives in rural areas to midwives in urban areas by Gordon and Erickson has a parallel



relationship to the proposed study. The current author hypothesized that more independent practice arrangements by nurse practitioners would be found in rural areas than in urban areas. This comparison of practice patterns in rural and urban Arizona indicates that variations in practice patterns do exist.

Regulatory changes and their effect on the advanced practice nurse were the foci of research conducted by Mahoney (1995). The researcher examined nurse practitioners' initial response to regulatory changes granting prescriptive authority for nurse practitioners in the state of Massachusetts. Mahoney addressed whether granting prescriptive authority at the state level ensured adoption in clinical practice of advanced practitioners. The Lewinian model of organizational change and Zaltman's two stage model of implementation provided the conceptual framework.

The targeted population consisted of master's prepared nurse practitioners (NPs) with a minimum experience level of 3 years. All NPs were actively involved in the provision of care for adult patients. The targeted participants were required to have had a minimum of two years preceptor experience with nurse practitioner students from one of the university based adult nurse practitioner programs in the state. A purposive sampling design was employed so the researcher could determine whether or not those considered as clinically competent role models had difficulty obtaining

prescriptive authority. Mahoney (1995) identified 25 eligible participants for the research.

A mailed survey instrument consisting of 80 structured, open-ended questions and requiring approximately 20 minutes for completion was used to gather data. Participants were requested to return questionnaires within six weeks. An accompanying cover letter assured each participant of confidentiality and described return of the questionnaire as implied consent to participate in the research. Thirteen (52%) of the 25 surveys were returned.

Mahoney (1995) found nine (70%) of the respondents had not obtained prescriptive authority even though all of them except one desired this authority. Only two of the NPs were free to decide on their own whether or not they would obtain prescriptive authority. The remaining seven required approvals from administrators and employers. The most significant reason found for not applying for prescriptive authority was that employers would not allow NPs to prescribe medications regardless of legislation. NPs indicated feelings of support from nurse practitioner colleagues, physician colleagues, and medical staff members for prescriptive authority. Only a few (5%) reported supportive feelings from administrators. Smaller, private practices and physician employers were found to be the first to support adoption of prescriptive authority. According to the research, large organizations, especially teaching hospitals, were the slowest.

Mahoney (1995) concluded that administrative barriers to nurse practitioners prescribing medications remain regardless of legislative approvals. Employers support or lack of support emerged as a key factor affecting implementation of prescriptive practice. The employer's right to limit the practice of the nurse practitioner who has been granted prescriptive authority was questioned. Mahoney's study affirmed the need to further investigate the extent to which other nurse practitioners experience barriers to obtaining prescriptive authority following state approval. State legislators approve nurse practitioner authority and define scope of practice with input from members of the board of nursing and medical board along with other representatives of the health care profession. Employers directly affect the practice patterns by limitations placed on nurse practitioners through administrative policies and procedures. Mahoney's study had significant relevance since the current research evaluated the existence of practice patterns within the nurse practitioner population in the state of Mississippi.

In another related advanced practice nursing study, Lemley, O'Grady, Rauckhorst, Russell, and Small (1994) researched the delivery of clinical preventative services provided by nurse practitioners. The problem addressed by the researchers was the existence of barriers to the delivery of clinical preventative services. The purpose of the study was twofold. The first was to develop a method in

which national data on the delivery of clinical preventative services in primary care practice could be examined. The second purpose indicated in the research was the evaluation of objectives included in the Healthy People 2000 initiative.

The authors did not present any statement of hypothesis for the research. Conceptual framework was provided by the Healthy People 2000 objectives. The study was coordinated by the National Committee of Clinical Preventative Services under the direction of the Office of Disease Prevention and Health Promotion. The survey sample consisted of nurse practitioners randomly chosen from each of the twelve member organizations of the National Alliance of Nurse Practitioners. The targeted sample size was 2000 with a total sample of 1407 returned surveys deemed appropriate for use in the research.

The survey instrument was divided into five different sections. The first was a demographic section designed to gather data about the provider. The last four areas addressed preventative services provided in health care settings: preventative assessment services, counseling and treatment of patients who need intervention, basic screening and immunization services, and office resources for preventative services. Participants were instructed to estimate the percent of patients receiving each service.

According to Lemley et al. (1994) the average age of nurse practitioner respondents was 44 years. The largest

percentage (68%) of respondents reported practicing in cities with populations greater than 50,000. Only 5% cited practice settings in rural areas with populations of less than 2,500. The east coast area of the United States had the highest representation (39%) of respondents, with the south central section of the country having the least representation (10%).

Lemley et al. (1994) found that nurse practitioners were above many of the targets identified by Healthy People 2000. Assessment of emotional and behavioral functioning, family planning, and preconception care were listed by all specialties as routinely performed services. Pediatric NPs reported exceeding targets in assessment of parent/child relationships and routine measurement of height, weight, blood pressure, hematocrit, and hemoglobin. Adult NPs were found to exceed Healthy People 2000 objective targets related to maintaining medicine logs for older patients and reviewing these logs prior to prescribing new medications. Adult NPs also exceeded targets in the area of mobility assessment and fall prevention. Obstetrical/gynecological NPs consistently provided breast exams, Papanicolau smears, and mammography at levels above targeted objectives.

Lemley et al. (1994) concluded that nurse practitioners already exceed the Healthy People 2000 objectives in the areas of assessment for preventative services. However, NPs must make progress in the areas of interventions associated with preventative services. These interventions include

services such as adult immunizations and vaccines, nutrition and exercise programs, and interventions for the abuse of cigarettes, drugs and alcohol.

Lemley et al. (1994) described areas in which NPs consistently provide preventative health services. This information assisted the researcher to identify practice patterns. Along with patterns of practice, opportunities for improvement were recognized.

Factors affecting role performance were studied by Thibodeau and Hawkins (1989). This descriptive correlational investigation examined the attitudes and values of nurse practitioners relating to their overall role. The purpose of the study was to determine how the nurse practitioner perceived personal knowledge and skills and how this assessment related to job performance. The research questions used for this study were as follows: What level of self confidence in skills and knowledge base did nurse practitioners hold? What attitudes did nurse practitioners possess relating to the primary care role of the practitioner? What correlation exists between knowledge and skills and attitudes and values? What is the relationship of attitudes and values to educational background as nurse and as a nurse practitioner and years experience of each role? What is the relationship between the variables of skills and knowledge and the variables professional preparation and years experience as nurse and nurse practitioner?

A mailed survey was used to gather data from a randomly selected sample of 135 nurse practitioners representing all specialty areas. A self assessment survey developed by the researchers consisted of 65 essential skills or items of knowledge required of the nurse practitioner. Participants were asked to rate their levels of confidence in performance of the skill or in knowledge of the item. A scale of 1 to 10 was utilized for rating each item. The 37-item survey used to measure attitudes and values also was developed by the researchers. A scale of 1 to 6 was used to rate levels of agreement with each statement. Of the 135 surveys mailed, 70 (52%) were returned.

Participant years in nursing ranged from less than one year to 40 years with a mean of 17.61 years. The number of years as a nurse practitioner ranged from less than one year to 16 years with a mean of 7.20 years. The educational preparation of the sample indicated 44.3% of the participants had a master's degree in nursing. A baccalaureate degree was the highest degree held by 27.2% with diploma prepared nurses following with 21.4% of the sample. The highest percent of the sample (62.9%) indicated a certificate as preparation for the nurse practitioner role. Nurse practitioners with a master's degree made up 30.0% of the survey sample. Multiple specialty areas, including pediatrics, family practice, adult and geriatric nurse practitioners were included in the responding sample.

The scores of the skills and knowledge assessment tool reflected a high confidence level for nurse practitioners. Skills that nurse practitioners were asked to evaluate included items such as assess heart sounds, perform pelvic exams, develop a definition of health and relate it to a model of nursing practice, analyze financial aspects of nurse practitioner role, develop and monitor quality assurance activities and develop a needs assessment. The two items which emerged with the highest degree of confidence were knowledge of the component parts of the health history and knowing the difference between objective and subjective data. Items low in confidence levels were the ability to apply a conceptual model of nursing to practice, to incorporate research into the practitioner role, and to perform a developmental assessment.

Thibodeau and Hawkins (1989) further demonstrated items with the highest level of agreement included the need for quality assurance and evaluation of the practice, the definition of health as harmony of mind, body and spirit, and the need for nurse practitioners to receive third party payment as independent practitioners. The item recording the least agreement by the nurse practitioner survey participants was the need for nurse practitioners to be skilled in differential diagnosis of all common illnesses. The areas in which responses demonstrated the greatest variability included whether or not nurse practitioners can practice independently within the scope of nurse practice



acts, whether leadership within the profession is central to the role of the nurse practitioner and whether nurse practitioners in practice with a physician have greater status.

Thibodeau and Hawkins (1989) demonstrated that nurse practitioners included in the survey indicated a high confidence level in their abilities to perform skills related to their role. The authors were unable to demonstrate any correlation between educational preparation or nurse practitioner preparation and the scores received on the survey. No significant correlations were demonstrated between the scores on the skills and knowledge survey and the attitudes and values survey results. This study was significant to the current research in that the premise that confidence could breed autonomy had an impact on tasks performed without consultation between the performing practitioner and the precepting physician.

Advanced practice nurses have faced a variety of legislative limitations in the practice of their profession. In 1995 Pearson surveyed state's legislative, legal, prescriptive authority, and reimbursement status affecting advanced nursing practice. A nationally increasing trend toward greater legislative autonomy and authority emerged as a finding. Even though several states still do not allow nurse practitioners to diagnose and treat, barriers within these states were beginning to weaken (Pearson 1995). Pearson determined that no state had legislation that would

create a more restricted practice by the advanced practitioner. During the year 1994, 12 states either added independent prescriptive authority or decreased restrictions associated with prescriptive authority for the nurse practitioner. The author stated that during the year 1995, 10 more states indicated plans to seek independent prescriptive authority for their nurse practitioners. Twenty states had title protection for the advanced practice nurse with the Board of Nursing as the sole authority in the scope of practice with no requirement for physician collaboration or supervision. There were 18 states in which the Board of Nursing had sole authority in determining scope of practice for the advanced practice nurse. However these states have incorporated a requirement for physician collaboration or supervision into the regulations. There were five states that had a scope of practice jointly authorized by the Board of Nursing and the Board of Medicine. By reviewing Pearson's findings, the current author gained a broader knowledge base of geographic variances and the effect of location on practice patterns of nurse practitioners.

Within the state of Mississippi the researcher hypothesized that geographic locale does have an effect on the practice pattern of the nurse practitioner. The current research focused on practice pattern variances and the relation of these variances to practice location. Data gathered from nurse practitioners can lead to further

insight into the role of the advanced practice nurse. This insight could prove beneficial to a variety of sources including nurse practitioner graduates, educators, and potential physician preceptors.

## Chapter III

### The Method

The relationship of the nurse practitioner's practice style and pattern as it corresponds to clinical setting has not been established in the literature. The purpose of this study was to correlate the variables of role performance of the nurse practitioner in an independent setting and practice patterns of the nurse practitioner in a collaborative practice arrangement. The empiricalization of the problem is described in this chapter including design of the study, method of data collection, and data analysis.

#### Design of the Study

A descriptive, comparative design was chosen for this study. The purpose of descriptive research is to describe and document aspects of a situation as it normally occurs (Polit & Hungler, 1991). In this study, variables of demographics, practice arrangements, practice settings and practice patterns were assessed; therefore, a descriptive, comparative design seemed appropriate.

### Variables.

The variables of interest included the demographics specific to settings and situations unique to those primary care clinics where nurse practitioners provide patient care in the state of Mississippi. The demographic data included nurse practitioner preparation, experience prior to present role, time in nurse practitioner role, on or off site preceptor, distance from preceptor, frequency of contact with preceptor, type of practice, and clinic ownership. Other variables related to the tasks performed by nurse practitioners in their clinics. These variables focused on specific tasks within the broad categories of diagnostics, treatments, financial/office management, minor surgical procedures, and reimbursement. Intervening variables may have included honesty in response, validity of instrument, and tendency of the participants to provide socially desirable responses (see appendix A).

### Setting, Population and Sample

The proposed setting for this study included practice settings which employed family nurse practitioners and was located in the state of Mississippi. Mississippi is one of the few states in the country which does not recognize physician assistants, a fact which may have contributed to a more positive environment for the nurse practitioner. Practice settings were defined as any clinical site where a

certified nurse practitioner provided primary care to a client population. Locations included physician offices, nurse practitioner clinics, home care environment, hospital-based outpatient clinics, and emergency rooms. The population was advanced practice nurses certified as Family Nurse Practitioners and certified to practice in the state of Mississippi. Certified Nurse Practitioners instructing in the advanced practice program in which the researcher attended were excluded.

A computerized listing of all advanced practice nurses in the state of Mississippi was obtained from the state's Board of Nursing. This list was subdivided into categories specific to type of practice certification. From this list 241 certified Family Nurse Practitioners were identified. Each name was numbered; then a randomly selected convenience sample of two hundred was obtained by randomly selecting numbers from a common pool. Each number corresponded with a nurse practitioner's name on the list provided by the Board of Nursing. This process continued until 200 names were identified for the sample. The actual sample included 143 responses for a return rate of 72%. An additional six surveys were returned due to lack of forwarding addresses for those who had relocated following certification

## Methods of Data Collection

### Techniques/Instrumentation.

A survey instrument specifically addressing practice patterns was devised by the current researcher. The questionnaire was developed to compare and describe the differences in practice patterns of primary care family nurse practitioners (see Appendix A). A more concise instrument that included pertinent demographic data also was developed to complement the basic survey tool. Return of the questionnaire indicated implied consent. Assurance of confidentiality also was included in the cover letter (see Appendix B).

The demographic and tasks sections of the survey instrument were both patterned after the Davis Survey (Davis 1992), which was used to solicit acceptance level of geriatric nurse practitioners by physicians. The Davis Survey was deemed to have face validity in prior research. Both instruments included a demographic section and a task section. Tasks were chosen based on procedures commonly performed in family practice settings. In order to evaluate a diverse selection, tasks representing clinical care issues, administrative duties, and reimbursement procedures were included in the survey tool. The Davis survey was directed to physicians, while the Wallace survey was directed to nurse practitioners.

The Wallace Survey instrument was developed to include demographic data to serve as the basis for differentiating

practice site and situation, in particular whether a nurse practitioner is in independent or collaborative practice. The questionnaire utilized a two section design. The first, or demographic section, consisted of eight closed multiple choice questions. These questions dealt with prior nursing experience, time in the nurse practitioner role, proximity of physician preceptor, frequency of contact with preceptor, type of practice, and ownership of clinic. The task oriented section of the questionnaire consisted of 32 closed multiple choice questions. These questions dealt with task related aspects of primary care practice and focused on the broad areas of diagnostics, treatments, financial/office management, minor surgical procedures and reimbursement. The questionnaire required approximately five (5) minutes to complete.

#### Procedure.

Approval to conduct the study was obtained from the Mississippi University for Women Committee on Use of Human Subjects in Experimentation as the first step in the data collection process for this research (see Appendix C). Once approval was granted the Mississippi Board of Nursing was contacted and a categorized list of advanced practice nurses was obtained. From this list the number of Family Nurse Practitioners was determined as 241. A packet was mailed to the randomly selected sample of 200 nurse practitioners. This packet consisted of a cover letter explaining the study and a statement that described completion and return of the



questionnaire as consent to participate (Appendix B). A copy of the survey instrument and a self-addressed envelope to facilitate easy and rapid return of the completed questionnaire also were included in the packet. A reminder letter (Appendix D) was mailed to each participant two weeks following the initial mailing. This letter requested timely return of any unmailed surveys and expressed appreciation to those who has already returned their survey to the researcher.

### Limitations

This study had limited external validity in that the sample was limited to the primarily rural state of Mississippi. Therefore, the results could be generalized only to family nurse practitioners who practiced in Mississippi. The Wallace Survey was a researcher developed tool of which reliability and validity had not been established; however, face validity was assumed as it pertains to this study. Development of a researcher designed tool was necessary as no other applicable tools were available. A convenience sample was utilized; therefore, true randomization was not possible. Even without true randomization, this study is strong in that it realistically reflects the phenomena being researched, compared, and described (Polit & Hungler, 1995). It should be noted that this study serves as an excellent pilot study

to describe differences in practice patterns by setting and situation.

### Methods of Data Analysis

Returned surveys were reviewed for demographic trends as well as trends in practice patterns. Results of returned surveys were reviewed individually and collectively to obtain comparison percentages. Contrasts between independent practice and collaborative practice were evaluated in relation to whether or not certain tasks were performed in the primary care clinic setting. Whether or not consultation with the preceptor occurred prior to initiating said tasks was another element compared by the researcher. Demographic data was summarized to include comparative means and variances of experience and practice environment.

### Summary

This research was completed using a descriptive, comparative study design in which variables including demographics and primary care tasks were assessed and correlated according to practice setting and arrangement. The setting, population and techniques for data gathering and analysis were described. Limitations of this research also were presented.

## Chapter IV

### The Findings

The purpose of this study was to compare the practice patterns of family nurse practitioners in collaborative practice and family nurse practitioners in independent practice, and to determine if differences exist in practice patterns by task. A descriptive design was employed. Data were derived from the Wallace Survey to ascertain and describe what practice tasks were being performed by family nurse practitioners in Mississippi, and whether said tasks were performed with or without prior consult with physician preceptors. This chapter explains the empiricalization of the data gathered in this study. Demographic description of the participants and results of the data analysis are presented.

#### Description of the Sample

The convenience sample (N = 143) included 81 (57%) family nurse practitioners whose physician preceptor(s) were in the same facility, denoting collaborative practice, and 62 (43%) family nurse practitioners whose physician

preceptor(s) were off site, denoting independent practice. All nurse practitioners were certified by the state of Mississippi to function in the advanced practice role. Educational preparation for collaborative practitioners was 68 (84%) Master's Degree, 10 (12%) Post Master's Certificate, and 3 (4%) Certificate program. Educational preparation for independent practitioners was 55 (89%) Master's Degree, 3 (4%) Post Master's Certificate, and 4 (7%) Certificate program. Length of prior nursing experience for collaborative practice subjects ranged from 1 to 30 years with a mean of 12.57 years, while those in independent practice ranged from 2 to 30 years with a mean of 10.90 years. Length of time in the nurse practitioner role varied from 6 months to 23 years with a mean of 3.11 years for collaborative practice subjects and 6 months to 21 years with a mean of 5.14 years for those in independent practice.

Further analysis of demographic data indicated variances in the proximity of physician preceptor as well as frequency of contact. Distances from physician preceptor ranged from five miles or less to greater than 25 miles. The majority (44%) indicated a practice setting ranging from six to 15 miles. Five (8%) of the respondents indicated a practice setting of greater than 25 miles. Frequency of contact between nurse practitioners and their respective physician preceptors was as follows: 27% indicated weekly, 26% indicated biweekly, 23% indicated daily, and 24%

indicated other. The most common comment included in the "other" category denoted monthly contact with preceptor.

Clinic ownership and type of practice were varied among respondents. Sites for practice included hospital practice (5), home care (4), physician office (6), health department (5), rural clinic (40), emergency department (4), nurse practitioner clinic (3), urban (2). Other practice sites included community health, campus health center, nursing home, and occupational health. Ownership of clinic included hospital based corporations (40%), private corporations (24%), private physicians (7%), and nurse practitioner owned (5%). Other types of ownership indicated by nurse practitioners included community health system, universities, and state health department (see appendix E).

### Results of Data Analysis

One research question guided this study: Is there a difference in the practice patterns of family nurse practitioners in collaborative practice and independent practice? The responses to 32 closed multiple choice questions by the two groups were first compared by percentile. An item analysis by task, including whether these tasks were performed with or without prior consult with preceptor, was performed.

When comparing task performance without preceptor consult, several tasks emerged in which independent and

collaborative nurse practitioners indicated high levels of agreement. These included diagnose and treat UTIs, with collaborative 97% versus independent 97%; diagnose and treat acute illnesses, with collaborative 99% versus independent 95%; perform pelvic exams, with collaborative 96% versus independent 97%; and prescribe nonscheduled meds, with collaborative 89% versus independent 97%. Other tasks with a high level of variance were also noted. These included suture lacerations, with collaborative 44% versus independent 68%; order clinic equipment, with collaborative 36% versus independent 68%; refer to other specialties, with collaborative 57% versus independent 79%; develop clinic policies and procedures, with collaborative 33% versus independent 58%; and perform simple biopsies, with collaborative 16% versus independent 29%. These data are presented in Table 1.

Next, data were grouped into three categories by task orientation. These categories were clinical tasks, administrative tasks, and reimbursement processes. Break down by category and question included clinical tasks in questions 3, 4, 6, 7, 8, 10, 12, 13, 14, 15, 16, 19, 20, 22, 23, 24, 26, 27, 28, 31, and 32. Administrative tasks were represented in questions 5, 9, 11, 17, and 31. The final category was involvement in reimbursement processes and included questions 12, 18, 25, 29, and 30. Comparison by percentile is presented in Figure 1.

**Table 1****Task Item Analysis of the Wallace Survey by Percentile**

Nurse Practitioner Tasks	<u>Collaborative</u>			<u>Independent</u>		
	<u>With Consult</u>	<u>Without Consult</u>	<u>NA</u>	<u>With Consult</u>	<u>Without Consult</u>	<u>NA</u>
1. Perform employment/ DOT/insurance/disability physicals	16%	69%	15%	7%	74%	19%
2. Bill for third party payment	7%	49%	43%	5%	48%	47%
3. Prescribe antihypertensive meds to newly diagnosed hypertensive patients	26%	73%	1%	11%	76%	13%
4. Suture lacerations	19%	44%	37%	5%	68%	27%
5. Order medical equipment and supplies for clinic	12%	36%	52%	6%	68%	26%
6. Diagnose and treat UTIs based on clinical findings and lab reports	3%	97%	0%	0%	97%	3%
7. Initiate treatment for non-insulin dependent diabetics	24%	72%	5%	18%	73%	9%
8. Excise lesions, warts, nevi, etc.	15%	26%	59%	16%	40%	44%
9. Have responsibility for regulatory compliance (OSHA, CLIA, Rural Health, etc.	7%	37%	56%	20%	53%	27%
10. Refer to other medical specialties i.e. cardiologists, surgeons, etc.	43%	57%	0%	19%	79%	2%
11. Supervise billing and collections.	3%	7%	90%	1%	34%	65%
12. Splint and cast simple, non-displaced fractures.	20%	7%	73%	13%	21%	66%
13. Prescribe a diabetic diet for newly diagnosed diabetics.	7%	86%	6%	5%	87%	8%
14. Diagnose and treat acute illnesses, i.e. URI, bronchitis	1%	99%	0%	2%	95%	3%

Table 1 – Continued

Nurse Practitioner Tasks	<u>Collaborative</u>			<u>Independent</u>		
	<u>With Consult</u>	<u>Without Consult</u>	<u>NA</u>	<u>With Consult</u>	<u>Without Consult</u>	<u>NA</u>
15. Treat patients with CHF	61%	32%	7%	55%	34%	11%
16. Initiate treatment for insulin dependent diabetics.	56%	37%	7%	58%	27%	15%
17. Order xrays and other diagnostic procedures.	7%	93%	0%	13%	86%	1%
18. Treat patients belonging to HMOs and PPOs.	7%	70%	23%	6%	68%	26%
19. Order EKGs and initial cardiac workup.	24%	74%	2%	8%	84%	8%
20. Interpret xrays and other diagnostic procedures.	64%	22%	14%	57%	24%	19%
21. Develop clinic policies and procedures.	43%	33%	24%	26%	58%	16%
22. Perform pelvic exams and pap smears.	3%	96%	1%	0%	97%	3%
23. Interpret EKGs and other cardiac studies.	73%	21%	6%	57%	24%	19%
24. Perform simple biopsies.	9%	16%	75%	8%	29%	63%
25. Receive fixed encounter rate for Rural Health services.	3%	33%	64%	6%	44%	50%
26. Prescribe nonscheduled medications for acute problems, i.e. respiratory, eye disorders.	10%	89%	1%	3%	97%	0%
27. Adjust anticoagulant therapy based on routine reports from lab and clinical signs and symptoms of clients.	43%	38%	19%	50%	32%	18%



Table 1 -- Continued

Nurse Practitioner Tasks	Collaborative			Independent		
	With Consult	Without Consult	NA	With Consult	Without Consult	NA
28. Make referrals to other medical specialties such as physical therapy, occupational therapy, speech therapy, social work.	20%	77%	3%	7%	90%	3%
29. Work with Home Health agencies to monitor home health clients.	35%	47%	18%	18%	58%	24%
30. Receive fee for service for Rural Health Clinic Services.	6%	30%	64%	23%	74%	3%
31. Perform trigger point/joint injections.	11%	4%	85%	3%	8%	89%
32. Remove foreign body from eye.	27%	30%	43%	18%	37%	45%

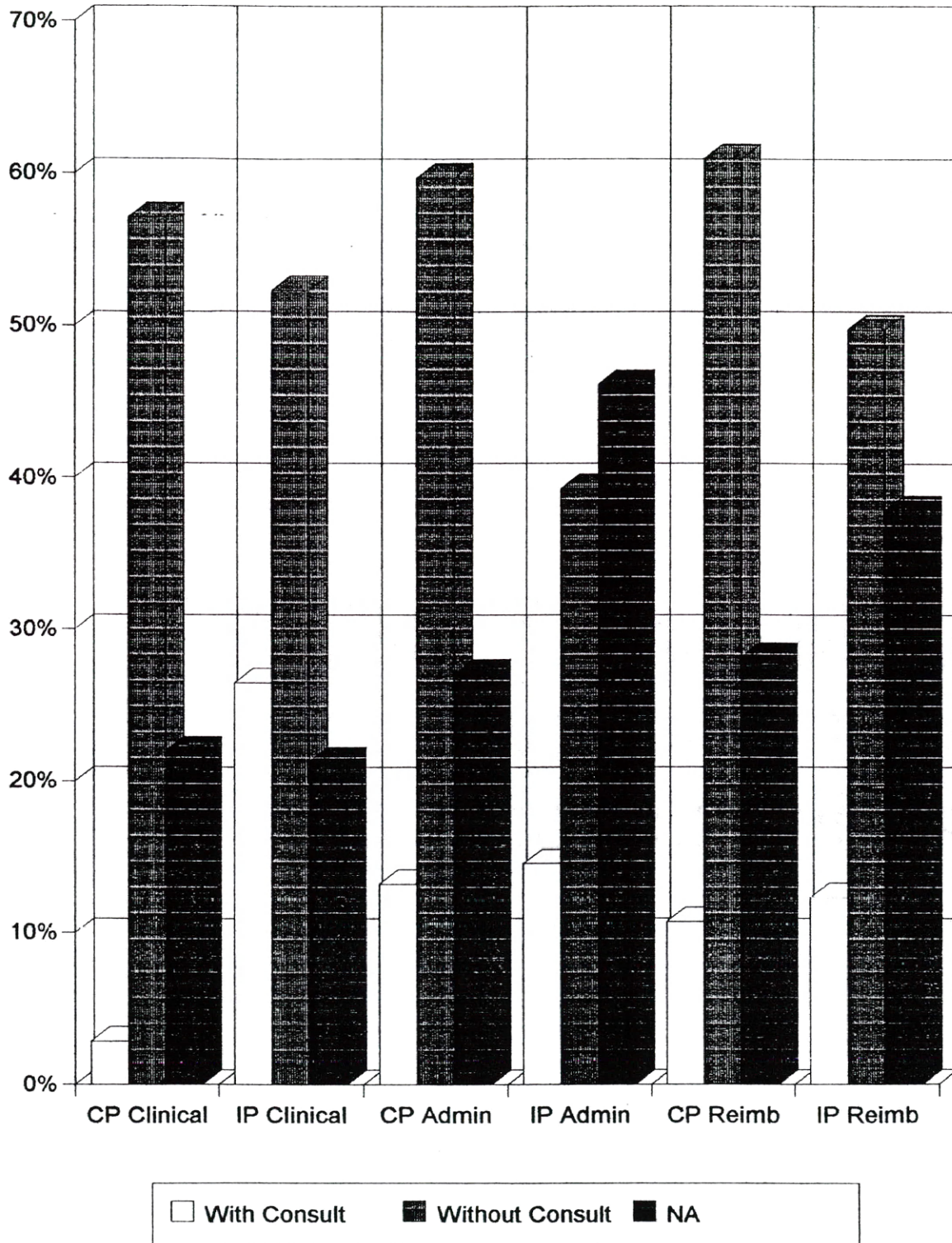


Figure 1. Tasks comparison by category

Finally, categorical comparison was subjected to Chi square analysis at the 0.05 level of significance. Obtained values were significant for the three task categories: Clinical tasks  $X^2(2, N=143)=13.1, p=.0014$ ; administrative tasks  $X^2(2, N=143)=11.1, p=0.0038$ ; and reimbursement tasks  $X^2(2, N=143)=32.3, p=0.0001$ . For all three categories the researcher determined there is a difference in the practice patterns of family nurse practitioners in collaborative and independent practice arrangements. It was consistently demonstrated that those practitioners in collaborative practice consulted their physician preceptors more frequently than their counterparts in independent practice.

#### Additional information

A significant number of respondents added to the survey tool comments relevant to their practice. One nurse practitioner stated, "I have one preceptor who does not think NPs should suture, so I have to consult him until I can prove myself." She further indicated that other tasks also vary according to the preceptor. Other comments included reminders that certain insurance companies require a physician signature, so consult is mandated in these instances.

Other pertinent demographic data were obtained regarding type of practice and ownership of clinic. Respondents checked all that applied (see Appendix E).

### Summary

The results of the data analysis utilizing percentile comparisons and Chi-square statistical testing were reviewed and described in Chapter IV. In-depth comparison by specific task and category concerning role performance and practice patterns was discussed and described. Statistical analysis proved that significant differences exist in the practice patterns of family nurse practitioners in collaborative and independent practice arrangements. Chapter V will provide further insight into this phenomenon through discussion, conclusions, implications and recommendations.

## Chapter V

### The Outcomes

Nurse practitioners provide health care in a variety of settings, ranging from private physician offices, to urban emergency rooms, to public health departments as well as others. Regardless of how these settings differ, all can be subdivided into two broad categories, collaborative practice, in which the physician and nurse practitioner are located in the same practice locale, and independent practice, in which the physician preceptor is not in the same facility. The purpose of this study was to determine if differences exist in the practice patterns of nurse practitioners in independent practice and nurse practitioners in collaborative practice. This descriptive comparative study was guided by the American Nurses Association Social Policy Statement. This chapter includes a discussion of the findings obtained from this study. Also presented in this chapter are the conclusions, implications for nursing, and recommendations.

### Summary of Significant Findings

The sample for this study was 143 family nurse practitioners certified to practice in the state of Mississippi. The majority of the collaborative group were educated at the Master's level (96%) and had a mean of 12.57 years of nursing experience, with a mean of 3.11 years as a nurse practitioner. The majority of the independent group were also educated at the Master's level (93%) and had a mean of 10.9 years of nursing experience and a mean of 5.14 years as a nurse practitioner. Nurse practitioners prepared at the certificate level comprised less than 8% for both groups.

Participants were surveyed utilizing the researcher designed Wallace Survey which contained 32 task oriented, closed ended multiple choice questions that determined whether said tasks were performed with or without physician consult. A choice of not applicable was available to identify tasks not performed by the nurse practitioner. Analysis of the 143 (72%) returned surveys was accomplished using descriptive comparative statistics.

The research hypothesis, there is no difference in the practice patterns of nurse practitioners in collaborative practice and nurse practitioners in independent practice, guided this study. Practice patterns were subdivided into three categories: clinical, administrative and reimbursement. Using Chi-square analysis, significant differences emerged for all categories: clinical tasks,

$\chi^2(2, N=143)=13.1, p=.0014$ ; administrative tasks,  $\chi^2(2, N=143)=11.1, p=0.0038$ ; and reimbursement tasks,  $\chi^2(2, N=143)=32.3, p=0.0001$ . Therefore, the researcher rejected the null hypothesis. There is a difference in practice patterns between the two groups of practitioners.

### Discussion

Since practice patterns of nurse practitioners have not been researched, the findings of this study can neither be supported or refuted. However, Gordon and Erickson (1993) performed a study of Certified Nurse Midwives in the state of Arizona which compared practice patterns of nurse midwives in rural and urban practice settings. This comparison of practice patterns in rural and urban Arizona indicated that practice variances did exist for certified nurse midwives based on practice location. The findings of this research demonstrated a finding parallel to the current study's finding in which variances did exist between independent and collaborative practices.

In the current research demographic data may have influenced the findings. More independent practice arrangements (65%) by nurse practitioners were in rural areas than in urban areas. Of the respondents indicating collaborative practice, 54% stated that their practice was located in an urban area. Demographic differences also were reflected in the years of nurse practitioner experience.

Nurse practitioners with more experience (mean of 5.14 years) tended to practice independently, while the less experienced (mean of 3.11 years) nurse practitioner practiced collaboratively. This researcher credited this demographic distribution to the ability of nurse practitioners to fill the primary care void in rural areas. The more experienced nurse practitioner was able to confidently fill the void created by the lack of physicians.

A comparison of data (Gordon & Erickson, 1993) indicated the average length of time since original certification for the Arizona midwives was 5.4 years for those in rural areas and 6.2 years for those in urban practices. In Arizona the majority of applicants available to fill the needs of the rural community were younger, less experienced nurse midwives. The Wallace survey revealed an opposite relationship between experience and type of practice. The time in position for Mississippi nurse practitioners in independent practice was 5.14 years and 3.11 years for those in collaborative practice. This finding may indicate the tendency for the more experienced Mississippi practitioner to practice independently and less experienced practitioners to practice collaboratively.

Gordon and Erickson (1993) found through their research that independent advanced practitioners demonstrated a tendency to provide a wider range of clinical services than those in collaborative practice. Rural midwives provided prenatal, labor and delivery, postpartal, and newborn care



while urban midwives were much more limited in their scope of services. The current research supports these findings as a wider range of services were offered by independent nurse practitioners practicing in rural Mississippi. These included excision of skin lesions, splint and cast simple non-displaced fractures, and perform simple biopsies. Even though both groups of nurse practitioners performed these procedures, independent nurse practitioners indicated a significantly higher frequency than their collaborative practice counterparts.

The Wallace survey indicated that collaborative practice nurse practitioners demonstrated a tendency to consult physician preceptor prior to performing certain tasks more frequently than their independent practice counterparts. The increased frequency of consultation was possibly due to two factors. The close proximity of physician preceptor and thus ease of consult may increase the frequency of consultation. The second factor may be the need for the less experienced practitioner to consult more frequently.

Scope of practice as defined by the Mississippi Board of Nursing indicates the upper limits of patient care activities allowed to the family nurse practitioner. Through the Social Policy Statement, the ANA also describes the scope of practice of the advanced practice nurse. The current researcher explored implementation of this scope of practice as applied to advanced practice nurses who practice

in either independent or collaborative practice roles. The current researcher also demonstrated that practice location impacted the practice patterns of the family nurse practitioner as much as state legislation. Mahoney (1995) demonstrated this same phenomenon in research addressing prescriptive authority for nurse practitioners in Massachusetts. Mahoney indicated that the most significant reason for these nurse practitioners not applying for prescriptive authority was that employers would not allow nurse practitioners to prescribe medications regardless of legislation.

Mahoney indicated employer support as a key factor in whether or not prescriptive authority was sought by the practitioners. This study indicated that practice location for a significant number of the respondents was large organizations including teaching hospitals. Practice patterns for these nurse practitioners are dictated by administration staff, thereby limiting prescriptive authority and practice autonomy, thus further explaining increased frequency of consultation and fewer tasks and procedures performed in collaborative practices.

Thibodeau and Hawkins (1989) examined the relationship of attitudes and values to role performance of the nurse practitioner. The nurse practitioners' perception of personal knowledge and how this assessment related to role performance were the key elements explored by the authors. The study indicated that those skills in which a nurse

practitioner has a high confidence level were parallel to those skills most commonly performed. The highest degree of confidence was demonstrated in knowledge of the component parts of the health history and knowing the difference between objective and subjective data.

The premise of confidence could breed autonomy had an impact on tasks performed without consultation between the performing practitioner and the precepting physician. This assumption is validated by the responses on the Wallace survey indicating which tasks were most often performed without consult by both groups. These included prescribe antihypertensive medications to newly diagnosed hypertensive patients, diagnose and treat urinary tract infections based on clinical findings and lab reports, perform pelvic exams and pap smears, order electrocardiograms and initial cardiac workup, and prescribe non-scheduled prescriptions for acute problems such as respiratory problems and eye disorders. As the researcher evaluated these responses, the commonality of these tasks became apparent. All can be related to the high confidence levels of nurse practitioners demonstrated by Thibodeau and Hawkins (1989). The ability to obtain a thorough history, recognize and evaluate subjective and objective data is a key component in the patient care activities nurse practitioners commonly performed.

The current research demonstrated a significant number of responses in the not applicable category. Since all tasks represented in the current research were within the

scope of service of the Mississippi certified family nurse practitioner, this is as indication that external forces influenced their choice to not perform a certain task. Examples of clinical tasks indicated as not performed by many of the nurse practitioners included splint and cast simple non-displaced fractures, perform trigger point/joint injections and remove foreign body from the eye.

Many of the not applicable tasks fell into the administrative and reimbursement categories. These tasks included ordering equipment and supplies, having responsibility for regulatory compliance such as OSHA and CLIA, supervising billing and collections and developing clinic policies and procedures. Comments from several nurse practitioner respondents indicated that they were not involved in reimbursement procedures. This finding may have been due to the fact that some insurance carriers do not recognize nurse practitioners as providers and would only accept physician services; thus nurse practitioners tended to abstain from involvement.

The ANA Social Policy Statement states that the advanced practitioner must assume other advanced roles in the profession (ANA, 1987). True to the Social Policy Statement, this researcher felt that independent nurse practitioners demonstrated more involvement in the clinic's business and administrative issues than collaborative practice practitioners. The reason for this increased involvement may be due to necessity, since rural clinics

tend to be smaller with fewer employees, thereby requiring the nurse practitioner to take a more active role in the running of the clinic. Additionally, reimbursement to nurse practitioners practicing in rural clinics is recognized by some insurance companies; thus these providers are involved in the reimbursement process.

### Conclusions

The findings of this study revealed that a significant difference exists in the practice patterns of nurse practitioners in collaborative practice and those in independent practice. Variances in the frequency of consult demonstrated that nurse practitioners in independent practice arrangements rely less often on consult with physician preceptor. This may be due to the level of self confidence and practice autonomy that independent nurse practitioners possess. The tendency of nurse practitioners in collaborative arrangements to consult more frequently is most likely due to the close proximity of the physician preceptor and subsequent ease of consult. Comparison of this data to previous studies was not possible as studies addressing this phenomenon did not exist.

Statistical differences were noted in the categories of administrative tasks and reimbursement processes as each related to independent and collaborative practice arrangements. The researcher concluded from this research

that family nurse practitioners in independent practice take a more active role in the day-to-day operational issues of the clinic.

Another significant conclusion derived from this research was the fact that nurse practitioners in independent practice demonstrated more tenure (mean 5.14 years) in their role as family nurse practitioners than those in collaborative arrangements (mean 3.11 years). These findings may be due to the need of nurse practitioners to practice collaboratively in order to first establish a level of confidence. Once this self confidence has been attained, the nurse practitioner may be more likely to move to independent practice and the autonomy that this arrangement provides.

#### Implications for Nursing

Several implications for nursing were derived from this study. Implications are included for nursing practice, research, theory, and education.

Practice. Little or no information has been available to adequately describe how practice patterns are affected by the environment. Relative to nurse practitioner practice, this researcher identified differences in practice patterns in independent settings as compared to practice patterns in collaborative practice arrangements. These differences included what tasks were or were not performed in a practice

setting or arrangement and whether or not consult with physician preceptor occurred prior to performing said tasks. This information is invaluable in assisting new nurse practitioners in determining practice arrangements to meet their personal and professional goals. This study described the variations in tasks performed as they related to clinical situation or personal choice of advanced nurses, thereby providing insight into options available in the practice arena.

Another implication for nursing practice is the need for identifying the external factors that limit nurse practitioners' practice in the state of Mississippi. Both collaborative and independent nurse practitioner respondents indicated not applicable for various tasks listed in the Wallace Survey. However, this survey failed to seek reasons for limitation of practice performance.

Research. No studies were found that compared or examined practice patterns of nurse practitioners in independent and collaborative practice arrangements. Further research should include why consults are performed prior to performing certain tasks. Explanations as to why certain tasks, within the scope of practice, are not performed also are needed to determine what factors limit nurse practitioner performance in the state of Mississippi. There is therefore a need for further research on this topic in other geographic locations.

Theory. The ANA Social Policy Statement identifies roles and tasks for the advanced practice nurse including develop diagnoses, plan and implement patient care, and evaluate outcomes of care. A broad description befitting all advanced practitioners is presented by the ANA. This study further explored and described these roles and practice tasks as implemented by family nurse practitioners in collaborative and independent practice. The ANA Social Policy Statement states that the advanced practitioner may assume other advanced roles in the profession (ANA, 1987). Further investigation of these and other roles of the advanced practice nurse is essential to the advancement of the nurse practitioner role.

Education. This study determined and addressed those functions and responsibilities that are commonly performed by nurse practitioners. It is essential for graduate nursing programs to be cognizant of changes and trends in patient care in order to adequately prepare future practitioners. Identification of skills unique to practice locations can assist graduate nursing faculty in tailoring curricula to meet the needs of advanced practice students and graduates. This research also documented the need for further education of third party payers as to the high quality, cost efficient care provided by nurse practitioners.



## Recommendations

Based on the findings of this study, the following recommendations are made.

### Nursing Research

1. Since this study focused only on the predominantly rural state of Mississippi, replication of this study utilizing participants from urban and rural areas from other states is recommended.

2. Since validity and reliability has not been established, replication of this research utilizing the Wallace Survey is recommended.

3. Since third party payers are not appreciative of the fact that nurse practitioners provide high quality, preventative, cost effective care, similar research should be performed in collaboration with these bodies.

### Nursing Practice

1. Since literature is limited regarding practice patterns of nurse practitioners, publication of this study is recommended.

2. Since this study did not request explanation of what factors limit nurse practitioners' practice patterns, replication of this study is recommended.

### Nursing Education

Since graduate nursing curricula must be tailored to current practice trends in order to meet the needs of advanced practice students and graduates, ongoing replication of similar studies is recommended.

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## **APPENDICES**

**APPENDIX A**

**APPROVAL OF COMMITTEE ON USE OF HUMAN  
SUBJECTS IN EXPERIMENTATION**



MISSISSIPPI  
UNIVERSITY  
FOR WOMEN

Columbus, MS 39701

Office of the Vice President for Academic Affairs  
Eudora Welty Hall  
P.O. Box W-1603  
(601) 329-7142

March 5, 1996

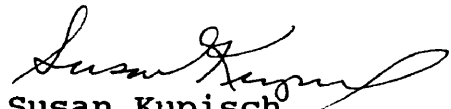
Mr. Emerson A. Wallace  
c/o Graduate Program in Nursing  
Campus

Dear Mr. Wallace:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research as submitted.

I wish you much success in your research.

Sincerely,

  
Susan Kupisch  
Vice President  
for Academic Affairs

SK:wr

cc: Mr. Jim Davidson  
Dr. Mary Pat Curtis



**APPENDIX B**  
**WALLACE SURVEY**

Wallace Survey

## Part I: Demographic Data

Please check the appropriate response(s) to the following questions.

1. Nurse Practitioner preparation.  
 Master's Degree                       Certificate Program  
 Post Master's Certificate
  
2. Length of nursing experience prior to becoming a nurse practitioner.  
 Number of years
  
3. Length of time in nurse practitioner role.  
 Number of years
  
4. Proximity of primary physician preceptor.  
 on site                                       off site  
 Other (specify) \_\_\_\_\_
  
5. If off site how far from your practice setting.  
 same community                       5 miles or less  
 6 to 15 miles                               16 to 25 miles  
 more than 25 miles
  
6. Frequency of contact with physician preceptor.  
 Daily     Weekly  
 Biweekly     Other
  
7. Type of nurse practitioner practice. (Indicate all that apply).  
 Hospital     Emergency Department  
 Home Care     Nurse Practitioner Clinic  
 Physician Office                                       Outpatient Clinic  
 Health Department                                       Industry  
 Rural     Urban  
 Other (Specify) \_\_\_\_\_
  
8. Ownership of clinic.  
 Private Physician                                       Hospital based corporation  
 Private corporation                                       Nurse Practitioner owned  
 Other (Specify) \_\_\_\_\_

## Part II: Nurse Practitioner Tasks

Please indicate with a check those tasks you perform and whether or not you consult your physician/preceptor prior to performing said task. If you do not perform a task check N/A.

<u>Tasks</u>	<u>With Consult</u>	<u>Without Consult</u>	<u>N/A</u>
1. Perform employment/DOT/insurance/disability physicals.	_____	_____	_____
2. Bill for third party payment.	_____	_____	_____
3. Prescribe antihypertensive meds to newly diagnosed hypertensive patients.	_____	_____	_____
4. Suture lacerations.	_____	_____	_____
5. Order medical equipment and supplies for clinic.	_____	_____	_____
6. Diagnose and treat UTIs based on clinical findings and lab reports.	_____	_____	_____
7. Initiate treatment for non-insulin dependent diabetics.	_____	_____	_____
8. Excise lesions, warts, nevi, etc.	_____	_____	_____
9. Have responsibility for regulatory compliance (OSHA, CLIA, Rural Health, etc.).	_____	_____	_____
10. Refer to other medical specialties i.e. cardiologists, surgeons, etc.	_____	_____	_____
11. Supervise billing and collections.	_____	_____	_____
12. Splint and cast simple non-displaced fractures.	_____	_____	_____
13. Prescribe a diabetic diet for newly diagnosed diabetics.	_____	_____	_____

<u>Task</u>	<u>With Consult</u>	<u>Without Consult</u>	<u>N/A</u>
14. Diagnose and treat acute illnesses i.e. URI, bronchitis.	_____	_____	_____
15. Treat patients with CHF.	_____	_____	_____
16. Initiate treatment for insulin dependent diabetics.	_____	_____	_____
17. Order x-rays and other diagnostic procedures.	_____	_____	_____
18. Treat patients belonging to HMOs and PPOs.	_____	_____	_____
19. Order EKGs and initial cardiac work-ups.	_____	_____	_____
20. Interpret x-rays and other diagnostic procedures.	_____	_____	_____
21. Develop clinic policies and procedures.	_____	_____	_____
22. Perform pelvic exams and pap smears.	_____	_____	_____
23. Interpret EKGs and other cardiac studies.	_____	_____	_____
24. Perform simple biopsies.	_____	_____	_____
25. Receive fixed encounter rate for Rural Health Services.	_____	_____	_____
26. Prescribe nonscheduled medications for acute problems, i.e. respiratory, eye disorders, etc.	_____	_____	_____
27. Adjust anticoagulant therapy based on routine reports from lab and clinical signs and symptoms of clients.	_____	_____	_____
28. Make referrals to other medical specialties such as physical therapy, occupational therapy, speech therapy, and social work.	_____	_____	_____

<u>Task</u>	<u>With Consult</u>	<u>Without Consult</u>	<u>N/A</u>
29. Work with Home Health agencies to monitor home health clients.	_____	_____	_____
30. Receive fee for service for Rural Health Clinic services.	_____	_____	_____
31. Perform triggerpoint/joint injections.	_____	_____	_____
32. Remove foreign body from eye.	_____	_____	_____

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**APPENDIX C**

**LETTER TO NURSE PRACTITIONERS**

Lee Wallace  
Route 3, Box 333  
Saltillo, MS 38866

Dear Mississippi Nurse Practitioner:

As a graduate student of the Mississippi University for Women and in partial fulfillment of the requirements for the degree of Master of Science in nursing, I am researching practice patterns of nurse practitioners in the state of Mississippi. My goal is to collect information that will assist the newly certified nurse practitioner in choosing a practice location that is compatible with his or her skills and practice style. As a nurse practitioner certified to practice, please assist me with data collection through the completion of the attached questionnaire. Confidentiality of name and practice location will be maintained and demographic data will be used for statistical purposes only. Return of the questionnaire will imply consent to participate in this study. Please return the questionnaire in the enclosed self addressed envelope.

Thank you very much for your prompt response and willingness to participate.

Lee Wallace

APPENDIX D  
FOLLOW UP LETTER



Lee Wallace  
Route 3, Box 333  
Saltillo, MS 38866

Dear Mississippi Nurse Practitioner:

Approximately 2 weeks ago you should have received a practice pattern survey from me. As I stated in the cover letter, this survey will assist me in the study of practice patterns of nurse practitioners in the state of Mississippi. If you have already completed the questionnaire, I would like to thank you for your time. I urge you to complete the questionnaire if you have not had the opportunity to do so yet. I appreciate your assistance in this endeavor.

Thank you,  
Lee Wallace

**APPENDIX E**  
**OTHER DEMOGRAPHIC DATA**

Other Demographic Data

## Collaborative Type of Practice

<u>13</u>	Hospital	<u>12</u>	Emergency Department
<u>6</u>	Home Care	<u>4</u>	Nurse Practitioner Clinic
<u>41</u>	Physician Office	<u>12</u>	Out Patient Clinic
<u>1</u>	Health Department	<u>2</u>	Industry
<u>44</u>	Rural	<u>2</u>	Urban
<u>14</u>	Other		

## Independent Type of Practice

<u>5</u>	Hospital	<u>4</u>	Emergency Department
<u>4</u>	Home Care	<u>14</u>	Nurse Practitioner Clinic
<u>6</u>	Physician Office	<u>3</u>	Out Patient Clinic
<u>5</u>	Health Department	<u>0</u>	Industry
<u>40</u>	Rural	<u>2</u>	Urban
<u>13</u>	Other		

## Ownership of Collaborative Practice

<u>20</u>	Private Physician	<u>31</u>	Hospital Corporation
<u>20</u>	Private Corporation	<u>0</u>	Nurse Practitioner Owned
<u>9</u>	Other		

## Ownership of Independent Practice

<u>4</u>	Private Physician	<u>25</u>	Hospital Corporation
<u>15</u>	Private Corporation	<u>3</u>	Nurse Practitioner Owned
<u>15</u>	Other		