

THE FAMILY NURSE PRACTITIONER
A RANDOMIZED STUDY

By

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A THESIS

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CHAPTER I

INTRODUCTION

Our health care delivery system is attempting to resolve the crisis brought about, in part, by the dramatic technological advances in science. We know much about creating and sustaining life, yet millions of persons are not able to receive essential primary care at a reasonable distance from their homes. At the same time, our country's population is gradually getting older (Mayer, 1977). This means that there will be an increased need for ambulatory health care by 2000 A.D. Alternative approaches, such as Health Maintenance Organization, Neighborhood Health Centers, and Migrant Health Centers, have been established and are being tested to provide ambulatory and preventive services (Lysaught, 1974). At the same time new providers of care, such as the family nurse practitioners and physician assistants have evolved within these primary care settings, so that assessment of the effectiveness of these organizations and professional care-givers is necessary if the health care delivery is to expand in these directions. So far the majority of studies conducted by researchers focusing on acceptability and effectiveness of nurse

practitioners in primary care have demonstrated no significant difference compared to physicians in the care given. Some nurses are disappointed with being "equal" in quality because they feel that the nursing component in ambulatory care is not being defined by the existing physician-oriented assessment tool (Williams, 1975). The purpose of this research was to measure potential differences in the process or in the outcome obtained that might more accurately describe the expanded nursing role in primary care.

Quality of care has been addressed in a great degree within the hospital setting, yet over 85 percent of all patients entering the health care system never enter the hospital (Lysaught, 1974). Therefore, it is in this large outpatient sector that further quality assessment should be directed. Access to records in private practices has been a problem because of lack of acceptance by the physician to third party surveillance (Lewis & Resnick, 1969). The prevalence of the Weed concept of problem-oriented charting in both institutions and outpatient offices, however, has assisted in the review of patient records (Greene, 1976).

In addition, now that physicians and nurses are sharing similar functions in ambulatory care, it is more feasible and justifiable that they be evaluated concurrently (Balit, 1975). It is also reasonable to expect nursing research to address the problem of quality assessment in ambulatory

care now that the role of the nurse is expanding toward that sector of health delivery.

Health professionals agree that our main objective in evaluation is improved patient outcome, either in terms of improved physical and emotional status, employability, or satisfaction with the care given. Debate still persists on what is to be evaluated. There is general agreement that there are three major factors in evaluation: (1) the care providers; (2) the care; (3) the care recipient (Bloch, 1975); which can be evaluated in terms of process and outcome. Quality care analysts have divided themselves into two main camps, process-focused and outcome-focused. Because both methods have methodological limitations, Bloch feels that we should develop a "process-outcome" type evaluation. At the same time she states that neither nursing nor any other professional group is ready to do this type of evaluation, but that we still should be striving to develop more criteria and methods for the process and outcome type evaluations.

According to Kessner (1973a), however, process and outcome can be measured simultaneously using his tracer methodology. By evaluation of the diagnostic, therapeutic and follow-up processes of "tracers" (common ailments) it is possible to assess the quality of routine care provided in a health care system. This is the concept upon which hyper-

tension was chosen as the "tracer" in the present study.

The present study evaluated both the process used by a family nurse practitioner and the outcome she influenced in terms of patient/client satisfaction. More specifically, the process the nurse practitioner used was compared to the traditional approach of primary health care, that is, the care delivered by a general medical practitioner.

Review of the Literature

Introduction

The review of the literature will emphasize quality assessment, using both medical and nursing approaches. In this manner the standard of care will be based on technical competence and the interpersonal relationship between patient and provider. Historically, medical reviews have emphasized technical competence and nursing has emphasized the psychosocial component in patient care. Traditional approaches currently used for evaluation such as structure, process, and outcome, will be explored in addition to new concepts such as those advocated by Kessner (1973b). Quality assessment in primary care settings and nurses functioning in these primary or ambulatory settings will also be discussed. The review is completed with a more detailed description of nurse practitioners in primary care settings.

Quality Assessment

Quality assessment has been the subject of research projects for decades, but the main focus has been on hospital standardization and improvement in medical record keeping (Lewis, 1973). In the 1960s and early 70s rising costs of health services prompted re-examination of the services that were actually provided at these increased costs (Lewis, 1973). Flook and Sanazaro (1973) stated that progress in developing standard methods of evaluating health services that are accurate and feasible has been slow for several reasons. First, there is great variability in the organizations and the methods of delivering these services. Second, there is lack of agreement on the concepts that guide developing methods, such as "efficiency," "effectiveness," and "quality," and finally, the techniques for various types of evaluation are cumbersome, expensive, and very time-consuming. Examples of this latter point can be found in the elaborate hospital audit programs. Smaller establishments cannot financially undertake such a project.

The conceptual framework for evaluation

The conceptual framework for both medical and nursing quality assessment is attributed to Donabedian's classic article (1966). The three approaches are: (1) structure; (2) process; and (3) outcome. Hegyvany and Haussmann

(1976) have defined these approaches for nursing use as:

(1) the organization of the patient care system; (2) the actual performance of care; and (3) patient welfare.

Operationalizing process and outcome

Although process and outcome have been operationalized many ways, there is still no agreed upon mechanism that satisfies most researchers (Abdellah, 1970). As early as 1966 Donabedian recognized that most research studies on quality were too narrowly defined. Most of them concerned themselves with technical management of illness, without much thought to prevention, rehabilitation, coordination, continuity of care, or the patient-provider relationship. Both Lewis (1973) and Donabedian (1970) do agree that the results of the various evaluations should be interpreted in terms of social values for the consumer. Donabedian (1970) has stated that outcomes are more frequently expressed in terms of client feelings, knowledge and behavior.

Nursing has recognized this importance of the client's feelings, knowledge and behavior, as evidenced in Abdellah's review of nursing research literature (1970). A good example is the classic study of the psychosocial needs of the chronically ill by Schwartz, Henley and Zeitz (1964). This descriptive study provided discoveries and problems

for a great many research projects. In fact, Schwartz's basic assumptions of 1964 are finally accepted by both nursing and medicine today in that they provide the backbone of primary care. These assumptions are: (1) the client wants to see the same person in the same place each visit; (2) the client prefers one physician per visit; (3) total care should be provided including social and emotional needs; (4) clients are seen as a family to allow for preventive care at the different life cycles; and (5) hospital services should be extended into the home.

Doris Bloch (1975) agrees with Abdellah (1970) that we need more criterion measures in nursing evaluation research. Her main point is that process and outcome should be evaluated simultaneously. Doing so allows examination of how the actions of providers relate to changes in the recipient of care. She also states that nursing is not ready for this type of quality control program because we have not validated enough criteria for process and outcome measure. Bloch's opinion is that no other professional group is ready either.

Kessner's "tracer" methodology (1973) refutes Bloch's argument in that both process and outcome are measured. His method differs from others in several ways: (1) the manner the tracers are selected; (2) the specification

of criteria; and (3) in application. Kessner's tracer diseases are those which are commonly encountered in ambulatory settings (e.g. iron deficiency anemia, otitis media, and hypertension). In addition, the definitive treatments are known and have demonstrated that they affect the outcome. Analysis of the diagnostic, therapeutic, and follow-up processes used by a provider is an indication of the quality of routine care provided within that health care system.

Quality assessment in ambulatory settings

Quality assessment has been mainly directed at the evaluation of inpatient services and personnel. Changes within our health care delivery system, such as national health insurance and health maintenance organizations, have forced us to look at the methods of evaluation that are pertinent and feasible in ambulatory care. Primary care is another term used interchangeably to mean ambulatory care, yet it adds another dimension--that of a wholistic approach to patients and their families. Prevention, management of disease, and rehabilitation are provided instead of just "crisis intervention."

Donabedian (1966) mentions several problems in assessing ambulatory care. They are: the minimal amount of recorded information, the fact that the managing physician knows little about the patient's medical and social history and

the differing definition of an "episode of care." Whereas in the hospital "episode of care" is defined as one admission, in primary care an "episode of care" may cover one or a multitude of office visits. Howell, Osterweis, and Huntley (1976) divide primary care into two dimensions, that of "caring" and "curing." For them the "caring" dimension is important in evaluation of primary care. First, because most problems are either self-limited or psycho-social medical care should be evaluated in terms of how the client perceives the care. Second, we are concerned about how our client responds to the changing methods of delivering group care. Third, because patients will be treated by various allied health personnel in health maintenance organizations, we need to know whether they are satisfied with this new delivery system. The recent development of the expanded role of the nurse and the emergence of the physician assistant have served to compound the problem in that they too have become major providers of care in primary care settings.

Balit, Lewis, Hochheiser & Bush (1975) have some important ideas about quality assessment with special reference to the nurse practitioner. They state that there are two purposes of quality assessment. One is protection of the consumer and the other is continued development of the health professional. They feel that nurses and

physicians in these settings can no longer be evaluated separately for functional and financial reasons.

Williams (1975) goes further yet and states that what we now need is to evaluate the adequacy of decision-making in medical assessment and management. She also reinforces the concept of assessing the interaction between the patient and provider, pointing out that nurses are not assessed appropriately with the present strategies used. She states that many nurses are disappointed in being assessed as "equal" in terms of outcomes because most of what is unique about nursing has not been measured. The nurse practitioner brings an added ingredient to the primary care scene. She is able to spend more time dealing with how disease affects the patient and his family, in health education, and in managing the disease.

Problem-oriented charting and quality assessment

Atwood and Yarnall (1974) agree with Balit, et al. that nurses and physicians should be evaluated using the same method, which is problem-oriented charting. They state that the increased cost and complexity of health care delivery mandates a new model for cooperation among the various providers. They coined the phrase, "7Cs" of problem-oriented charting. They are care, continuity, communication, cost, control, certification, and confiden-

tiality. The problem-oriented records enhance trust between team members and point out conflicts in care more easily.

In addition, Morehead (1976) identifies multiple providers of care as a deterrant to obtaining a complete picture of the medical care review in ambulatory settings. Use of problem-oriented charting will enhance quality review.

Outcome measures of quality of care

Although much emphasis has been placed on the process of care in the past, more clinically significant is the outcome dimension. Hegyvany (1976) defines patient outcome as (1) physical condition; (2) psychological status; and (3) health knowledge. Freeborn (1973) further defines outcome in terms of patient satisfaction. He says that satisfaction can be measured by the following behaviors: (1) the extent to which medical care is sought outside the system; (2) the proportion of subscribers who leave the program and choose other health plans; (3) the number and types of complaints received by the system; (4) broken appointments and cancellation rates; (5) rates of compliance with prescribed regimens; and (6) the proportion of patients who change physicians, assuming there is a choice within the system. Aday and Andersen (1975) agree with Hegyvany's definition of patient satisfaction and feel that it is best evaluated in the context of a specific, recent, and

identifiable episode of medical care.

According to Palmer (cited in Greene, 1976) patient satisfaction is not a unitary phenomenon. Although dimensions of patient satisfaction can be interpreted as a part of structure if the emphasis is on the care-providers, it may still be considered an outcome measure if it reflects judgment on the patient's part as to whether he received the best possible benefit from any medical encounter.

Several researchers have correlated compliance with medical regimen and patient satisfaction with the patient-provider relationship (Marston, 1970; Komaroff, 1976; Hulka, Kupper Cassel & Efird, 1975; and Hulka, Cassel, Kupper & Burdette, 1976). The patient-provider relationship was only one, but a generally agreed upon component in compliance with medical regimens.

In a pediatric study by Fink, Greycloud, Cohen, Malloy and Martin (1969) compliance improved, as measured by numbers of items with which families complied, when special attention was given to family health management. In the Fink, et al. study compliance was improved when a physician and/or nurse emphasized family involvement in their plan of care.

The professional nurse in ambulatory care

The patient-provider (nurse) relationship has always

been emphasized in nursing. Nursing education on the baccalaureate level stresses the psychosocial impact of disease upon the patient and the family in both institutional and community settings. Nursing has long been an integral part of ambulatory care. Public Health nurses have monitored and evaluated patients using physicians as preceptors for decades. Studies by Lewis & Resnick (1967); Lewis, Resnick, Schmidt & Waxman (1969) and Wang (1970) indicated that nurses with Public Health orientations who served as the primary care provider to selected groups of patients were acceptable to these patients. In fact, patients in the experimental group (Lewis & Resnick, 1967) shifted their preference from the physician to the nurse as a provider of many services. Reasons given for this shift were that the nurse: (1) explained the results of tests; (2) explained what was wrong; (3) explained results of x-ray examination; and (6) explained how and why to take medicines.

The expanded role of the professional nurse

In an attempt to perfect the skills of registered nurses in delivery of ambulatory care to pediatric patients, Silver, Ford & Stearly (1967) developed a pediatric nurse practitioner program and the acknowledged expanded role of the nurse was born. In private practice Charney & Kitzman (1971) found that care by a pediatric nurse

practitioner and physician team was of equal quality to care by the pediatrician alone, and that this team care was acceptable to the parents.

With the apparent success of pediatric nurse practitioners the concept was expanded to primary care nurse practitioners as described in Edwards, Ortman, Curtis & Lindsay (1972). Several other experimental studies demonstrated that nurse practitioners delivered acceptable and safe care (Bytran, Knight, Saper, Collis, Morgan & Cello, 1974; Spector, McGrath, Alpert, Cohen & Aikins, 1975; and Steinwachs, Shapiro, Yaffe, Levine & Seidel, 1976).

By far the largest and most carefully designed study on nurse practitioners is the Burlington Trial carried out by Sackett (1974) and Spitzer (1974). They used a multi-dimensional evaluation scheme similar to that used by Hulka and Cassel, which included Kessner's tracer methodology, satisfaction and cost-analysis. The conventional or physician group (2796 patients) were cared for by two physicians equally. The experimental (two nurse practitioners) group saw 1529 clients over one year, July, 1971 to July, 1972. Patient outcome was measured in terms of satisfaction with the care given, physical status, emotional and social functioning. Before and after testing were done to evaluate changes in patient status. The experimental (nurse practitioner) group produced results comparable to physicians for

delivering primary care. The volume of patients increased by 22 percent. From the standpoint of cost-effectiveness, nurse practitioners would qualify if third party payee laws could be changed.

The role of the nurse practitioner in primary care remains controversial from both nursing's and medicine's viewpoint in spite of favorable reports of controlled trials. Despite this controversy, however, many leaders of both professional fields see the groundwork laid for a "colleagueship" relationship between nurses and physicians (Smoyak, 1976). Smoyak defines "colleagueship" as a relationship in which there is (1) a common agreement on goal; (2) equity in status and personal interactions; (3) a shared base of scientific knowledge with complimentary diversity of skills, expertise and practices; and (4) trust and respect for each other's competence.

Both medical and nursing problems arise in attempts to provide care for patients. It is hard to separate these providers when we evaluate the care given, especially in settings where both nurse and physician have overlapping functions. Atwood and Yarnall (1976) emphasize a focus on patient care, not medical or nursing. The problem-oriented record has itself increased written communication between all members of the health care team. In addition, Doris Schwartz (cited in the American Academy of Nursing publication,

1975) spoke to this subject in her remarks about primary health care for the nation. Her main goal is prevention, early detection, treatment of acute problems, rehabilitation and alleviation of suffering when death is inevitable. She sees the collaborative effort of physicians and family nurse practitioners as a means to achieve the latter goals.

A very needed study on directions of professional nursing and nursing education resulted in the Lysaught Report. One of the areas identified in which more research was needed was to determine if indeed these improved collaborative roles between nursing and medicine do produce results such as described in Wang (1970) and Lewis and Resnick (1967 & 1969). There has been a great deal of research done on quality of care. The varied approaches were different criteria for process evaluation and different definitions of outcome such as physical, mental, emotional and social functioning in addition to patient satisfaction.

There is still no consensus on whether process and/or outcome should be measured in quality of care studies. Bloch feels that process and outcome should be evaluated simultaneously. Researchers agree that criteria for methods of evaluation should be studied further. As changes take place in the manner of delivering health care and in the providers, patient satisfaction becomes a more important consideration, especially in compliance with medical regimens.

The purpose of the present study was to assess the differences in quality of care given to patients in an ambulatory setting by a family nurse practitioner and a physician. Concurrently, the process each provider used was evaluated.

Hypotheses

1. The family nurse practitioner will use a different process in providing follow-up care for the ambulatory hypertensive patient than the general medical practitioner.

2. Patients will be more satisfied with the family nurse practitioner and the care she delivers than they will with the physician and the care he delivers in a primary care setting.

Operational Definitions

Quality of Care - assessed by two indirect methods:

A. Process - criteria consisting of provider functions in the areas of: (1) prevention; (2) diagnosis; and (3) management.

B. Outcome assessed in terms of patient satisfaction with the care the client receives.

Primary care setting - an organization which provides services of prevention, diagnosis, and management for ambulatory or out-patient clients.

Family Nurse Practitioner - Registered Nurse with additional skills in patient assessment and clinical experience in the

primary care setting.

Physician - a non-specialized general practitioner.

Hypertensive Patient - any patient whose blood pressure readings before treatment were greater than the following for his age:

18-44 140/90

45-64 150/95

65+ 160/95

(Kessner, 1973a)

"Tracer" conditions - common ailments routinely administered by general health practitioners:

1. otitis media and associated hearing loss.
2. visual disorders.
3. iron-deficiency anemia.
4. urinary tract infections.
5. essential hypertension.
6. cancer of the cervix. (Kessner, 1973b)

CHAPTER II
METHODOLOGY

Introduction

Assessment of the quality of care delivered by a family nurse practitioner as compared to the quality delivered by a general practitioner was the purpose of this study. Quality was assessed by the process each provider used and the outcome each obtained in terms of patient satisfaction with that care. The process used by chart audit and the outcome measured by subjective questionnaire were the dependent variables. The population studied consisted of fifty-four stable hypertensive patients, both sexes, and ranging in age from 30 to 75 years. The experimental family nurse practitioner group (26 patients) were compared to 28 patients followed by the physician (control group). After two visits in this primary care setting, the patients were given a 25-item questionnaire to elicit patient satisfaction with the provider and the care delivered.

In addition, the charts of these 54 patients were audited according to standard minimal care for follow-up of hypertensive patients.

Setting

The U. S. Public Health Service Clinic, located in Portland, Oregon, was the setting for this study. This clinic provides care to a population of both retired and active military persons and their dependents. The clinic operates without a back-up in-patient facility closer than 80 miles (Madigan). Further yet is the main facility in Seattle. Only emergency services can be provided by area hospitals. Laboratory, x-ray, pharmacy and nursing are the services provided in addition to 24-hour physician coverage by three full-time practitioners. Approval was granted by the director of the Public Health Service facility to conduct this research project.

The views expressed are purely the author's and in no way represent policies of the U. S. Public Health Service.

Subjects

A convenience sample of 54 hypertensive patients, both male and female, ages 30 to 75 years served as subjects in this research project. The subjects were active or retired military personnel, American seamen and/or their dependents. Subjects were not matched because internal control was maintained by random assignment to treatment groups. The patients were all seen on a regular basis for control of their hypertension by one of the clinic physicians. Both the patient and the physician agreed to the patient's participation in

the study. (See consent form, Appendix A, p. 45).

Design

A posttest-only control group design (Campbell and Stanley, 1966) was used in the study. A pre-test posttest design was not possible because the introduction of the family nurse practitioner in primary care is an entirely new concept. Fifty-four patients were randomly assigned to two treatment groups using a statistical table of random numbers (Neter and Wasserman, 1974). Randomization assured lack of initial biases between groups. The experimental group was followed for two visits within a three week interval by a family nurse practitioner. The control group was followed in the same manner by the physician alone.

Data Collection Instruments

The process tool developed was gleaned from the Kessner tracer method (1973a), and consisted of principles of problem-oriented charting, minimal standards of hypertension management based on the report of the Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure (1977) and nursing theory concerning patient and family education. These are the seven areas that were evaluated:

1. Evidence of medical history, either with a problem list, or in progress notes.

2. Evidence of physical exam within the last year (or plans to initiate one).
3. Laboratory tests to followup hypertensive patients, (e.g. urinalysis, hematocrit or hemoglobin, BUN or serum creatinine) within the last year or plans to initiate them.
4. Notation of treatment prescribed for hypertension.
5. Notation for follow-up.
6. Evidence of problem-oriented charting (e.g. problem list, flow sheets, "soaping.")
7. Notation of plans for patient and/or family education (See Appendix B, p. 53).

The outcome instrument developed by Risser (1975) provides evaluation of patient satisfaction in this study. The original instrument consists of 28 Likert-scaled items subdivided into three subscales:

1. Technical-professional area (0.637).
2. Interpersonal-educational area (0.825).
3. Interpersonal-trusting relationship (0.819).

The numbers in parentheses indicate the computed values of reliability testing for the three subscales. Internal consistency for this instrument was estimated by Cronbach's Alpha and Scott's Homogeneity Ratio. The calculated Alpha reliability for the total scale (25 items) was 0.912. The homogeneity ratio for the total scale was 0.302. The

homogeneity ratio is similar to a weighted average of the inter-item correlations (see Appendix C and D pp. 54 and 59 for the complete instrument.)

Four items were considered non-applicable to this specific study and were therefore deleted. One question, the content of which was taken from the Burlington randomized study by Spitzer (1975), was added. Two separate satisfaction questionnaires were developed from the Risser items.

"Nurse practitioner" was inserted in one and "physician" was used in the other instead of the term "nurse." This same approach involving word substitution in identical questionnaires was used in the Burlington study by Spitzer, et al. (1974).

Variables

Independent

Two health provider patterns were investigated. One was the traditional pattern of the physician being solely responsible for all aspects of care. Patients in this group were designated as the control group. The other pattern was the family nurse practitioner who initiated care, assessed, coordinated, and evaluated the treatment plan using the physician in a consultant role. Patients in this group are referred to as the experimental group.

Dependent

Dependent variables are identified as (1) the process

each health provider uses in his/her patient interaction; and (2) the outcome achieved as a result of the patient-provider interaction measured by patient satisfaction with the provider and the care that provider delivers.

Procedure

The research was implemented in three phases. During the initial phase, stable hypertensive patients at the Public Health Service outpatient clinic were screened first by their primary care physician as possible subjects. Next, they were asked to volunteer as subjects either by phone or in person. The research plan was explained to them and consent forms were signed.

The first phase included pre-testing of the process tool. Six charts were audited randomly and found to score similarly between physician and nurse practitioner except for area seven which pertained to patient and/or family teaching.

Next, patients were randomly assigned to two groups. Attrition occurred uniformly in both groups before Phase II began, resulting in 28 subjects in the control or physician group and 26 in the experimental or nurse practitioner group.

The initial phase concluded by the selection of four personnel and their orientation to the tasks of chart auditing which occurred during Phase II.

During Phase II the family nurse practitioner and

physician delivered primary care to 54 stable hypertensive patients. Each group was seen twice within a three-week interval. At the end of the second visit each group was given a 25-item questionnaire to elicit patient satisfaction with the care they received. In addition, their charts were audited according to minimal standards for patients being treated for hypertension. Inter rater reliability was not directly tested because all four raters were given uniform instructions and a chart was audited with each rater. Reliability of the raters was tested indirectly through examination of the percentages of yeses and nos for each rater.

Since charts were randomly assigned, except for the stipulation of equal family nurse practitioner and physician charts to each rater, one would expect similar percentages of yeses and nos for each of the four raters. Chi square analysis of percent of yes and no answers for each rater demonstrated no significant difference (see Appendix F).

Phase III consisted of writing up the report and the development of extraexperimental considerations (see Appendix E for the time frame of the three phases of the research plan.)

CHAPTER III

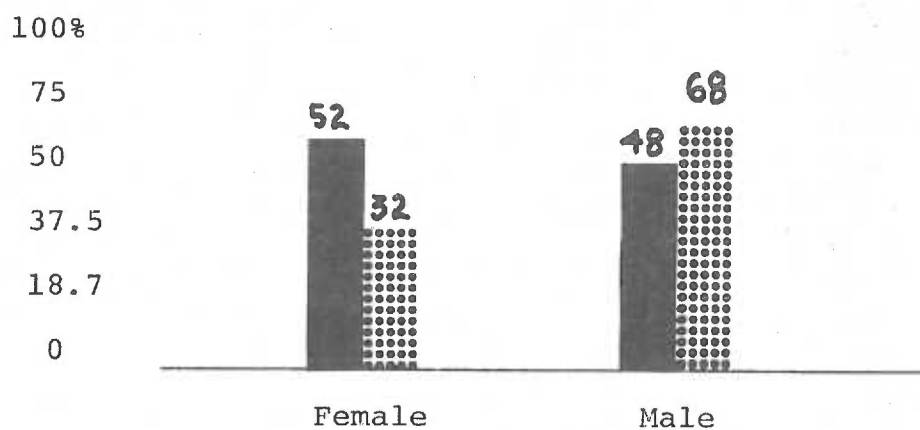
RESULTS

Demographic Characteristics of Subjects

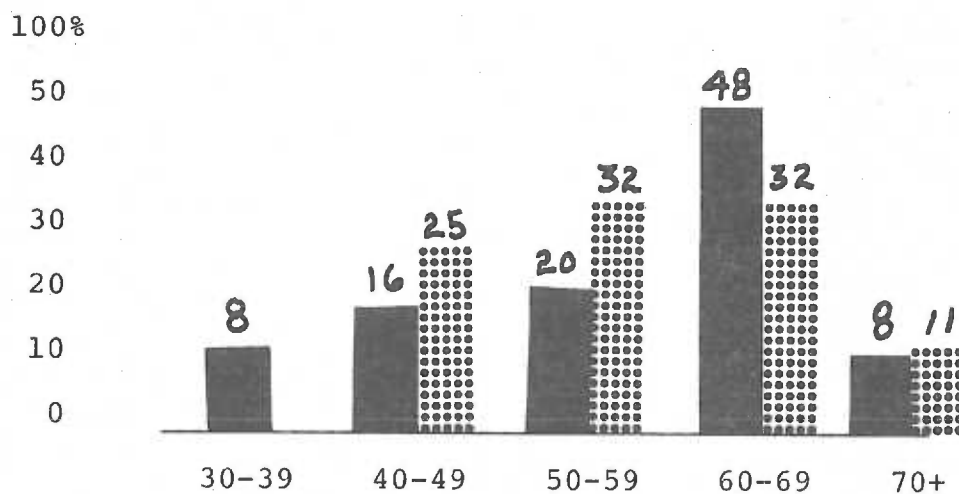
The majority of subjects responded to the biographical data at the end of the patient satisfaction questionnaire. Some subjects did not see the last page of the questionnaire where the demographic questions were listed. As can be seen in Figure 1, the experimental group had essentially equal proportion of males and females, 48% and 52% respectively, while the control group was 68% male and 32% female. There was a significant difference in the age distribution of the subjects ($x^2 = 16.42$, $df = 4$ at .001 level of probability). The experimental group was, for the most part, older--48% ranging in age from 60 to 69 years while the control group was evenly split between 40 and 69 years (see Figure 1.) The control group had more basic education with 68% having a high school diploma or training beyond, while the experimental group was evenly split with 41% without a high school education, and the same percentage with a high school education plus additional training ($x^2 = 16.14$, $df = 2$, significant at the .001 level). The length of time the subjects had been receiving care at the Public Health Service outpatient clinic was also significant at the 0.025 level ($x^2 = 9.10$, $df = 2$). The experimental group had a larger percentage of

Figure 1
Demographic Characteristics

1. Sex of Subjects



2. Age of Subjects



Family nurse practitioner (experimental) ■

Physician (control) ■■■■

Figure 2

Demographic Characteristics

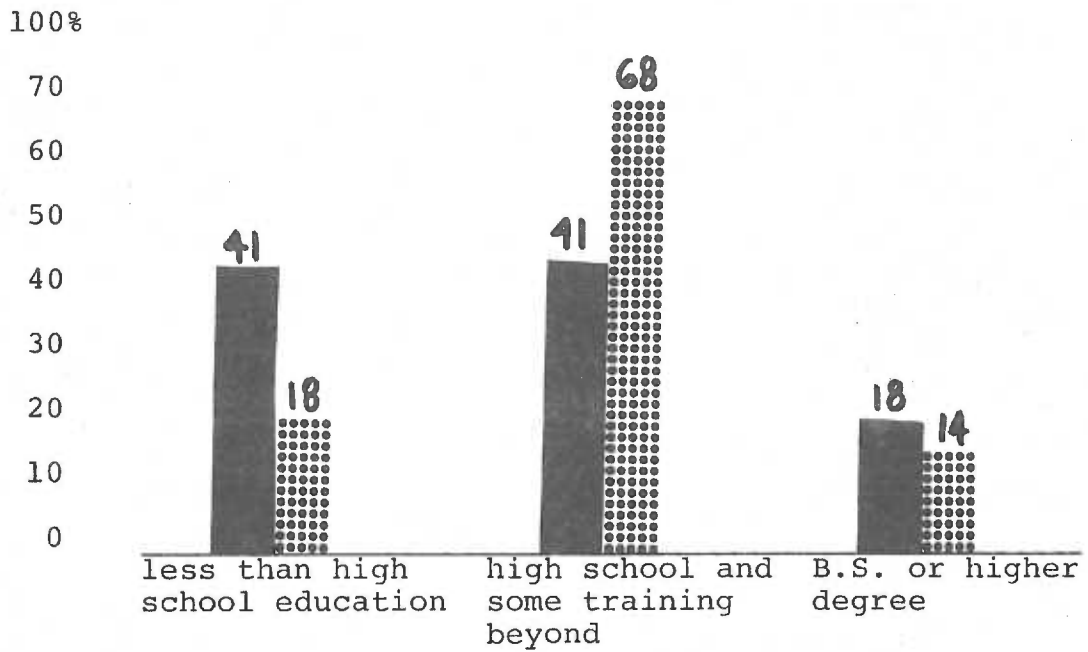
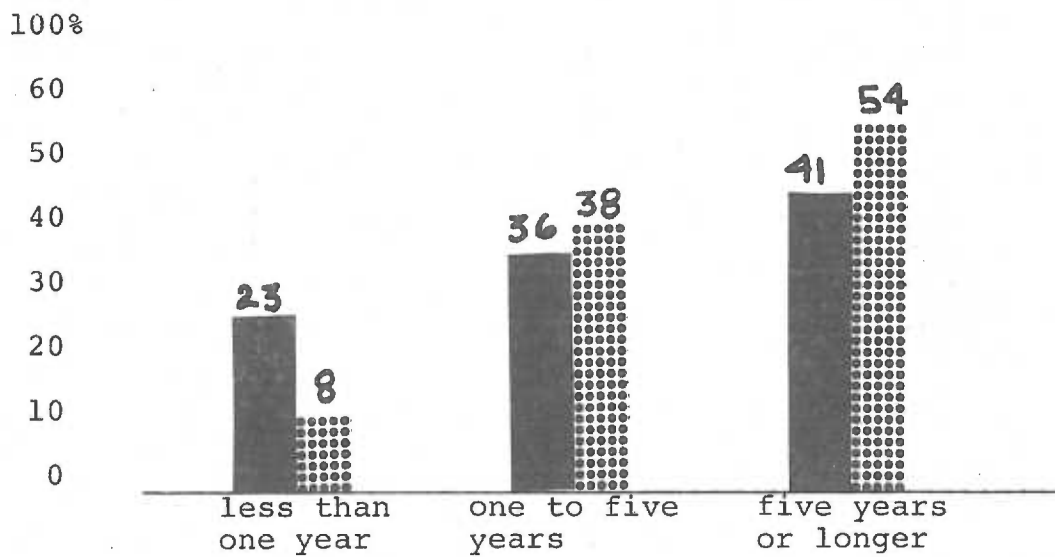
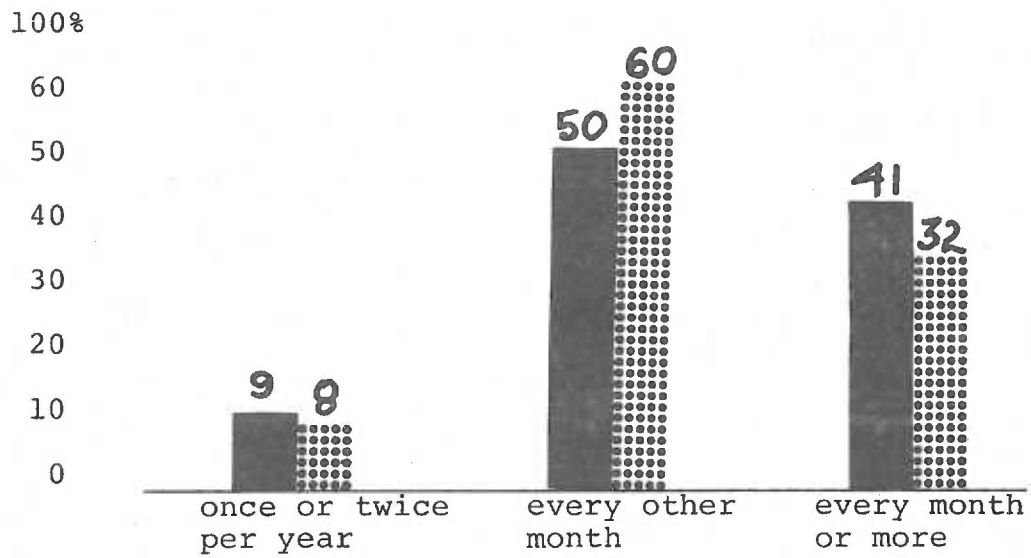
3. Education of Subjects4. Length of Time Seen at Public Health Service Clinic

Figure 3

Demographic Characteristics

5. Frequency Visited Public Health Service Clinic

patients seen less than one year. The frequency of the subjects' usual visits was every other month or more often. There was no significant difference between groups on this attribute. An additional question was added later to the questionnaire per request of the Human Subjects Committee to which 30% of the respondents replied. The question stated, "Do you think you have received help through participation in this study?" Sixteen study patients responded to this question. Five patients were in the experimental group and all stated "yes they were helped." Eleven patients were in the control group. Eight patients felt that they were helped by participation in the study and three stated that they were not helped.

The research findings were divided into two main areas: (1) the results of the chart audit or intervention process used by the respective health providers; and (2) the results of the patient satisfaction questionnaire which indirectly measured the outcome.

The seven areas analyzed in the chart audit were:

1. Evidence of medical history either with a problem list, or in progress notes.
2. Evidence of physical exam within the last year (or plans to initiate one).
3. Laboratory tests to follow up hypertensive patients, (eg. urinalysis, hct or hgb., BUN or serum creatinine) within the last year or plans to initiate them.

4. Notation of treatment prescribed for hypertension.
5. Notation for follow-up.
6. Evidence of problem-oriented charting, (eg. problem list, flow sheets, "soaping.")
7. Notation of plans for patient and/or family education.

Of the seven areas audited, scores for the family nurse practitioner and the physician in Areas 1, 4, 5 and 6 were the same. Areas 2, 3, and 7 were numerically different (see Tables 1, 2, and 3). Analysis using the chi-square non-parametric statistic was significant at the 0.05 level of probability for Area 7. Area 7 included "notation of plans for patient and/or family education." Most of the chart audit was developed according to accepted medical standards. This seventh area is based on nursing theory that patients have the right and need to understand their illness in order to better care for themselves. In summary, the process as determined by chart audit that a family nurse practitioner and a physician use to manage hypertensive patients is significantly different only in respect to charting about patient and/or family education plans.

The results of the patient satisfaction questionnaire were statistically analyzed using student's t-tests. The content of the questions could be divided into three subscales. First, four items pertained to the technical professional behavior of the health provider. For example, medical knowledge, physical care for the patient, and expertise

Table I

Evidence of physical examination within
last year or plans to initiate one

	Yes	No
Family nurse practitioner	21	5
Physician	16	12

$x^2 = 3.47$ Not significant at 0.05 level

Table 2

Laboratory tests for follow-up urinalysis, hematocrit
or hemoglobin, BUN or serum creatinine

	Yes	No
Family nurse practitioner	20	6
Physician	18	10

$x^2 = 1.02$ Not significant at 0.05 level

Table 3

Notation of plans for patient and/or family education

	Yes	No
Family nurse practitioner	6	20
Physician	1	27

$x^2 = 4.51$ which is significant at 0.05 level

in implementing medical care.

Second, ten items were considered to be interpersonal-educational or those which dealt with social aspects of patient care as well as the information exchange between patient and provider, such as answering questions, explaining, and demonstrating.

The third interpersonal-trusting dimension pertained to being sensitive to people and their feelings and listening to patient problems.

Respondents indicated agreement or disagreement with the statements on a 5-point Likert-type scale ranging from "strongly agree" to "strongly disagree." The questions were evenly divided into positive and negative items. Although a Likert Scale is ordinal data, a mean of the total responses within each of the three subscales was obtained to test for a significant difference between means. None of the three t-tests run demonstrated any significant difference in patient satisfaction with the two health care providers (see Figure 4).

Comparison of the means between the subscales derived by Risser in her methodological study and in this replication could not be accomplished because the questionnaires were similar, but not identical. Four items were deleted from the replication and one added.

In summary, the findings established that there was a significant difference in one aspect of the process a family nurse practitioner uses to follow hypertensive patients. This

aspect is Area 7, this is, "notation of plans for patient and/or family education."

In addition, the outcome obtained, measured indirectly by the use of a subjective questionnaire, demonstrated no significant difference between providers in the three subscales analyzed.

Figure 4

	<u>Mean Of The Responses</u>	
	<u>Family nurse practitioner</u>	<u>Physician</u>
Subscale I		
Technical-Professional	3.40	3.16
Subscale II		
Interpersonal- Educational	3.14	3.19
Subscale III		
Interpersonal-Trusting	2.76	2.89

t-testing for the difference between the mean of the responses is not significant at the 0.05 level

CHAPTER IV

SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

This chapter reviews the problem addressed by this research and the conclusions drawn from statistical analysis of the findings. Next, there will be a general discussion of the study, including what was learned, how it pertains to the current body of knowledge and how this study differs from other research concerning nurse practitioners in ambulatory settings. The final sections of the chapter will delineate limitations of the research, its contributions and in what directions further research might be directed.

Summary and Conclusions

Randomization of the convenience sample of 54 stable hypertensive patients into two treatment groups provided for internal control in this research. The design used was the post-test only control group design.

Two instruments were used to measure the effect of the family nurse practitioner as compared to the general medical practitioner in the management of a chronic disease such as hypertension. The process tool which consisted of a chart audit of seven areas was developed from the Kessner tracer concept of quality assessment (1973). Hypertension is one of the tracer diseases involved in his strategy.

The second tool was a 25-item Likert-scale questionnaire to elicit patient satisfaction with nurses and nursing care developed by N. Risser (1973). Some minor changes were made to provide a more appropriate tool in an ambulatory setting.

Data were collected after the period of intervention was completed. Intervention consisted of two clinic visits with a three-week interval between visits for both the experimental (26 subjects) and the control (28 subjects) groups.

By inspection the researcher concluded that the raw data were different in Areas 2 and 3 of the chart audit, but only Area 7 proved to be significant at the 0.05 level ($\chi^2 = 4.51, df = 1$) (See Tables 1, 2, and 3). Area 7 is "notation for patient and/or family education." Although physicians in primary care admit to the importance of educating the patient and his family about the effects of drugs, diet, exercise and emotions on control of hypertension, they have not included it in the protocol of their medical records as they have other aspects of hypertensive management (see Appendix B).

The second tool, measuring outcome in terms of patient satisfaction with their care demonstrated no difference. Eighty-one percent of the subjects in the experimental group had no previous encounter with the family nurse practitioner before the study was conducted. The control group, on the other hand, had all been previous patients of the general practitioner for varying amounts of time. It would seem

that no difference in satisfaction between the two groups does imply that the family nurse practitioner was able to develop a patient-provider relationship which conveyed technical competence, demonstrated educational skills and established a sense of trust within a brief period of time. T-test analysis of the questionnaire was carried out by grouping the questions into three subscales. In personal communication with the author (Risser, 1977) discussion revealed that the subscales of technical-professional, interpersonal-educational and interpersonal-trusting were not rigidly constructed (see Figure 4). During the course of her research developing the questionnaire items from four subscales had been merged into the resulting three used in this study (Risser, 1973). Comparison of the mean of the responses in these subscales to Risser's was not possible because of the modifications made in four items in this study. It is possible that analysis of individual items might have demonstrated a difference, although this type of analysis was not carried out.

In summary, the attributes of the subjects in the two groups differed according to age, education, length of time attending the clinic and to the degree that they felt helped by participation in the study. The significance of education as an attribute was analyzed by comparison of the mean of the responses to the questionnaire of those with high school or greater education and those with less than high school

education. No difference was found in the mean of their responses. It appears that the family nurse practitioner uses a slightly different process as evidenced in her charting of plans for patient and/or family education in the management of hypertensive patients. The experimental group showed a difference in the charting of patient and/or family education. There was no difference demonstrated between the two groups in terms of patient satisfaction with their care.

Discussion

This study attempted a joint evaluation of health providers in an ambulatory care setting in order to demonstrate any difference in the process provided or the outcome obtained by the utilization of nurses in an expanded role. It is not feasible to audit nurse practitioners and physicians separately because their functions are similar and often performed after collaboration.

The chart audit used in measuring the process is a well-accepted way of evaluating care in institutions, but has just recently become feasible in ambulatory care with more standardized methods of charting; that is, with the problem-oriented medical record according to Greene (1976). In addition, the implementation of Professional Standards Review Organization has encouraged more physicians in private practice to become involved in quality assessment (Burdette, Baineau, Mayo, Hulka & Cassel, 1974). The development of Health Maintenance Organizations and Neighborhood Health

Centers has necessitated legislative interest in how effective and efficient these methods of health delivery really are (Balit, 1975). Finally the appearance of new health practitioners (Steinwachs, 1976) has aroused public interest and concern about whether "second-rate" care is being given.

Only recently has much attention been given to the patient's perceptions of the care he receives. In the past it was the provider's perceptions of the care delivered that were measured (Greene, 1976). A closely related subject is patient compliance. Studies have clearly demonstrated that compliance with the medical regimen is improved when there exists a positive patient-provider relationship (Fink, 1969; Hulka, 1975a, 1975b, 1976). Nursing has historically focused on interpersonal relationships both in the institutions and community setting. The majority of illness in primary settings needs the caring approach of the health provider (Howell, 1976). This has been referred to also as the "art of medicine."

Most problems in ambulatory care are self-limiting (minor trauma, acute infections) or require health teaching (obesity, diabetes, hypertension) in addition to the multiple factors of prevention (well-baby examinations, immunizations, pap smears, breast exams, and routine physicals). The expanded role of nursing has provided a method of providing this caring dimension with no loss in the quality of medical management.

The nurse practitioner and the physician were evaluated using the identical tool. Spitzer (1975) has done this as part of his Burlington study on outcome measures. By evaluating both providers simultaneously, it also makes assessment more feasible financially in the private sector.

Findings of the present study were in agreement with many others (Fink, 1969; Charney, 1971; Silver, 1971, 1973; Lewis, 1967, 1969; Wang, 1970; Spitzer, 1974; Sackett, 1974; Sibley, 1975; Bystran, 1974; and Linn, 1976) i.e. that there was no difference in the quality of care when physician and family nurse practitioner were compared in a chart audit and as determined by patient satisfaction.

Previous studies have used additional outcome measures, such as mortality, morbidity, disability, occurrence of complications, the degree of compliance with regimens in addition to patient satisfaction. It is possible that finding the perfect system is not as important as the fact that quality assessment is taking place. The individual who knows his work is being evaluated produces the best quality whether the individual is a physician or nurse (Balit, 1975).

The original feature of this study is that it attempted to identify what could be the nursing contribution to primary care by analyzing the process used by the two health practitioners at the same time it eliminated chance differences

by randomizing the subjects into two treatment groups. This study also demonstrated that physician and nurse practitioner could be evaluated concurrently when they performed similar functions in outpatient settings as indicated by using the same patient satisfaction questionnaire and chart audit.

The use of nurse practitioner in primary care can have an additional impact on quality of care by increasing physician productivity. The physician can refer time-consuming health educational problems to the nurse practitioner, allowing more time for complex medical problems (Sadder, 1974). Also the nurse practitioner improves the quality of care given by the physician with whom she works (Balit, 1975) because he is constantly placed in a position of explaining his reasons for a given course of action. This effect may be more dramatic in solo-private practices where interaction with peers is limited. The general practitioner in the present study commented that working with a nurse practitioner forced him to review his medical literature many times to be able to answer questions posed. This learning process is two-way. The nurse practitioner learned which journals have current and reputable information in addition to using the standard medical and nursing texts.

Limitations

For cost and time reasons this research project was

limited in scope. Using only one process measure (chart audit) and one outcome measure (patient satisfaction) does not give a total picture of all possible processes and outcomes that could take place during patient-provider encounters.

The sample size was limited also (total 54 patients) which does not allow for generalizability to other patient populations.

Personality attributes of the two providers could have greatly affected process and outcome. Ideally, evaluating multiple physicians and nurse practitioners would have reduced the effect of this variable.

Investigator bias is certainly a possibility, but was controlled to a minimum by having multiple (4) chart auditors and having clerical personnel distribute and collect the questionnaires.

Recommendations

A valuable study could be carried out examining the follow-up practices of family nurse practitioners. Since nursing has long attempted to provide continuity of care within the institutions, it now is challenged to provide that needed function in the ambulatory setting.

Another possible direction for research is to evaluate the effect of health knowledge possessed by patients before and after they are cared for by a family nurse practitioner.

A third idea is the prevailing attitude that nurse practitioners take considerably more time to evaluate problems and teach patients about how to live with their diseases. A study aimed at measuring time spent with patients could demonstrate whether this assumption is valid. Time spent with physicians, that is consultation time, is another research possibility. This time may vary depending on the experience of the nurse practitioner and the length of time the two practitioners have worked together.

REFERENCES

- Abdellah, F. Overview of nursing research 1955-1968, part 1. Nursing Research, January-February 1970, 19, (1), 6-17.
- Aday, L. & Andersen, R. Development of indices of access to medical care. Ann Arbor: Health Administration Press, 1975.
- American Academy of Nursing. Models for health care delivery: now and for the future. Publication G-119 2M5/75, presented at annual meeting January 20-21, 1975.
- Atwood, J. & Yarnall, S. The problem-oriented record. The Nursing Clinics of North America, June, 1974, 9 (2), the W. B. Saunders Co., Philadelphia.
- Balit, H., Lewis, J., Hochheiser, L., & Bush, N. Assessing the quality of care. Nursing Outlook, March, 1975, 23 (3), 153-158.
- Bloch, D. Evaluation of nursing care in terms of process and outcome: issues in research and quality assurance. Nursing Research, 1975, 24 (4), 256-263.
- Burdette, J., Babineau, R., Mayo, F., Hulka, B., & Cassel, J. Primary medical care evaluation--the AAFP/UNC collaborative study. Journal of the American Medical Association, December 23-30, 1974, 230 (12), 1668-1673.
- Bystran, S., Knight, C., Soper, M. R., Collis, P. B., Morgan, T. W., & Cello, J. P. An evaluation of nurse practitioners

- in chronic care clinics. International Journal of Nursing Studies, September, 1974, ii (3), 185-193.
- Campbell, D. & Stanley, J. Experimental and quasi-experimental designs for research. Chicago: Rand McNally College Publishing Company, 1966.
- Charney, E. & Kitzman, H. The child-health nurse (pediatric nurse practitioner) in private practice. New England Journal of Medicine, December 9, 1971, 285 (24), 1353-1358.
- Donabedian, A. Evaluating the quality of medical care. Milbank Memorial Fund Quarterly, July, 1966, 44 (2), 166-203.
- Donabedian, A. Patient care evaluation. Hospitals, April, 1970, 44 (4), 131-136.
- Edwards, Curtis, Ortman and Lindsey. Two nurse-practitioners make good. American Journal of Nursing, March, 1972, 72 (3), 460-465.
- Fink, D., Greycloud, M., Cohen, M., Malloy, M., & Martin, F. Improving pediatric ambulatory care. American Journal of Nursing, February, 1969, 69 (2), 316-319.
- Flook, E. & Sanazaro, P. J. (ed.). Health services research and research and development in perspective. Ann Arbor: Health Administration Press, University of Michigan, 1973.
- Freeborn, D. K. & Greenlick, M. R. Evaluations of the performance of ambulatory care systems: research requirements and opportunities. Medical Care, March-April,

- 1973 supplement, 11 (2), 68-75.
- Greene, R. Assuring quality in medical care--the state of the art. Cambridge, Mass.: Bollinger Publishing Company, 1976.
- Hegyvary, S. & Haussmann, R. D. Quality assurance. Journal of Nursing Administration, November, 1976, 6 (9).
- Howell, J., Osterweis, M. & Huntley, R. Curing and caring--a proposed method for self-assessment in primary care organizations. Journal of Community Health, summer, 1976, 1 (4), 256-275.
- Hulka, B. S., Cassel, J. C., Kupper, L. L., & Babineau, R. Practice characteristics and quality medical care: the doctor-patient relationship. Medical Care, October, 1975, 13 (10), 808-820.
- Hulka, B., Cassel, J., Kupper, L., & Burdette, J. Communicating, compliance, and concordance between physicians and patients on prescribed medications. American Journal of Public Health, September, 1976, 66 (9), 847-853.
- Hulka, B. S., Cassel, J. C., Kupper, L. L., Efird, R. L., & Burdette, J. A. Medication use and misuse: physician-patient discrepancies. Journal of Chronic Diseases, 1975, 28 (11), 7-21.
- Kessner, D., Kalk, C. & Singer, J. Assessing health quality--the case for tracers. New England Journal of Medicine, January 25, 1973, 288 (4), 189-194.

- Kessner, D. M. A strategy for evaluating health services.
Washington, D. C.: National Academy of Science, 1973.
- Komaroff, A. The practitioner and the compliant patient.
American Journal of Public Health, September, 1976.
66 (99), 833-835.
- Lewis, C. & Resnik, B. Nurse clinics and progressive
ambulatory care. New England Journal of Medicine,
December 7, 1967, 277 (23), 1236-1241.
- Lewis, C. E., Resnik, B. A., Schmidt, G., & Waxman, D.
Activities, events and outcomes in ambulatory patient
care. New England Journal of Medicine, March 20, 1969,
280 (12), 645-649.
- Lewis, C. E. The state of the art of quality assessment--
1973. Medical Care, October, 1974, 12 (10).
- Linn, L. Patient acceptance of the family nurse practitioner.
Medical Care, April, 1976, 14 (4), 357-364.
- Lysaught, J. P. Action in nursing. New York: McGraw-Hill
Book Company, 1974.
- Marston, M. Compliance with medical regimens: a review
of the literature. Nursing Research, 1970, 19 (4),
312-323.
- Mayer, A. J. Graying of America. Newsweek, February 28,
1977, 139 (9), 66-77.
- Morehead, M. A. Ambulatory care review: a neglected priority.
Bulletin of the New York Academy of Medicine, 1976,
52 (1), 60-69.

- Moser, M., Guyther, J. R., Finnerty, F., Richardson, D. W., Langford, P., Wood, D. E., Krishan, I., Branche, G. C., & Smith, W. M. Report of the joint national committee on detection, evaluation and treatment of high blood pressure. Journal of the American Medical Association, January 17, 1977, 237 (3), 255-261.
- Neter & Wasserman. Applied linear statistical models. Illinois: Richard Irwin Inc., 1974.
- Risser, N. Development of an instrument to measure patient satisfaction with nurses and nursing care in primary care setting. Nursing Research, 1975, 24 (1), 45-52.
- Risser, N. Personal Communication, July, 1977.
- Sackett, D. L., Spitzer, W. O., Gent, M., & Roberts, R. S. The Burlington randomized trial of the nurse practitioner: health outcomes of patients. Annals of Internal Medicine, February, 1974, 8 (2), 137-142.
- Sadler, A. M. New health practitioner education: problems and issues. Journal of Medical Education, 50, 67-73.
- Schwartz, D., Henley, B. & Zeitz, L. The elderly ambulatory patient: nursing and psychosocial needs. New York: Macmillan, 1964.
- Sibley, J., Spitzer, W., Rudnick, K., Bell, J., Bethune, R., Sackett, D., & Wright, K. Quality-of-care appraisal in primary care: a quantitative method. Annals of Internal Medicine, July, 1975, 83 (1), 46-51.

- Silver, H., Ford, L., Day, L. The pediatric nurse-practitioner program. Pediatrics, May, 1967, 39 (5), 756-760.
- Smoyak, S. Is practice responding to research. American Journal of Nursing, July, 1976, 76 (7), 1146-1150.
- Spector, R., McGrath, P., Alpert, J., Cohen, P., & Aikins, H. Medical care by nurses in an internal medicine clinic. Journal of the American Medical Association, June 23, 1975, 232 (12), 1234-1237.
- Spitzer, W., Sackett, D., Sibley, J., Roberts, R., Gent, M., Kergin, D., Hackett, B. & Olynick, A. The Burlington randomized control trial of the nurse-practitioner. New England Journal of Medicine, January 31, 1974, 290 (5), 251-256.
- Steinwachs, D. M., Shapiro, S., Yaffe, R., Levine, D. M., & Seidel, H. The role of the new health practitioners in a pre-paid group practice. Medical Care, February, 1976, 14 (2), 95-120.
- Wang, M. K. A health maintenance service for chronically ill patients. American Journal of Public Health, April, 1970, 60 (4), 713-721.
- Williams, C. A. Nurse-practitioner research: some neglected issues. Nursing Outlook, March, 1975, 23 (3), 172-177.

APPENDIX A
CONSENT FORM

In order to evaluate the health care given to patients at the U. S. Public Health Service Clinic, I, _____ (first name) _____ (middle) _____ (last), agree to serve as a volunteer in the study titled "The Family Nurse Practitioner-- A Randomized Study" conducted by Kay E. Ortman R.N., (student). She will be supervised in this study by Marie Berger M.S. (faculty adviser). I will be examined by either the nurse-practitioner or the doctor on two clinic visits three weeks apart. At the end of the second visit I will fill out a 25-item questionnaire about how I feel about the care given. There are no risks involved. The information I give will be kept confidential. My name will not appear on the records and anonymity will be insured using code numbers.

Kay Ortman R.N. has offered to answer any questions that I may have about my part in this study. I understand that I am free to not participate or to withdraw from participation without this decision otherwise affecting my relationship with or medical treatment at the U. S. Public Health Service Clinic.

Dr. R. Howe, clinic physician, approves of your participation in this study.

I have read all of the above.

Date

Subject's Signature

Witness's Signature

APPENDIX B

Process Tool for Evaluation of the Followup of Hypertension

	Family Nurse Clinician	Physician	No	Yes
1. Evidence of medical history either with a problem list, or in progress notes.				
2. Evidence of physical exam within the last year (or plans to initiate one)				
3. Laboratory tests to followup hypertensive patients, (eg. urinalysis, hct or hgb., BUN or serum creatinine) within the last year or plans to initiate them.				
4. Notation of treatment prescribed for hypertension.				
5. Notation for followup.				
6. Evidence of problem-oriented charting, (eg. problem list, flow sheets, "soaping.")				
7. Notation of plans for patient and/or family education.				

Nurse Practitioner Questions

Appendix C

Patient Satisfaction Questionnaire--Outcome Tool

This questionnaire is designed to find out what kinds of things patients like or don't like about the health care they receive in the U. S. Public Health Service out-patient clinic. Your ideas, along with those of other patients, will be used to try to improve the care you are now receiving here.

This questionnaire contains a number of statements, each of which says something different about nurses. For each statement, decide how much you agree or disagree with the view expressed. Think about the care you are now receiving here as you respond to each statement. In a column next to the statements you will find five words to use to describe your opinion. Circle the number under the word which comes closest to your opinion. There are no right or wrong answers. People differ in their views. Your response is a matter of your personal opinion.

If, for any reason, you do not feel you are able to complete this questionnaire, please feel free to hand it back to me unfinished.

The information you give me will be completely confidential.

THANK YOU very much for your time and your help. Below is an example which may help you in completing the questionnaire.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
A. The nurse practitioner thinks I understand more than I really do	1	2	3	4	5
B. Nurse practitioners are put in the position of needing to know more than they possibly could.	1	2	3	4	5

The answer to question A indicates that you are quite certain that the nurse practitioner thinks you understand more than you really do. The answer to question B, "neutral," indicates you can't quite decide whether to agree or disagree with this statement.

Circle the number under the word which comes closest to your own opinion. PLEASE BE SURE TO MARK EVERY STATEMENT.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The nurse practitioner is understanding in listening to a patient's problems.	1	2	3	4	5
2. The nurse practitioner really knows what she is talking about.	1	2	3	4	5
3. The nurse practitioner doesn't always tell me what effects to expect from my drugs like she could.	1	2	3	4	5
4. The nurse practitioner explains things in simple language.	1	2	3	4	5
5. It is always easy to understand what the nurse practitioner is talking about.	1	2	3	4	5
6. The nurse practitioner should be more attentive than she is.	1	2	3	4	5
7. The nurse practitioner is just not patient enough.	1	2	3	4	5
8. The nurse practitioner is not precise in doing her work.	1	2	3	4	5
9. When I need to talk to someone, I can go to the nurse practitioner with my problems.	1	2	3	4	5
10. There are things I would rather not discuss with the nurse practitioner.	1	2	3	4	5

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11. The nurse practitioner is pleasant to be around.	1	2	3	4	5
12. The nurse practitioner forgets to make sure that I know how and when to take my medication.	1	2	3	4	5
13. The nurse practitioner is often too disorganized to appear calm.	1	2	3	4	5
14. Too often the nurse practitioner thinks you can't understand the medical explanation of your illness, so she just doesn't bother to explain.	1	2	3	4	5
15. The nurse practitioner always gives complete explanations of why tests are ordered.	1	2	3	4	5
16. I'm tired of the nurse practitioner talking down to me.	1	2	3	4	5
17. The nurse practitioner is a person who can understand how I feel.	1	2	3	4	5
18. The nurse practitioner gives directions too fast.	1	2	3	4	5
19. The nurse practitioner gives good advice over the telephone.	1	2	3	4	5
20. The nurse practitioner should be more friendly than she is.	1	2	3	4	5
21. I wish the nurse practitioner would tell me about the results of my tests more than she does.	1	2	3	4	5

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
22. The nurse practitioner asks a lot of questions, but once she finds the answer, she doesn't seem to do anything.	1	2	3	4	5
23. The nurse practitioner gives directions at just the right speed.	1	2	3	4	5
24. A person feels free to ask the nurse practitioner questions.	1	2	3	4	5
25. Just talking to the nurse practitioner makes me feel better.	1	2	3	4	5

THANK YOU for answering the questions above. For my thesis I must describe the characteristics of the people who answer this questionnaire. Your answers to the following questions will be pooled with everyone else's when I analyze the results.

Again, CIRCLE THE NUMBER NEXT TO YOUR ANSWER. Thank you.

1. Sex	Male	1
	Female	2
2. Age	Under 20	1
	20-29	2
	30-39	3
	40-49	4
	50-59	5
	60-69	6
	70 and over	7

3. Circle the highest level of education which applies to you.

some grade school	1
some high school completed	2
high school diploma	3
training after high school or some college	4
Bachelor's degree or higher	5

4. How long have you been coming to this U. S. Public Health Service out-patient clinic?

Less than 1 year	1
1-5 years	2
More than 5 years	3

5. How often do you come here to the U. S. Public Health Service out-patient clinic?

Less than once every 5 years	1
About once every 1-5 years	2
Once or twice a year	3
Every other month	4
Once a month or more	5

6. Do you think you have received help through participation in this study?

Yes

No

Physician Questions

Appendix D

Patient Satisfaction Questionnaire--Outcome Tool

This questionnaire is designed to find out what kinds of things patients like or don't like about the health care they receive in the U. S. Public Health Service out-patient clinic. Your ideas, along with those of other patients, will be used to try to improve the care you are now receiving here.

This questionnaire contains a number of statements, each of which says something different about physicians. For each statement, decide how much you agree or disagree with the view expressed. Think about the care you are now receiving here as you respond to each statement. In a column next to the statements you will find five words to use to describe your opinion. Circle the number under the word which comes closest to your opinion. There are no right or wrong answers. People differ in their views. Your response is a matter of your personal opinion.

If, for any reason, you do not feel you are able to complete this questionnaire, please feel free to hand it back to me unfinished.

The information you give me will be completely confidential.

THANK YOU very much for your time and your help. Below is an example which may help you in completing the questionnaire.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
A. The physician thinks I understand more than I really do	1	2	3	4	5
B. Physicians are put in the position of needing to know more than they possibly could	1	2	3	4	5

The answer to question A indicates that you are quite certain that the physician thinks you understand more than you really do. The answer to question B, "neutral," indicates you can't quite decide whether to agree or disagree with this statement.

Circle the number under the word which comes closest to your own opinion. PLEASE BE SURE TO MARK EVERY STATEMENT.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The physician is understanding in listening to a patient's problems.	1	2	3	4	5
2. The physician really knows what he is talking about.	1	2	3	4	5
3. The physician doesn't always tell me what effects to expect from my drugs like he could.	1	2	3	4	5
4. The physician explains things in simple language.	1	2	3	4	5
5. It is always easy to understand what the physician is talking about.	1	2	3	4	5
6. The physician should be more attentive than he is.	1	2	3	4	5
7. The physician is just not patient enough.	1	2	3	4	5
8. The physician is not precise in doing his work.	1	2	3	4	5
9. When I need to talk to someone, I can go to the physician with my problems.	1	2	3	4	5
10. There are things I would rather not discuss with the physician.	1	2	3	4	5
11. The physician is pleasant to be around.	1	2	3	4	5
12. The physician forgets to make sure that I know how and when to take my medicine.	1	2	3	4	5

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
13. The physician is often too disorganized to appear calm.	1	2	3	4	5
14. Too often the physician thinks you can't understand the medical explanation of your illness, so he just doesn't bother to explain.	1	2	3	4	5
15. The physician always gives complete enough explanations of why tests are ordered.	1	2	3	4	5
16. I'm tired of the physician talking down to me.	1	2	3	4	5
17. The physician is a person who can understand how I feel.	1	2	3	4	5
18. The physician gives directions too fast.	1	2	3	4	5
19. The physician gives good advice over the phone.	1	2	3	4	5
20. The physician should be more friendly than he is.	1	2	3	4	5
21. I wish the physician would tell me about the results of my tests more than he does.	1	2	3	4	5
22. The physician asks a lot of questions, but once he finds the answers, he doesn't seem to do anything.	1	2	3	4	5
23. The physician gives directions at just the right speed.	1	2	3	4	5
24. A person feels free to ask the physician questions.	1	2	3	4	5

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
25. Just talking to the physician makes me feel better.	1	2	3	4	5

Thank you for answering the questions above. For my thesis I must describe the characteristics of the people who answer this questionnaire. Your answers to the following questions will be pooled with everyone else's when I analyze the results.

Again, CIRCLE THE NUMBER NEXT TO YOUR ANSWER. Thank you.

1. Sex

Male	1
Female	2

2. Age

Under 20	1
20-29	2
30-39	3
40-49	4
50-59	5
60-69	6
70 and over	7

3. Circle the highest level of education which applies to you.

some grade school	1
some high school completed	2
high school diploma	3
training after high school or some college	4
Bachelor's degree or higher	5

4. How long have you been coming to the U. S. Public Health Service out-patient clinic?

less than 1 year	1
1-5 years	2
More than 5 years	3

5. How often do you come here to the U. S. Public Health Service out-patient clinic?

less than once every 5 years	1
about once every 1-5 years	2
once or twice a year	3
every other month	4
once a month or more	5

6. Do you think you have received help through participation in this study?

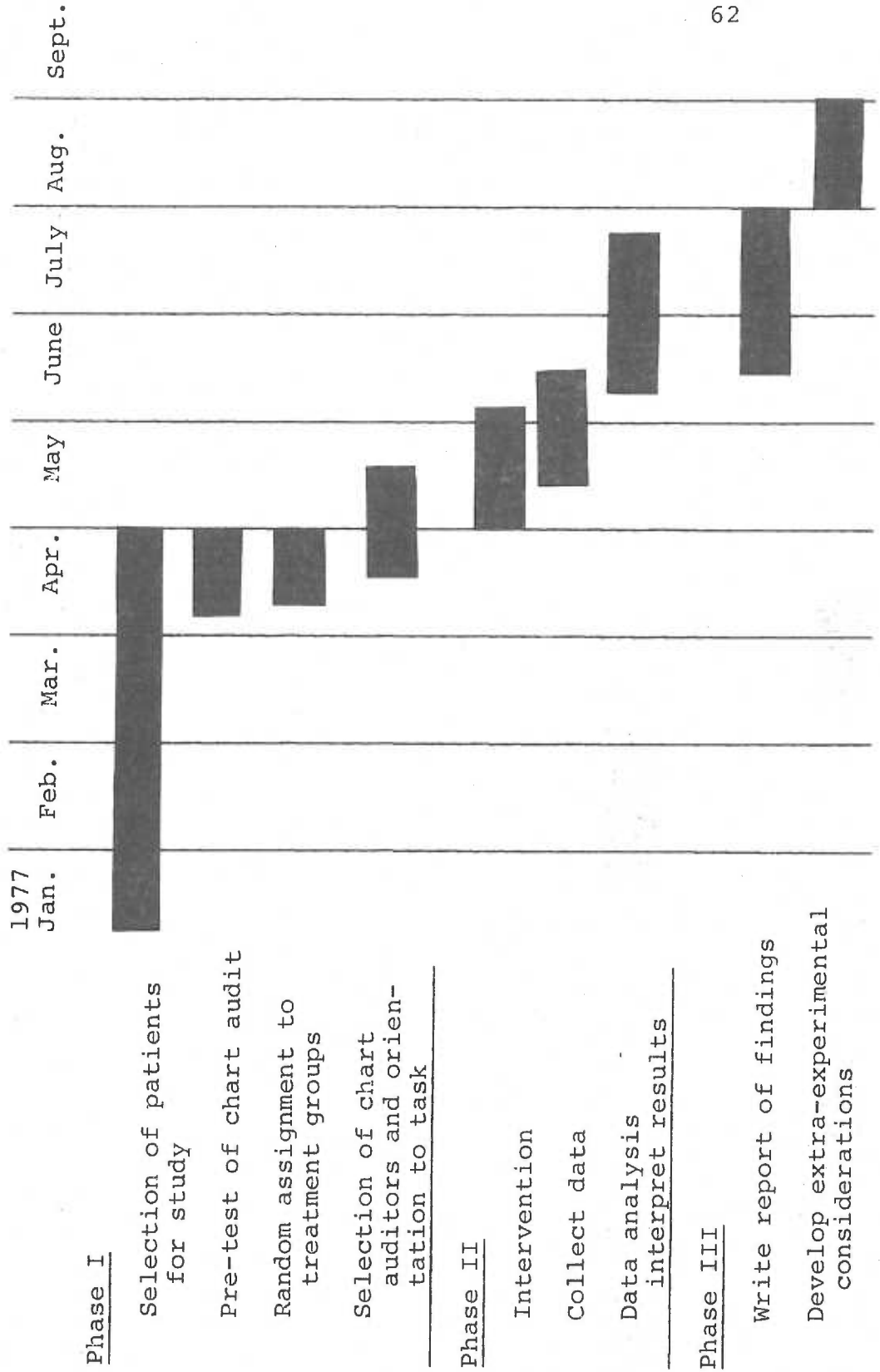
Yes

No

APPENDIX E

TIME FRAME

FAMILY NURSE CLINICIAN STUDY



APPENDIX F

Comparison of Rater's Percent Yes and No
Response to Chart Auditing

Total Family Nurse Practition and Physician

	Yes	No	Total
Rater 1	78%	22%	100%
Rater 2	82%	18%	100%
Rater 3	76%	24%	100%
Rater 4	76%	24%	100%
	312	88	400


AN ABSTRACT OF THE THESIS OF
KAY ELIZABETH ORTMAN
FOR THE MASTER OF NURSING

DATE OF RECEIVING THIS DEGREE
JUNE 9, 1978

TITLE:

THE FAMILY NURSE PRACTITIONER
A RANDOMIZED STUDY

APPROVED:


Marie Berger, M.S. Associated Professor,
Thesis Advisor

ABSTRACT

Assessment of the quality of care delivered by a graduate student in the Master's program is the purpose of this randomized study. This student has skills in patient assessment and experience in primary care settings. The process used and the outcome obtained in terms of patient satisfaction are the dependent variables. The selected population was 54 stable hypertensive patients, both sexes, and ranging in age from 30 to 70 years. The experimental, family nurse practitioner group (26 patients) will be compared to 28 patients followed in the traditional way by one general practitioner (M.D.).

There were two office visits with the 54 patients with a three-week interval between visits. At the end of the second visit the subjects were given a 25-item questionnaire to elicit patient satisfaction with the care given. In addition, the charts of these 54 patients were audited according to accepted minimal care for hypertensive patients with an added emphasis on the use of problem-solving charting and patient education.

Analysis of the data demonstrated one specific functional area where the family nurse practitioner differed from the general practitioner in a primary care setting. That area gave evidence for plans for patient and/or family education. The outcome tool demonstrated no significant difference in patient satisfaction with their care.