

PATIENT SATISFACTION WITH SERVICES RECEIVED  
IN NURSE-DIRECTED ANTICOAGULATION CLINICS

by

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This study is dedicated to my parents who have given me loving support and encouragement for as long as I can remember.

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## ABSTRACT

The relationship between attitude and satisfaction levels served as the conceptual framework for the study. Formation of a positive attitude results in satisfaction and a negative attitude in dissatisfaction. This study was designed to determine the level of satisfaction with the services received in two anticoagulation clinics managed by nurses.

Fifty patients participated in this study by completing a questionnaire which focused on four component areas related to satisfaction: competence of the nurse clinician, provision of patient education, personal attributes of the nurse clinician, and convenience of the clinic design.

The findings revealed that patients were satisfied with the services received in the anticoagulation clinics in terms of overall satisfaction as well as the four component areas. The variables of age, number of months of clinic participation, and number of minor bleeding episodes were correlated with one or more of the subscales at the .05 level of significance.

The questionnaire proved to be internally consistent, although multicollinearity among the subscales existed. The reliability of the questionnaire reinforced the findings which demonstrated a high level of patient satisfaction with the services received in the anticoagulation clinics.

## CHAPTER 1

### INTRODUCTION

In the last 15 years, nurses have been practicing in expanded roles in response to the increasing need for health care services in the United States. The gap between the actual provision of health care and the needs of health care consumers has been created by a variety of factors: "maldistribution and inaccessibility of physicians, high cost of medical education, increasing costs of medical care, and lack of manpower to provide primary, preventive and emergency care" (Storms and Fox 1979, p. 526). Nurses have attempted to close this gap in a variety of ways. Some nurses are functioning as nurse practitioners delivering primary care in areas underserved by the medical profession. Other nurses are practicing in expanded roles where they can help to identify and meet a wider range of patient needs than is possible by the medical profession alone (Bates 1970). The American Academy of Nursing's Statement on Nurses in Primary Health Care (1977, p. 2) includes the following:

Nurses prepared for primary health care roles are able to deal with problems that arise throughout the life cycle. They place emphasis on wellness, on promoting patients' abilities to cope with illness and adjust to disability, and on supporting and enhancing clients' own strengths and assets. They are ready and able to assume responsibility for primary health care and to be accountable for their practice.

The common denominator in the roles of all nurses practicing in expanded roles is that of primary care. In a report from the United States Department of Health, Education, and Welfare (1972, p. 49), the Secretary's Committee to Study Extended Roles for Nurses defined primary care as having two dimensions: "A) a person's first contact in any given episode of illness with the health care system that leads to a decision of what must be done to help resolve his problem, and B) the responsibility for the continuum of care, i.e., maintenance of health, evaluation and management of symptoms, and appropriate referrals." Nurses are utilizing this framework to provide care to persons who would not otherwise receive care and to enhance the services already provided. The United States Department of Health, Education, and Welfare (1976) has recognized the role that nurses play in health care delivery and has encouraged expansion of primary care services.

Planning for health care delivery has been primarily in the hands of top level administrators. However, the consumer, the recipient of health care, has become increasingly vocal in expressing both his needs and his assessment regarding health care and health care delivery. Kramer (1972, p. 578) suggested that "there is no doubt that the health care consumer is already beginning to have an increasing influence on health care planning and delivery. He has the potential to influence, to change, to accept, to veto." The issue of patient satisfaction with health care is a major one. Patient responses regarding satisfaction can provide the input necessary to make changes appropriate to the needs of the consumer.

This input from the consumer regarding his perceptions about health care may also determine the long term effectiveness of alternate forms of health care delivery. Mitchell (1973, p. 116) pointed out that "actions having the greatest probability of success are those which consider the patient-client's perception of the situation and are compatible with the beliefs, values, and attitudes which have shaped those perceptions."

This study examined patients' perceptions about a nurse directed anticoagulation clinic in order to determine levels of satisfaction with this alternate form of health care delivery.

#### Purpose of the Study

The purpose of this study was to determine the level of patient satisfaction with the services received in two anticoagulation clinics managed by nurse clinicians. By examining various components related to satisfaction, such as competence of the nurse clinician, personal attributes of the nurse clinician, provision of patient education, and convenience of the clinic design, satisfaction with health care in relation to anticoagulation therapy was determined. This study was also designed to correlate certain patient characteristics with the level of satisfaction. Based on the findings, alterations could be made in the present clinic design and function of the nurse clinician in order to enhance patient satisfaction. Recommendations for clinic design in other specialized kinds of care could also be made.

### Statement of the Problem

What is the level of patient satisfaction with the services received in a nurse directed anticoagulation clinic?

### Conceptual Framework

The measurement of satisfaction was the focus of this study. Webster's Seventh New Collegiate Dictionary (1970, p. 765) defines satisfaction as the "fulfillment of a need or want." Funk and Wagnall's (1973) expanded this definition to include being fully supplied with what is desired or expected. Murray and Kluckhohn (1953, p. 17) emphasized the aspect of need fulfillment when they described satisfaction as the "most refined sign that we have of whether need processes are being obstructed, advancing without friction, or attaining their aim, or, after cessation of action, whether the effect produced did, in fact, appease a need." Risser (1975, p. 46) applied this definition to patient satisfaction with nursing care by saying that it can be "conceptualized as the degree of congruency between a patient's expectations of ideal nursing care and his perception of the real nursing care he received.

The relationships between satisfaction and attitude served as the basis of the framework for this study. Sussman et al. (1967, p. 12) suggested that satisfaction is "a generalized attitude toward an organized situation." Risser (1975, p. 46) stated that "patient satisfaction implies an attitude." Robinson (1976, p. 5) defined satisfaction as "a positive attitude which is a response to psychological,

sociological, and situational variables." Nelson (1979, p. 4) delineated the differences between satisfaction and dissatisfaction by suggesting that satisfaction, a positive attitude, is a "relatively enduring, learned, affective, attitudinal state dependent on individual needs, perceptions, and expectations," whereas dissatisfaction is a "negative attitude also developing from individual and environmental experiences."

Attitude is defined in the literature as having several components. Allport (1967, p. 8) defined attitude as "a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related." Halloran (1967) analyzed this definition and emphasized three aspects of it: 1) the state of readiness implies that a person perceives stimuli in some categories more readily than in others; 2) an attitude is learned through experiences; and 3) an attitude is dynamic and can be influenced or changed. Attitudes can generally be divided into "for" or "against" categories. Quite simply, Sartain et al. (1967, p. 152) defined an attitude as a "tendency to react positively or negatively in regard to an object." Krech and Crutchfield (1974, p. 177) supported this positive and negative aspect of attitude by defining it as "an enduring system of positive and negative evaluations, emotional feelings, and pro or con tendencies with respect to a social object."

Attitudes involve complex thought processes which refer to the "beliefs, feelings, and action tendencies of an individual or group of

individuals toward objects, ideas and people" (Hutt, Isaacson and Blum 1966, p. 777). Sartain et al. (1967) described the characteristics of the affective, cognitive, and action tendency components of attitude. The affective or emotional component refers to how a person feels about an attitude stimulus. It can be measured by physiological indices or by verbal statements of affect. The cognitive component involves thought, perceptual reaction, and judgments regarding a particular event, issue, or person. The cognitive component can be measured by behavioral indices of cognitive processes or by verbal statements of beliefs. Action tendencies refer to what a person states he 'would' do in a given circumstance. These are measured by observing overt behavior and by verbal statements concerning actions. Shaw and Wright (1967, p. 3) emphasized this componential view of attitude by suggesting that the theoretical construct attitude is limited to "an affective component which is based upon cognitive processes and is an antecedent of behavior." The importance of studying attitude as an antecedent of behavior is stressed when one considers that attitudes, as "the end products of the socialization process, significantly influence man's responses to cultural products, to other persons, and to groups of persons" (Shaw and Wright 1967, p. 1).

The formation of attitude is dependent upon the stimuli present in the environment and the external factors influencing an individual's thought processes (Sartain et al. 1967). Stimuli leading to the formation of attitudes are observed events or symbolic representations of events relating to attitude objects, such as individuals, situations,

social issues, and social groups. When these stimuli are present, a variety of external influences mold and modify the formation and development of an attitude specific to the stimulus.

Attitudes are learned and a variety of events influence the social learning that occurs. Sources of external influences necessary for attitude formation are specific experiences, communication from others, models, and institutional factors (Sartain et al. 1967). Specific experiences with the object of attitude will influence the formation of attitude. If one has a favorable experience, a positive attitude will be formed. An unfavorable experience will lead to negative attitude formation. Formation of attitudes is greatly enhanced when one respects the person trying to influence him. Some attitudes are formed through imitation of models. A person observes the behavior of individuals who are meaningful to him and attempts to copy certain behaviors. Institutions, such as churches, are often instrumental in the formation and development of attitudes.

The relationship of attitude formation and the resulting satisfaction/dissatisfaction is seen in Figure 1.

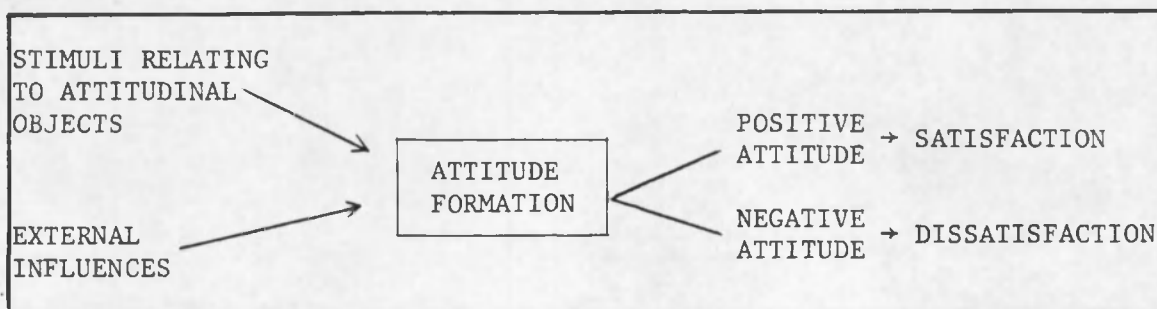


Figure 1. Relationship of Attitude and Satisfaction/Dissatisfaction

The model illustrates that the interaction of stimuli and external influences leads to the formation of attitudes. Depending on these two factors, either a positive or negative attitude is formed. The response to a positive attitude is satisfaction and the response to a negative attitude is dissatisfaction. In this study, satisfaction was defined as a positive attitude toward a stimulus object that is a function of the stimulus itself and the external influences related to the stimulus object. Dissatisfaction was defined as a negative attitude toward a stimulus object that is a function of the stimulus itself and the external influences related to the stimulus object.

## CHAPTER 2

### REVIEW OF LITERATURE

Investigators have studied many facets of the expanded role of the nurse: effectiveness, efficiency, client satisfaction, and attitudes of physicians, nurses, and consumers toward the nurse practicing in an expanded role. Expanded roles for nurses are diverse and vary from setting to setting. The literature reviewed included references pertinent to consumer satisfaction with care given by nurses practicing in a variety of expanded roles geared for providing primary care for adult clients. Literature regarding consumer acceptance of nurses practicing in expanded roles was also included since acceptance, as a function of attitude, is a major determinant in the level of patient satisfaction with primary health care provided by the nurse.

#### Attitudinal Studies

Acceptance by the public of persons practicing in expanded roles has been studied through random selection of consumers in certain geographical locations, often to determine the feasibility of introducing these new health workers into the health care system. Andrus and Fenley (1975) suggested that patient acceptance of nurse practitioners has been so positive that it is no longer an issue. Although reports

have indicated favorable attitudes, acceptance of all functions carried out by nurses practicing in expanded roles has not been documented. Storms and Fox (1979) conducted a telephone survey of 1,301 Baltimore households to determine attitudes toward nurse practitioners and physician's assistants. Three hundred and eighty-two respondents had heard of both physician's assistants and nurse practitioners; 447 had heard of nurse practitioners or physician's assistants; and 472 had not heard of nurse practitioners or physician's assistants. When asked if a nurse practitioner could carry out certain tasks, including providing follow-up care, taking a history and performing a physical examination, seeing pregnant women and well babies, caring for hypertensive patients, providing emergency care, and referring the patient to a physician, only 36.4 percent of the sample felt that the nurse practitioner could perform all the tasks, 56.9 percent felt that some tasks could be performed by the nurse practitioner, and 6.8 percent felt that none of the tasks could be performed by a nurse practitioner. There was greater acceptance of the nurse practitioner carrying out these tasks than physician's assistants.

A random sample of 400 dwellings in Ontario, Canada, revealed that more than 80 percent of the population surveyed found it acceptable to see a nurse if the doctor was not available, to receive advice from a nurse about medication, to seek advice from a nurse in addition to the doctor, and to have a nurse readily available by telephone to answer questions (Chenoy, Spitzer and Anderson 1973). In this same study a majority of respondents indicated that nurses could be as

helpful as doctors and that advice from the nurse could help to prevent illness. However, respondents perceived that physicians best handled worry-inducing health problems, such as dizziness several times a day, trouble sleeping for a week, and pains in the chest several times a day.

Acceptance by clients of the nurse practicing in an expanded role has also been studied. Kubala and Clever (1974) discussed their experiences with nurses providing primary care. Patients from a general medical clinic were divided into a control and an experimental group with the control group receiving traditional physician care and the experimental group receiving care from a nurse practitioner with physician consultation. Although most patients accepted the change without question, 15 percent were skeptical of the change initially with an additional 10 percent voicing concern at a later time. The concerns involved three issues: the title of the care giver, possible change in the mode of treatment, and continuity of care. After one year, one patient from the experimental group sought care from a private physician and one patient moved from the area. In the same time period, seven patients in the control group sought care elsewhere.

Several studies focused on a change in attitude following exposure to the nurse practicing in an expanded role. Flynn (1975) described reactions of consumers to nurse clinicians. A sample of 60 patients from a county hospital medical outpatient clinic was randomly divided into an experimental group with 40 patients and a control group with 20 patients. The experimental group received primary care from

nurse clinicians. The hypothesis that the nurse clinicians' patients would be more accepting of the nurse clinician than patients receiving care from traditional sources was supported. Patients were asked to respond to questions involving tasks or activities performed by the nurse clinician, such as deciding if patients need to see a physician, patient teaching, regulating medications, visiting patients in their homes, and initiating patient referrals. All of the experimental patients responded favorably to the care provided by nurse clinicians.

Lewis and Resnik (1967) developed a tool to measure patients' preference for a doctor, nurse, or either in terms of performing certain tasks. These tasks included the following: explaining results of tests, changing dressings, explaining what is wrong with the patient, giving a shot, examining the throat, taking the blood pressure, explaining results of x-rays, instructing on diet regimens, prescribing treatment, and explaining how and why to take medication. They used the tool to determine acceptance of nurses practicing primary care in a medical adult chronic care clinic. Patients were divided into an experimental group and a control group with 33 subjects each. The questionnaire was administered to both groups at the onset of the study. After one year, they found a shift in preference in the experimental group from the physician to the nurse in six of the task areas: explaining results of tests, explaining what is wrong with the patient, examining the throat, taking the blood pressure, explaining the results of x-rays, and explaining how and why to take medications. There was no change in preference in the control group managed by physicians.

A serendipitous finding was that in the preceding year, the nurse clinic logged only 5.4 percent broken appointments as compared to 10.1 percent in the physician clinic.

Using the same tool in a Veterans Administration Hospital where nurse practitioners were utilized in a clinic setting, Lewis and Cheyovich (1976) reinterviewed 121 patients after they had received primary care for one year from one of two nurse practitioners. Patients cared for by one of the nurse practitioners (Nurse Practitioner A) demonstrated a significant shift in preference from physician to nurse in the following tasks: explaining the results of tests, explaining what is wrong with the patient, prescribing medications, and explaining how and why to use medications. The patients cared for by the other nurse practitioner (Nurse Practitioner B) indicated no shift in preference. Retrospectively, the researchers concluded that Nurse Practitioner A functioned more independently from the physician in decision making and administering patient care than Nurse Practitioner B.

Weinstein and Demers (1974) surveyed clients of a nurse managed clinic in a rural setting where the nearest source of medical care was 30 miles away. The investigators claim strong public acceptance of the nurse clinic since 90.1 percent of the clients indicated they were willing to visit the clinic for future medical problems, 92.5 percent would seek care for future nonserious accidents at the clinic, 70.8 percent would go to the clinic to discuss nonmedical problems, and

82.2 percent would go to the clinic for treatment following serious accidents.

### Measurement of Satisfaction

Since the inception of the nurse practitioner role in 1965 (Silver, Ford and Day 1968), the issue of client satisfaction with care provided by nurse practitioners has been an area for study. Soper et al. (1975) surveyed 162 patients in a chronic care clinic where care was provided by nurse practitioners. In comparing current care with previous care from a physician alone, 91 percent of the respondents indicated that care was more comprehensive, 89 percent felt that the care taker was more available, 88 percent felt that they (the patients) had a better understanding of their health problems, and 65 percent responded that they had better rapport with the nurse than with the physician. In a wide variety of settings, Levine et al. (1978) found that 60 percent of 289 clients were pleased with care given by the nurse practitioners as the nurse practitioner handled problems well. Findings included that the nurse practitioners did not appear rushed or nervous, were able to answer patient's questions adequately and did not make them feel uncomfortable about asking silly questions, were reassuring, friendly, and warm, and made the patients feel confident that they were in good hands. Linn (1976) utilized 10 ambulatory care settings chosen because they employed nurse practitioners who were trained at the University of California at Los Angeles in 1973 and 1974. The sample populations consisted of 1,667 patients seen by nurse practitioners (Primex) or physicians. The tool utilized to

measure satisfaction was based on five indices of patient perception: access, general satisfaction with the visit, rapport, satisfaction with the physician provider, and satisfaction with the nurse provider.

Patients who saw a Primex were less satisfied regarding access. There were no statistical differences in satisfaction between patients who saw a Primex and patients who saw a physician in the indices of general visit, rapport, or physician provider. Patients of the Primex were overall more satisfied than patients who saw physicians.

Spitzer et al. (1974) studied two practices in Ontario involving 1598 families. The families were randomly divided into two groups. Two physicians split one group consisting of 1058 families and two nurse practitioners divided the other group of 540 families. The physicians were given twice as many patients as the nurse practitioners as it was felt that they were better able to carry that load. After one year, 97 percent of patients in the conventional care group and 96 percent of patients in the nurse practitioner group indicated that they were satisfied with the health services received.

Patient satisfaction with care provided has also been measured utilizing a tool developed by Hulka et al. (1970) for use in evaluating patient satisfaction with medical care and revised by Pergrin (1974) for use with nurse practitioners. The tool was developed using the Thurstone Equal Appearing Interval method and revised to include a Likert type response set (Zyzanski, Hulka and Cassel 1974). The scale has three components: professional competence, personal qualities, and cost/convenience. Pergrin used the tool to assess satisfaction of

patients with diabetes and hypertension who were cared for by nurse practitioners. Scores were highest in terms of satisfaction for the Personal Qualities Subscale and next highest for the Cost/convenience Subscale. Satisfaction scores were lowest in the professional competence area. Total satisfaction with the care received from the nurse practitioner was high.

Robinson (1976) utilized Pergrin's tool to assess satisfaction with care given to 71 patients in two Air Force ambulatory care clinics. Overall satisfaction with the nurse practitioner was high as well as the subscale components of professional competence and personal qualities. Satisfaction with convenience was significantly lower than scores in the other two areas. As age increased, satisfaction decreased in the area of professional competence and in overall satisfaction.

Nelson (1979) also utilized the Pergrin tool in a Health Maintenance Organization setting employing three family nurse practitioners. In a sample size of 30, professional competence had the highest mean score, with cost/convenience the next highest and personal qualities the lowest. All components had a positive value indicating satisfaction. The overall satisfaction score was also positive. Nelson remarked that the mean age of the sample, 30.7 years, suggested that these clients had acute rather than chronic illness and thus were more concerned with the competence of the care giver rather than the personal qualities important in long term care.

Several investigators looked at the addition of a nurse practitioner to a private physician practice. Nurse practitioners generally were involved in health maintenance, including well-baby checks, history and physical examinations, breast examinations, counseling, routine pelvic examinations, and Pap smears. In a setting such as this, Merenstein, Wolfe and Barker (1974) interviewed 172 patients. They found no change in attitude toward the practice, that more patients felt they received more rather than less information, that patients felt care was better rather than worse, and that 85 percent would recommend the practice to others. Of those patients who actually received care from a nurse practitioner, 51 out of 52 respondents said they would seek care from the nurse practitioner again.

Gardner and Ouimette (1974) evaluated a private practice where the nurse practitioner functioned primarily in the areas of history taking and data collection, physical examination, and counseling and health maintenance. Each area was assessed individually and of the 111 clients who completed the questionnaire, a range of 45 to 82 percent indicated that the nurses performed a specific function in caring for them. Of the positive respondents in each area, 85 to 99 percent indicated that they were satisfied with the service. Fifty-one percent of the respondents felt the health care delivered by the nurse-physician team was better than that delivered by the physician alone.

A number of nurses practice in expanded roles in clinics serving selected clients. Studies have been done to determine satisfaction with the health care provided by nurses in these specialty clinics. Patient satisfaction with a cancer detection clinic was demonstrated with 31.8 percent of the respondents indicating they were satisfied, 36.4 percent were highly satisfied, and 24.2 percent were very highly satisfied with care provided by the nurse (Stromborg and Bourque-Nord 1979). There was no significant difference in satisfaction whether the primary care giver was a nurse or a physician. In addition, clients checked descriptors related to care given by the physician or nurse practitioner. Of those patients examined by a nurse, 77.6 percent felt the examination was thorough as compared to 73.6 percent examined by a physician. Clients indicated that the nurse practitioner explained procedures more often than the physician, answered questions more often than the physician, and was a more caring person than the physician.

Wagner and Carter (1978) looked at satisfaction with care given by nurse practitioners at a state university gynecology clinic. Of 3,527 clients questioned, 100 percent felt that the service was helpful. Ninety four percent rated the attitude of staff as excellent, 86.1 percent evaluated the medical procedures as excellent, and 60.7 percent felt the services were excellent. Almost 100 percent of the respondents indicated that they had an opportunity to thoroughly discuss concerns.

Soghikian (1978) studied satisfaction with care received in a hypertension clinic. More than 90 percent of the respondents were very satisfied with the care they received from the nurses during the clinic visit. The clients felt that the primary care nurse was competent, adequately explained procedures and treatments, paid attention to their concerns, and gave helpful advice. Eighty-four percent of the respondents preferred receiving care from a nurse practitioner over care from traditional sources.

#### Expanded Nursing Practice in the Anticoagulation Clinic

Nurse practitioners and nurse clinicians with specialized training have moved into an increasing number of specialized areas. A recent literature review revealed that nurses now manage patients with hypertension (Soghikian 1978; Clark and Dunn 1976), urinary tract infection (Rajagopalan and Glass 1978), and gynecologic problems (Wagener and Carter 1978). Cancer detection (Stromborg and Bourque-Nord 1979), holistic health (Brallier 1978), and admissions triaging (Kettel et al. 1978) have been the focus of other primary care nurses. These are but a few of the areas in which nurses practice primary care in expanded roles.

The role of the nurse functioning as a primary care giver in a clinic for anticoagulation services has a limited base in the literature. This investigator could find only two such reports. Crews (1972) described a nurse-managed anticoagulation clinic. The subpopulation of anticoagulant patients was selected from the adult cardiac clinic

population for management by nurses for several reasons: 1) the medical regimen could be standardized thus providing a framework on which a specially trained nurse could make assessments and determine interventions, and 2) the long term care required by patients on anticoagulation therapy was ideally suited to the type of care a nurse is skilled to provide. The theoretical framework selected for establishing nursing care protocols was Orem's Self-Care Needs theory (Orem 1971). Methods were devised to assess the client's baseline knowledge level and to provide individualized ways to assist the client to achieve compliant behavior. Patient education designed to meet self-care needs was emphasized as a nursing function as well as appropriate anticoagulation assessment, intervention, and evaluation. Assessment of the effectiveness, safety, or patient satisfaction in the nurse-managed anticoagulation clinic was not revealed in the report or in the subsequent literature.

Gassmann et al. (1978) reported on the effectiveness and safety of the two nurse directed anticoagulation clinics involved in the present study. Two hundred and fifty-seven cardiac outpatients were seen in two clinics by specially trained cardiac nurses. The nurses interpreted prothrombin time results, regulated warfarin dosages, and monitored the patients for side effects. Patients were taught about the drug and its side effects with the aid of educational materials. One hundred and ten patients were on anticoagulants less than four months and 147 patients were followed in the clinic on a long term basis. Three patients experienced major bleeding episodes resulting in

hospital admission or discontinuance of the drug and 29 patients experienced minor, or self-limiting, bleeding episodes. None of the 11 deaths among the patients during the study was felt to be related to anticoagulation. In this study the number of episodes of major and minor bleeding was not significantly different than reports of bleeding in the literature. The investigators concluded that management of anticoagulation therapy by specially trained nurses was safe and effective. Hager (1978) referred to this study and suggested that since the figures for major and minor bleeding were slightly better than reported in the literature, the need for individualized and careful supervision of patients being anticoagulated was strongly supported.

Several articles on the role of patient education in anticoagulation therapy were found. Ewy, Ulfers and Samuels (1978) emphasized the need for the patient to share the responsibility for appropriate and safe anticoagulation. This could be done through patient education by instructing the patient to take the anticoagulant drug as ordered and to recognize its side effects. Areas emphasized for proper teaching included: information about the commonly used anticoagulant drugs and their actions, the purpose of frequent blood tests, the dangers of anticoagulant therapy, accident prevention, risks of child bearing and contraception (Moore and Maschak 1977), patient responsibility, instruction on diet regarding foods containing high concentrations of Vitamin K, and information on prescription and nonprescription drugs that interact with anticoagulant drugs (Ewy et al. 1978).

## CHAPTER 3

### METHODOLOGY

This chapter discusses the following aspects of the research process: design of the study, the setting, study sample, human rights, method of data collection, measurement instruments, method of data analysis, and design limitations.

#### Design of the Study

A descriptive design was used to measure the level of satisfaction expressed by patients of two anticoagulation clinics managed by nurse clinicians. The study was done to determine the relationship between the level of satisfaction and patient characteristics. The patient characteristics used were: age, sex, ethnic origin, number of times the patient telephoned the nurse clinician about problems relating to anticoagulation therapy in the last three months, number of times the patient visited the nurse clinician for problems involving anticoagulation therapy in the last three months, number of prothrombin times drawn in the last three months, number of months of patient participation in the nurse directed anticoagulation clinic, number of major bleeding episodes the patient had experienced, and number of minor bleeding episodes the patient had experienced.

### Setting

Two nurse-directed anticoagulation clinics were the settings for this study. One anticoagulation clinic was based in a university medical center (Hospital A) and one was based in a Veterans Administration Hospital (Hospital B). Both hospitals were located in an urban area in the southwestern part of the United States.

The clinics were similar in design and were in operation for four years prior to the study. Patients who were followed in the anticoagulation clinic were seen by the nurse clinician prior to starting therapy. An initial baseline assessment was done along with patient teaching regarding anticoagulation therapy. The patient was begun on an anticoagulant dose prescribed by the referring physician. The patient was then asked to return to the clinic after a designated period of time to have a prothrombin time drawn. One group of patients (Hospital A) reported directly to the laboratory and one group of patients (Hospital B) reported to the anticoagulation clinic to pick up a laboratory request form prior to reporting to the laboratory. After the blood was drawn, the patient returned home. On the same day, the nurse clinician called the patient at home to report the results and requested the patient to continue taking the anticoagulant as before or adjusted the dosage according to the laboratory results. The patient was then asked if he had any problems with medication side effects and if he understood any change in the medication dosage. The patient was then told when to come in for the next prothrombin time test.

Any patient who reported side effects, such as overt bleeding, ecchymosis, or tarry stools was seen by the nurse clinician or referred to the physician. The problem was investigated and appropriate interventions done, such as further patient education or a change in dosage, in order to ensure safe and effective anticoagulation therapy.

Patient teaching by the nurse clinician was supplemented by a pamphlet on anticoagulation therapy which was taken home by the patients. Patients received instructions regarding the oral anticoagulant drug, the importance of the laboratory tests, drug interactions, accident prevention and diet. Special emphasis was placed on notifying the nurse clinician if the patient started or discontinued any other medication and if signs or symptoms developed which may have been related to the anticoagulation therapy. The patient's knowledge level was assessed informally and learning was reinforced periodically by the nurse clinician.

Patients were referred to the anticoagulation clinics by physicians practicing in the institutions. Patients followed in the anticoagulation clinic in Hospital A were referred from physicians practicing in a variety of specialties. Approximately 75 patients were followed in Hospital A's clinic at the time of the study. The patients followed in the anticoagulation clinic in Hospital B were referred primarily from cardiologists and numbered approximately 60.

Three nurse clinicians were involved in the operation of the two anticoagulation clinics. One nurse clinician was employed in Hospital A. This nurse clinician was a diploma-prepared registered nurse

with 15 years experience in nursing and five years in intensive cardiac care. She received specialized on-the-job training in managing anticoagulation therapy and had been functioning as the nurse clinician in the anticoagulation clinic for four years at the time of the study. Two nurse clinicians were involved in the anticoagulation clinic at Hospital B. Both of these nurse clinicians were registered nurses with baccalaureate degrees and a minimum of two years experience caring for critically ill cardiac patients. These nurse clinicians also received on-the-job training for their roles in the anticoagulation clinic. One nurse had managed anticoagulation for one year and the other nurse for two years. Functioning in the role of nurse clinician in the anticoagulation clinic was only one of the responsibilities for all three nurse clinicians.

#### Study Sample

Subjects were selected from the patient populations of the two anticoagulation clinics. A convenience sample of 25 patients from each clinic was obtained from those patients who visited the clinic during the period of data collection and who agreed to participate in the study. To meet the criteria for subject selection, the subject had to: 1) be at least 18 years of age; 2) had attended the anticoagulation clinic for at least four months; and 3) be able to read English.

#### Protection of Human Rights

The guidelines for protection of subjects' human rights determined by the United States Department of Health, Education and Welfare,

including the right to informed consent, confidentiality, and protection against risk to subjects were followed in this study. The subjects were informed as to the intent of the study and the questionnaire carried a disclaimer form stating that completion of the questionnaire indicated consent to participate in the study (Appendix B). Subjects from the Veterans Administration Hospital were also asked to sign an agreement to participate in research by or under the direction of the Veterans Administration. Data were collected only after approval was given by The University of Arizona Human Subjects Committee (Appendix A).

#### Method of Data Collection

The purpose of the study was presented to the nurse clinicians in the anticoagulation clinics and to the two physicians responsible for the respective clinics to determine the feasibility of conducting the study. After approval was received from The University of Arizona Human Subjects Committee, a written request was submitted to the Associate Director of Nursing for Research for permission to utilize Hospital A for data collection. The Research and Development Committee in Hospital B was asked for permission to gain access for data collection in that institution.

Data were then collected during clinic hours in each institution until the desired sample size was reached. A four week period was needed for data collection. A different mechanism for subject recruitment was utilized in each of the two institutions used in this study. The nurse clinician in Hospital A provided a list of names to the investigator of patients who soon would be coming to the hospital to have

prothrombin times drawn. This list also included the names of patients on anticoagulation therapy who would be coming to the hospital for participation in another study. The investigator contacted some of the patients by telephone to request the person's participation in the study and to arrange a meeting at the hospital or in the patient's home. Those patients who came to the hospital to participate in the other study were contacted by the investigator when they arrived at the hospital. In order to recruit subjects in Hospital B, the investigator waited in the anticoagulation clinic for patients to arrive to have prothrombin times drawn. Each patient was approached by the investigator who explained the purpose of the study, ascertained if the patient met the criteria for the study, and requested participation by the patient in the study. Only three patients contacted refused to participate in the study. No reason was given for any of the refusals. The patient was assured that the nurse clinician was aware that the study was being conducted. If the patient consented to participate, the patient was given the disclaimer form and the questionnaires with the accompanying instructions. The investigator remained with the patient while he completed the questionnaire in order to answer any questions he may have had. Once consent for participation was obtained, there was no subject attrition in this study.

The questionnaires were numbered consecutively. The questionnaire number and the patient's name were matched on a list separate from the questionnaire. Following a chart review to obtain additional data,

the completed questionnaire and the data obtained during the chart review were paired. The list identifying the patient by number was kept in the investigator's possession.

### Measurement Instruments

This study utilized three tools for collecting data: 1) The Satisfaction Questionnaire; 2) Patient Characteristics Questionnaire; and 3) Chart Review.

#### The Satisfaction Questionnaire

The tool used for measuring patient satisfaction in this study was a 40-item questionnaire designed specifically to measure satisfaction with the two anticoagulation clinics involved in this study since a suitable tool was not found in the literature. Measurement of the components of patient satisfaction are described in the literature (Hulka et al. 1970; Pergrin 1974; Risser 1975; Soper et al. 1975; Linn 1976). These components include cost, convenience, competence of the care giver, access, personal qualities of the care giver, rapport, and the educational relationship of the patient and provider. For this study, these areas were collapsed into four components of satisfaction: competence of the nurse/clinician, provision of patient education, personal attributes of the nurse/clinician, and convenience of the clinic design. A cost component was not included since the patients who went to Hospital A paid only for the prothrombin time blood test and the medication and the patients who went to Hospital B received all care, laboratory tests, and medication free of charge.

The four component areas of satisfaction used in this study were defined as follows:

Competence of the Nurse Clinician--The patient's attitude regarding the nurse clinician's knowledge and judgment used in providing primary care.

Provision of Patient Education--The patient's perception of the extent and effectiveness of patient teaching regarding anticoagulation therapy.

Personal Attributes of the Nurse Clinician--The patient's feelings about the interpersonal communication between the patient and the nurse clinician.

Convenience of the Clinic Design--The patient's perceptions about his access to care in the anticoagulation clinic.

Since a Likert type design was used for the satisfaction scale, four criteria were used in the construction of the scale: 1) all statements were expressions of desired behavior; 2) each item was clear, concise, and straightforward; 3) the statements had a wide range of modal responses; and 4) one-half of the statements were worded to evoke a positive response and one-half were worded to evoke a negative response (Likert 1967). Five items expected to receive a positive response were written for each of the four component areas accompanied by five items in parallel form designed to evoke a negative response. Thus, the entire scale consisted of 40 items which were divided into

four subscales consisting of 10 items each. The five response categories for each item were: strongly agree, agree, undecided, disagree, and strongly disagree. The positively charged items were scored as follows: strongly agree (+2), agree (+1), undecided (0), disagree (-1), and strongly disagree (-2). The negatively charged items were scored as follows: strongly agree (-2), agree (-1), undecided (0), disagree (+1), and strongly disagree (+2). The range of possible mean scores as determined by this procedure was (-2) to (+2). Satisfaction was operationally defined as a score greater than zero. The higher the score, the higher the level of satisfaction. Dissatisfaction was operationally defined as a score less than zero.

Content validity was assessed by three nurse clinicians to ensure that the items in the component areas covered the entire domain of care given in the anticoagulation clinic. A group of five cardiovascular experts were asked to determine face validity by assessing the scale to ensure that the items actually measured satisfaction. This group of experts were asked to determine construct validity by blindly placing the items into their respective component areas. An item was retained if four out of five of the experts placed the item into the appropriate component area. An item was reworded if the experts felt that it was ambiguous. Concept validity was determined by asking the experts to match the parallel forms of each item. They were able to match parallel forms with 100 percent accuracy. Based on the input from the experts, some items were reworded to ensure that the parallel

items were true opposites. The items were then randomly assigned positions in the measurement tool in order to limit a response set.

#### Patient Characteristics Questionnaire

The Patient Characteristics Questionnaire was designed to collect data regarding the patients who were being followed in the anticoagulation clinic. Patient characteristics included age, sex, ethnic origin, number of times the patient telephoned the nurse clinician about problems with anticoagulation therapy in the last three months and the number of times the patient visited the nurse clinician for problems with anticoagulation therapy in the last three months. In addition, the patients were asked to list all medications that they were currently taking. Content validity was determined by the nurse clinicians.

#### Chart Review

Additional information was collected from the charts of patients who consented to participate in the study and who completed the questionnaires. Date of onset for participation in the nurse-directed anticoagulation clinic, number of prothrombin times drawn in the last three months, and number and nature of major and minor bleeding episodes that the patient had experienced were documented through chart review. A major bleeding episode was defined as one that resulted in hospital admission and/or discontinuation of the anticoagulant. A minor bleeding episode was defined as self-limited bleeding. The indication for

anticoagulation therapy for each subject was also documented through chart review.

#### Method of Data Analysis

Responses to the Satisfaction Questionnaire were scored by computer. The following procedure was used to determine the satisfaction scores for the component areas of competence, personal attributes, patient education, and convenience, and for overall satisfaction. The response categories for each item were: strongly agree, agree, undecided, disagree, and strongly disagree.

The Statistical Package for the Social Sciences computer programs (Hie et al. 1975) were used to determine frequency distributions, ranges, means, medians, and standard deviations for each item, each component area or subscale, and the entire scale. Mean scores for the entire sample and for each of the two patient groups (Hospitals A and B) were computed for each component area and for the entire scale. Mean scores of the two patient groups were compared using t tests. The level of significance for t tests was .05.

Responses to the Patient Characteristic Questionnaire and data obtained from the Chart Review were analyzed with respect to the following Patient Characteristics: age, sex, ethnic origin, number of times the patient telephoned the nurse clinician about problems with anticoagulation therapy in the last three months, number of times the patient visited the nurse clinician for problems with anticoagulation therapy in the last three months, length of time the patient had been followed

in the anticoagulation clinic, the number of major bleeding episodes the patient had experienced, and the number of minor bleeding episodes the patient had experienced.

Data were then analyzed using the Pearson product-moment correlation coefficient (Ferguson 1976) to determine if significant relationships existed between the four mean satisfaction scores as well as the mean overall satisfaction score and the patient characteristics of age, number of times the patient telephoned the nurse clinician about problems with anticoagulation therapy in the last three months, the number of times the patient visited the nurse clinician for problems with anticoagulation therapy in the last three months, number of prothrombin times drawn in the last three months, length of time the patient had been followed in the nurse directed anticoagulation clinic, number of major bleeding episodes, and number of minor bleeding episodes. The correlations were considered significant at the .05 level.

The relationships between the four mean satisfaction scores, as well as the overall satisfaction score, and the patient characteristics of sex and ethnic origin (only two ethnic groups were identified in this study) were determined by a point biserial correlation coefficient (Ferguson 1976). The relationships were considered significant at the .05 level.

Nature of the bleeding episodes, medications currently being taken, and indications for anticoagulation therapy were tabulated by hand for frequencies.

Reliability testing was performed on the Satisfaction Questionnaire. An alpha reliability coefficient (Ferguson 1976), a measure of internal consistency, was determined for each subscale, or component area, of the satisfaction scale and for the total satisfaction scale. Correlation coefficients were obtained to measure the strength of the relationship between parallel forms of the same question and between the entire group of positive items and the entire group of negative items.

## CHAPTER 4

### PRESENTATION OF THE DATA

This chapter presents the results of the study. Findings related to characteristics of the sample, satisfaction levels, inter-correlations, possible intervening variables, and reliability testing are revealed.

#### Characteristics of the Sample

##### Age and Sex

The reported ages of the 50 subjects ranged from 28 years to 76 years. The mean age was 60.4 years with a median age of 61.7 years. Eighty-eight percent of the subjects were over 50 years of age (Table 1). Sixty-eight percent of the subjects were between the ages of 50 and 69.

Table 1. Distribution of Subjects by Age

	Age						Total
	20-29	30-39	40-49	50-59	60-69	70-79	
Number	1	1	4	15	19	10	50
Percent	2	2	8	30	38	20	100

$\bar{x}$  = 60.4 years

Thirty-nine (78 percent) of the 50 respondents were males and 11 (22 percent) were females. There was a ratio of three males to one female.

#### Ethnic Origin

Forty-seven (94 percent) of the 50 respondents reported their ethnic origin as Anglo, while three (6 percent) respondents indicated that they were Mexican-American. No other response category was checked.

#### Patient Telephone Calls Regarding Problems

The distribution of the number of times the patient reported telephoning the nurse clinician with problems involving anticoagulation therapy in the last three months is presented in Table 2. Forty-one (82 percent) of the 50 respondents reported that they had not telephoned the nurse clinician with problems involving anticoagulation therapy in the last three months. Only two subjects (4 percent) reported telephoning the nurse clinician with problems more than three times in the last three months.

#### Patient Visits Regarding Problems

The distribution of the number of times the patient reported visiting the nurse clinician for problems involving anticoagulation therapy in the last three months is presented in Table 3. Forty (80 percent) of the 50 respondents reported that they had not visited the nurse clinician for problems involving anticoagulation therapy in the

Table 2. Distribution of Subjects by Telephone Calls Regarding Problems

	Number of Telephone Calls						Total
	0	1	2	3	4	10	
Number	41	1	3	3	1	1	50
Percent	82	2	6	6	2	2	100

$\bar{x} = .06$  telephone calls

Table 3. Distribution of Subjects by Visits Regarding Problems

	Number of Visits							Total
	0	1	2	3	4	5	6	
Number	40	2	1	3	1	1	2	50
Percent	80	4	2	6	2	2	4	100

$\bar{x} = 0.68$  visits

last three months. Only four (8 percent) of the 50 respondents reported that they had visited the nurse clinician with problems more than three times in the last three months.

#### Months of Clinic Participation

The number of months that the subjects had participated in the nurse directed anticoagulation clinic ranged from four to 47 months with a mean of 25.0 months and a median of 19.5 months. Distribution of the subjects by the number of months of clinic participation is presented in Table 4. Fifty-six percent (28 subjects) had participated in the clinic less than two years. Thirty-four percent (17 subjects) had participated in the clinic more than three years.

#### Prothrombin Time Blood Tests

The number of prothrombin time blood tests drawn in the last three months prior to the study ranged from one to 21 times with a mean of 7.12 times. The distribution of subjects by number of prothrombin times drawn in the last three months is presented in Table 5. Fifty percent (25 subjects) had more than three prothrombin times drawn in the last three months. Twenty-four percent (12 subjects) had more than 12 prothrombin times drawn in the last three months.

#### Major Bleeding Episodes

Forty-eight (96 percent) of the 50 subjects experienced no episodes of major bleeding during participation in the nurse directed

Table 4. Distribution of Subjects by Months of Clinic Participation

	Number of Months				Total
	0-11	12-23	24-35	36-47	
Number	14	14	5	17	50
Percent	28	28	10	34	100

$\bar{x}$  = 25.0 months

Table 5. Distribution of Subjects by Number of Prothrombin Times in the Three Month Period Prior to Study

	Number of Prothrombin Times							Total
	1-3	4-6	7-9	10-12	13-15	16-18	19-21	
Number	25	4	3	6	7	3	2	50
Percent	50	8	6	12	14	6	4	100

$\bar{x}$  = 7.12 prothrombin times

anticoagulation clinic. Two (four percent) of the subjects each experienced one episode of major bleeding which was documented by a hematoma.

#### Minor Bleeding Episodes

The distribution of subjects by number of minor bleeding episodes is presented in Table 6.

Thirty-five (70 percent) of the 50 subjects experienced no episodes of minor bleeding during participation in the nurse directed anticoagulation clinic. One subject experienced nine episodes of minor bleeding during participation in the nurse directed anticoagulation clinic.

The nature of the minor bleeding episodes documented in this study is presented in Table 7. Epistaxis was the nature of 21 (53.9 percent) of the episodes. Rectal bleeding and ecchymosis each represented 15.4 percent of the episodes.

#### Indications for Anticoagulation Therapy

The distribution of subjects by indication for anticoagulation therapy is presented in Table 8.

Eleven (22 percent) of the 50 subjects were placed on anticoagulation therapy due to aortic and/or mitral valve replacement. Anticoagulation therapy was indicated for 27 (54 percent) of the 50 subjects due to atrial fibrillation, aortic and/or mitral valve replacement, or a combination of the two.

Table 6. Distribution of Subjects by Number of Minor Bleeding Episodes

	Number of Minor Bleeding Episodes							Total
	0	1	2	3	5	7	9	
Number	35	8	2	2	1	1	1	50
Percent	70	16	4	4	2	2	2	100

$\bar{x}$  = 0.78 minor bleeding episodes

Table 7. Nature of Minor Bleeding Episodes

Nature of Bleeding	Number of Episodes	Percent
Epistaxis	21	53.9
Rectal Bleeding	6	15.4
Ecchymosis	6	15.4
Hemoptysis	3	7.7
Hematuria	2	5.1
Post-surgical Bleeding	<u>1</u>	<u>2.5</u>
Totals	39	100.0

Table 8. Distribution of Subjects by Indication for Anticoagulation Therapy

Indication	Number	Percent
Aortic and/or Mitral Valve Replacement	11	22
Atrial Fibrillation	8	16
Atrial Fibrillation and Aortic and/or Mitral Valve Replacement	8	16
Atrial Fibrillation and Cerebral Vascular Accident	3	6
Deep Vein Thrombosis/Phlebitis	3	6
Left Ventricular Aneurysm or Clot	3	6
Atrial Fibrillation and Rheumatic Heart Disease	2	4
Chaotic Atrial Rhythm/Paroxysmal Atrial Tachycardia	2	4
Cerebral Vascular Accident	2	4
Cerebral Vascular Accident and Aortic and/or Mitral Valve Replacement	2	4
Transient Ischemic Attacks	1	2
Atrial Fibrillation and Transient Ischemic Attacks	1	2
Rheumatic Heart Disease	1	2
Pulmonary Embolus	1	2
Cardiomyopathy	1	2
Cardiomyopathy and Cerebral Vascular Accident	<u>1</u>	<u>2</u>
	50	100

### Medications Currently Being Taken

Forty-seven (94 percent) of the subjects listed those medications that they were taking at the time of the study, while three (6 percent) subjects did not answer the question or indicated that they were unable to recall what drugs they were taking. A listing of the medications that patients reportedly were taking at the time of the study is seen in Appendix F.

### Satisfaction Levels

Levels of satisfaction with the services received in the nurse directed anticoagulation clinic were evaluated by examining the individual item responses, scores on each of the satisfaction subscales, and total scores on the Patient Satisfaction Questionnaire.

#### Item Responses

- Item 1: The majority of patients (98 percent) felt that the clinic was set up so that the nurse clinician has time to talk to them when they need it, while only one (two percent) patient was undecided.
- Item 2: All the patients (100 percent) indicated that the nurse clinician is pleasant to be around.
- Item 3: The majority of the patients (88 percent) disagreed with the statement that the nurse clinician does not always make sure they understand what side effects to watch for, while 12 percent agreed with the statement.
- Item 4: Eighty-eight percent of the patients agreed that the nurse clinician knows the right questions to ask to find out about problems. Four percent disagreed and eight percent were undecided.
- Item 5: Most of the patients (94 percent) denied that it was hard to come to the clinic during clinic hours for blood tests. Four percent were undecided and two percent agreed with the statement.

- Item 6: Eighty percent of the patients disagreed with the statement that talking to the nurse clinician never makes them feel better, while four percent agreed with the statement and 14 percent were uncertain.
- Item 7: Most of the patients (98 percent) disagreed with the statement that the nurse clinician does not seem to know what she is doing and two percent agreed with the statement.
- Item 8: Most of the patients (96 percent) felt that the nurse clinician really listens to them, while two percent were uncertain, and two percent disagreed.
- Item 9: All of the patients (100 percent) denied that the nurse clinician does not seem to care about them.
- Item 10: Eighty percent of the patients disagreed with the statement that the nurse clinician needs the doctor's help to manage their anticoagulation, while 18 percent agreed with the statement and two percent were undecided.
- Item 11: The majority of the patients (82 percent) indicated that just talking to the nurse clinician helps them feel better. Ten percent were uncertain and eight percent disagreed.
- Item 12: Most of the patients (92 percent) felt that it was easy to come to the clinic during clinic hours for blood tests. Six percent disagreed and two percent were undecided.
- Item 13: Fifty-eight percent of the patients denied that they would rather have blood drawn and talk to the nurse clinician during the same visit even though it would take longer, while 38 percent felt they would prefer that arrangement. Four percent were uncertain.
- Item 14: Most of the patients (94 percent) stated that the nurse clinician always makes sure they understand what side effects to watch for. Four percent were undecided and two percent disagreed.
- Item 15: Most of the patients (98 percent) disagreed with the statement that the nurse clinician does not listen to them when they talk about what is bothering them, while two percent were undecided.

- Item 16: Ninety-eight percent of the patients indicated that the nurse clinician explains the results of the blood tests. Two percent were undecided on this point.
- Item 17: The majority of patients (78 percent) felt the nurse clinician can manage anticoagulation therapy without the doctor's help, while 14 percent disagreed and eight percent were undecided.
- Item 18: Most of the patients (94 percent) disagreed with the statement that the nurse clinician does not order the right dose of medication. Four percent were uncertain and two percent agreed with the statement.
- Item 19: Ninety-six percent of the patients felt the nurse clinician orders the right number of blood tests, while two percent disagreed and two percent were undecided.
- Item 20: Most of the patients (96 percent) denied that the nurse clinician does not make sure they understand the new schedule when the medication is changed, while two percent agreed with the statement and two percent were undecided.
- Item 21: Most of the patients (98 percent) disagreed with the statement that the nurse clinician does not know the right questions to ask to find out if they are having problems. Only two percent were uncertain.
- Item 22: Eighty percent of the patients denied that they wish the nurse clinician would help them to understand more about the results of the blood test. Fourteen percent agreed with the statement and six percent were undecided.
- Item 23: Most of the patients (98 percent) felt that the nurse clinician seems to know what she is doing, while only two percent felt that she did not.
- Item 24: A majority of the patients (92 percent) believed that the nurse clinician helps them out when they tell her about problems not involving anticoagulation therapy, while eight percent were undecided.
- Item 25: Most of the patients (98 percent) indicated that the nurse clinician makes sure they understand the new schedule when the medication is changed. Only two percent stated that the nurse clinician did not.

- Item 26: Almost all (98 percent) of the patients denied that they do not get the care they need because of the way the clinic is set up. Two percent were undecided.
- Item 27: Ninety-six percent of the patients denied that the nurse clinician does not order the right number of blood tests, while two percent agreed and two percent were uncertain.
- Item 28: A majority of the patients (74 percent) disagreed with the statement that the pamphlet on anticoagulation therapy is too hard to understand. Twenty-six percent were uncertain.
- Item 29: Most of the patients (98 percent) indicated that the clinic is set up to make it as easy as possible for them to get the care they need. Only two percent disagreed with the statement.
- Item 30: Ninety-eight percent of the patients denied that it is hard to understand what the nurse clinician is talking about, while only two percent agreed.
- Item 31: Most of the patients (98 percent) disagreed with the statement that the nurse clinician could be more friendly than she is, while only two percent agreed.
- Item 32: Ninety-two percent of the patients preferred having the nurse clinician call them with the results of the blood test rather than waiting at the clinic. Six percent were undecided and two percent disagreed.
- Item 33: Ninety-eight percent of the patients agreed that the nurse clinician explains things so that they can understand, while two percent were uncertain.
- Item 34: A majority of the patients (88 percent) felt that the nurse clinician is easy to reach when a problem comes up. Ten percent were uncertain and two percent disagreed.
- Item 35: Ninety-six percent of the patients believed that the nurse clinician really cares about them, while four percent were undecided.
- Item 36: Most of the patients (93 percent) felt that the nurse clinician orders just the right dose of medication, while six percent were uncertain and two percent disagreed.

- Item 37: Eighty-four percent of the patients denied that the clinic is so busy that the nurse clinician always seems rushed. Ten percent were uncertain and six percent disagreed.
- Item 38: Most of the patients (94 percent) denied that it does not seem to do any good when they tell the nurse clinician about problems not involving anticoagulation therapy, while six percent were undecided.
- Item 39: Over half (74 percent) of the patients felt that the pamphlet on anticoagulation therapy is easy to understand, while 26 percent were uncertain.
- Item 40: Ninety percent of the patients disagreed with the statement that it is hard to reach a nurse clinician when a problem comes up. Six percent were undecided and four percent agreed.

The distribution of scores for each of the 40 items in the Patient Satisfaction Questionnaire are summarized in Table 9.

#### Subscale Responses

The analysis of the component areas of the Patient Satisfaction Questionnaire focused on the satisfaction scores for each of the four subscales: Competence of the Nurse Clinician, Provision of Patient Education, Personal Attributes of the Nurse Clinician, and Convenience of the Clinic Design. The scores for the subscales were derived by calculating the arithmetic mean of the values assigned to the respondents' choices. Appendix G lists which items are found in each subscale as well as indicating whether each item had a positive or negative sentiment. The range of possible satisfaction scores was (-2) to (+2). A negative score reflected patient dissatisfaction with the services received in the nurse directed anticoagulation clinic, while a positive

Table 9. Percent Distribution of Item Responses on the Patient Satisfaction Questionnaire

Item	Percent of Responses Selected*					Total
	SA	A	U	D	SD	
1	68	30	2	0	0	100
2	80	20	0	0	0	100
3	4	8	0	42	46	100
4	56	32	8	2	2	100
5	2	0	4	50	44	100
6	4	2	14	38	42	100
7	0	0	2	26	72	100
8	62	34	2	2	0	100
9	0	0	0	34	66	100
10	8	10	2	32	48	100
11	42	40	10	6	2	100
12	38	54	2	2	4	100
13	10	28	4	28	30	100
14	54	40	4	2	0	100
15	0	0	2	38	60	100
16	58	40	2	0	0	100
17	42	36	8	6	8	100
18	0	2	4	40	54	100
19	46	50	2	2	0	100
20	0	2	2	32	64	100
21	0	0	2	40	58	100
22	6	8	6	38	42	100
23	68	30	0	0	2	100
24	48	44	8	0	0	100
25	66	32	0	2	0	100
26	0	0	2	32	66	100
27	2	2	0	40	56	100

Table 9. Continued

Item	Percent of Responses Selected*					Total
	SA	A	U	D	SD	
28	0	0	26	36	38	100
29	58	40	0	2	0	100
30	2	0	0	48	50	100
31	2	0	0	36	62	100
32	62	30	0	6	2	100
33	62	36	2	0	0	100
34	42	46	10	2	0	100
35	50	46	4	0	0	100
36	50	42	6	2	0	100
37	2	4	10	44	40	100
38	0	0	6	46	48	100
39	30	44	26	0	0	100
40	2	2	6	52	38	100

\*SA = Strongly Agree  
A = Agree  
U = Undecided  
D = Disagree  
SD = Strongly Disagree

score denoted satisfaction. The more positive the satisfaction score determined, the higher the level of satisfaction.

Competence of the Nurse Clinician Subscale. Ten of the satisfaction scale items related to the competence of the nurse clinician. These included items 4, 7, 10, 17, 18, 19, 21, 23, 27 and 36. Ten patients had the highest possible score of +2.0. The levels of patient satisfaction in relation to competence of the nurse clinician are shown in Figure 2. The levels of satisfaction for 50 respondents ranged from 0.0 to +2.0 with a mean of 1.398. Seventy-four percent of the scores were in the range of +1.0 to +2.0.

Provision of Patient Education Subscale. Ten of the satisfaction scale items related to the provision of patient education. These included items 3, 14, 16, 20, 22, 25, 28, 30, 33 and 39. Eight patients had the highest possible score of +2.0 in this subscale. The levels of patient satisfaction in relation to provision of patient education are shown in Figure 3. The levels of satisfaction in this category ranged from +0.2 to +2.0 with a mean of +1.362. Seventy-six percent of the scores were in the range of +1.0 to +2.0.

Personal Attributes of the Nurse Clinician Subscale. Ten of the satisfaction scale items were asked to examine patient perceptions regarding personal attributes of the nurse clinician. These included items 2, 6, 8, 9, 11, 15, 24, 31, 35 and 38. Eleven patients had the highest possible score of +2.0 in relation to personal attributes of the

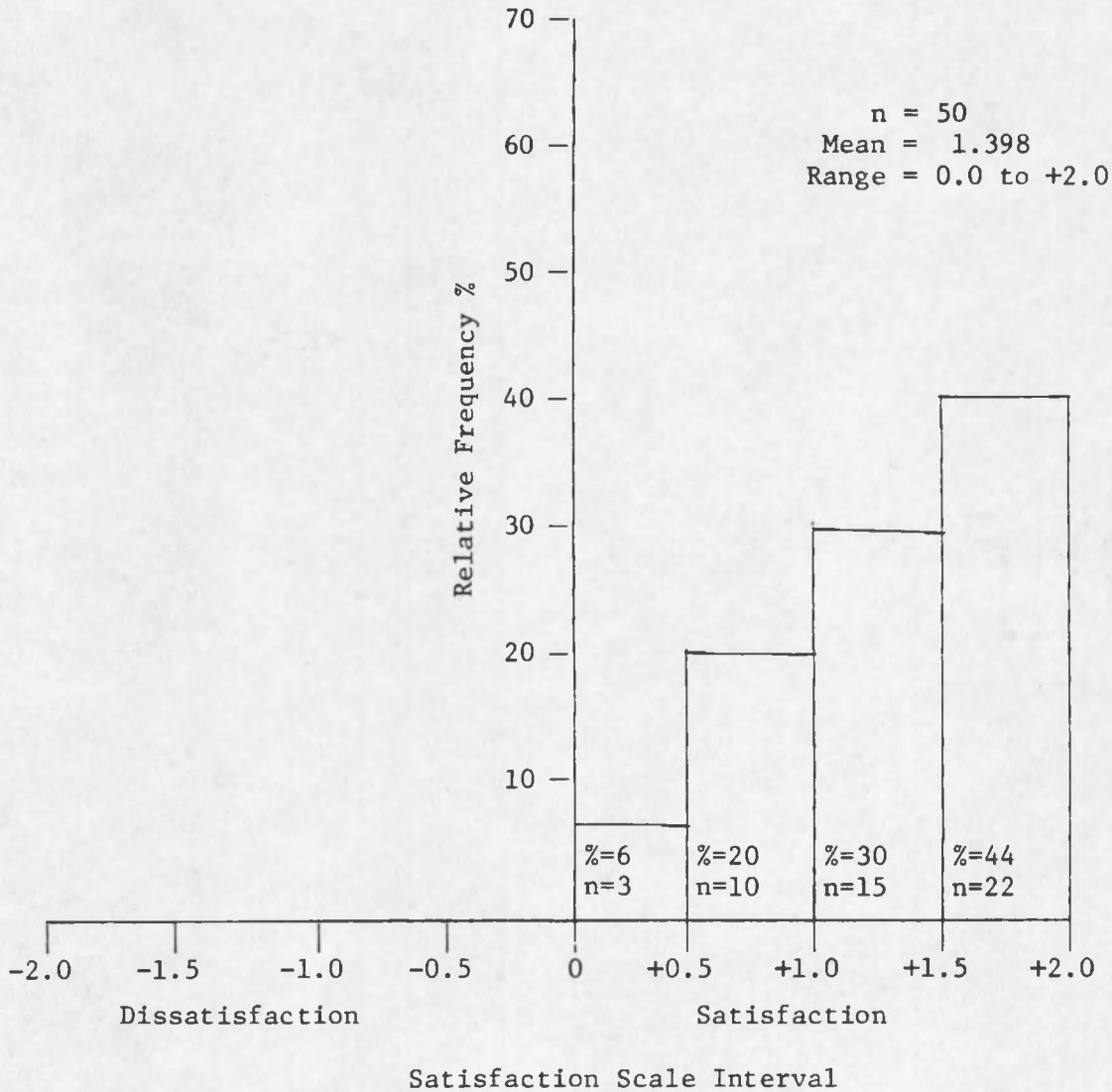


Figure 2. Satisfaction Levels for Competence of the Nurse Clinician



nurse clinician are shown in Figure 4. In this category, the levels of satisfaction for the 50 respondents ranged from +0.3 to +2.0 with a mean of +1.424. Ninety-two percent of the respondents scored within the range of +1.0 to +2.0.

Convenience of the Clinic Design Subscale. Ten of the satisfaction scale items were asked to explore patient satisfaction with the convenience of the clinic design. These included items 1, 5, 12, 13, 26, 29, 32, 34, 37 and 40. Nine patients had the highest possible score of +2.0 in this subscale. The levels of patient satisfaction in relation to convenience of the clinic design are shown in Figure 5. In this category, the levels of satisfaction for the 50 respondents ranged from +0.7 to +2.0 with a mean of +1.288. Sixty-two percent of the scores were in the range of +1.0 to +2.0.

#### Total Scale Response

The analysis of the entire Satisfaction Questionnaire was done by the same procedure utilized with the subscales. All 40 items were considered in the tabulation of the total satisfaction score. The possible range of scores was from -2.0 to +2.0 with a positive score indicating satisfaction. The more positive the score, the higher the level of satisfaction. Three patients had the highest possible score of +2.0 in the total scale. The levels of patient satisfaction in terms of the total scale are shown in Figure 6. The levels of overall satisfaction for the 50 respondents ranged from +0.4 to +2.0 with a







mean of +1.379. Seventy-eight percent of the scores were in the range of +1.0 to +2.0.

In summary, all five of the mean satisfaction scores for the study subjects were on the positive end of the satisfaction scale interval. The high mean satisfaction score was +1.424 for personal attributes of the nurse clinician, followed by +1.398 for competence of the nurse clinician, then +1.379 for overall satisfaction. Satisfaction with provision of patient education was next with a score of +1.362, with convenience of clinic design having the lowest score at +1.288 (Table 10).

#### Intercorrelations

Intercorrelations between the four satisfaction subscale scores and the overall satisfaction scale score were analyzed by the Pearson product-moment correlation coefficient (Ferguson 1976). The correlation coefficients obtained in this analysis are presented in Table 11. All scales correlated positively at the .001 level of significance.

#### Possible Intervening Variables

The variables of age, sex, ethnic origin, number of times the patient telephoned the nurse clinician for problems involving anticoagulation therapy in the last three months, number of times the patient visited the nurse clinician for problems involving anticoagulation therapy in the last three months, number of months of clinic participation, number of prothrombin times drawn in the last three months, number of major bleeding episodes, and number of minor bleeding episodes

Table 10. Overall Satisfaction and Subscale Mean Satisfaction Scores and Range of Scores

	Overall Satisf.	Compe- tence	Personal	Education	Conve- nience
Number	50	50	50	50	50
Mean Score	+1.379	+1.398	+1.424	+1.362	+1.288
Range	+0.4 to +2.0	+0.0 to +2.0	+0.3 to +2.0	+0.2 to +2.0	+0.7 to +2.0

Table 11. Correlation Coefficients between the Satisfaction Subscale Scores and the Overall Satisfaction Scale Scores

Patient Satis- faction Scale	Patient Satisfaction Scale				
	Compe- tence	Education	Personal	Conve- nience	Overall
Competence	1.0000*	.7561*	.7195*	.6592*	.8871*
Education		1.0000*	.7511*	.7009*	.9055*
Personal			1.0000*	.7316*	.8899*
Convenience				1.0000*	.8679*

\*Significant at the .001 level.

were correlated by the Pearson product-moment correlation coefficient with the four mean satisfaction subscale scores and the overall satisfaction scale score. There was a significant negative correlation at the .05 level between age and the Provision of Patient Education subscale score. A significant positive correlation at the .05 level existed between sex and the Convenience of the Clinic Design subscale score. Number of minor bleeding episodes was positively correlated at the .05 level with the scores on the Competence of the Nurse Clinician subscale, the Personal Attributes of the Nurse Clinician subscale, and the Convenience of the Clinic Design subscale, as well as the overall Satisfaction scale score. Number of months of clinic participation was positively correlated at the .05 level of significance with the scores on the Personal Attributes of the Nurse Clinician subscale and the Convenience of the Clinic Design subscale, as well as the overall Satisfaction scale score. No other correlations between patient characteristics and satisfaction scores were found to be significant.

A series of t tests were used to determine any significant differences in the four mean satisfaction subscale scores and the overall Satisfaction scale score between the subjects from Hospital A and those from Hospital B. No significant differences were found between the two groups in terms of subscale or overall satisfaction scores.

#### Reliability Testing

An alpha reliability coefficient (Ferguson (1976) was used to determine internal consistency for each of the satisfaction subscales

and for the overall Satisfaction scale. The alpha reliability coefficients for the four satisfaction subscales and the overall Satisfaction scale is presented in Table 12. The alpha reliability coefficients ranged from .75173 to .94923. The overall Satisfaction scale proved to have the highest alpha reliability coefficient of .94923.

Correlations were done between the group of items with a negative sentiment and the group of items with a positive sentiment in terms of scores. The group of 20 positive items were positively correlated with the group of negative items with a correlation coefficient of .7577, which was significant at the .001 level. Correlations were also done between the scores on parallel forms of individual questionnaire items. The correlation coefficients for parallel forms of the same content item are presented in Table 13. Correlation coefficients for 16 out of the 20 parallel form pairings were significant at less than the .05 level. Correlation coefficients for 11 out of the 20 parallel form pairings were significant at the .001 level.

Table 12. Alpha Reliability Coefficients for the Satisfaction Subscales and the Overall Satisfaction Scale

Satisfaction Scale	Alpha Reliability Coefficient
Competence	.83908
Education	.85467
Personal	.82768
Convenience	.75173
Overall Satisfaction	.94923

Table 13. Correlation Coefficients for Parallel Forms of Scale Items

Parallel Items	Correlation Coefficient
1, 37	.2034
2, 31	.0430
3, 14	.4501 <sup>c</sup>
4, 21	.3164 <sup>a</sup>
5, 12	.0485
6, 11	.2133
7, 23	.3654 <sup>b</sup>
8, 15	.5161 <sup>c</sup>
9, 35	.5025 <sup>c</sup>
10, 17	.6377 <sup>c</sup>
13, 32	.2798 <sup>a</sup>
16, 22	.2725 <sup>a</sup>
18, 36	.4225 <sup>c</sup>
19, 27	.3568 <sup>b</sup>
20, 25	.8457 <sup>c</sup>
24, 28	.6608 <sup>c</sup>
26, 29	.6159 <sup>c</sup>
38, 39	.9394 <sup>c</sup>
30, 33	.4769 <sup>c</sup>
34, 40	.5118 <sup>c</sup>

<sup>a</sup>Significant at the .05 level

<sup>b</sup>Significant at the .01 level

<sup>c</sup>Significant at the .001 level

## CHAPTER 5

### DISCUSSION OF FINDINGS

Interpretation of the results of this study and the relationship of the findings to the conceptual framework and the review of literature are found in this chapter. Possibilities of bias and reliability testing of the instrument are also addressed. Conclusions and recommendations for further study are made based upon the interpretation of the findings.

#### Interpretation of the Results

The mean age of the subjects was 60.4 years with 39 (78 percent) of the subjects being males. These data are consistent with the cardiovascular nature of the indications for anticoagulation therapy seen in this study since arteriosclerotic cardiovascular disease often results from the aging process (Fox and Robins 1978).

This study utilized a Likert type questionnaire with four component areas which were divided into subscales: Competence of the Nurse Clinician, Provision of Patient Education, Personal Attributes of the Nurse Clinician, and Convenience of the Clinic Design. An overall satisfaction score was determined by establishing the mean score for the total 40 scale items. Responses indicating a positive attitude were scored greater than zero and responses indicating a negative attitude yielded negative scores. Satisfaction was operationally defined

in this study as a score greater than zero and the more positive the score, the higher the level of satisfaction. The maximum mean score was +2.0 in this study. The score on the overall Satisfaction scale was +1.379 indicating a high level of satisfaction. The range of scores for the subscales was +1.288 to +1.424 also indicating a high level of satisfaction in all these areas. The highest satisfaction level among the component areas was found in the area of personal attributes of the nurse clinician (+1.424). The next highest score was found in the area of competence of the nurse clinician (+1.398), followed by the score for the overall Satisfaction scale (+1.379), then next in the area of provision of patient education (+1.362). The lowest satisfaction score was found in the subscale related to convenience of the clinic design (+1.288).

#### Findings in Relation to the Conceptual Framework

Attitude theory served as the basis of the conceptual framework for this study. Krech and Crutchfield (1974, p. 177) defined attitude as "an enduring system of positive and negative evaluations, emotional feelings, and 'pro' or 'con' tendencies with respect to a social object." The formation of an attitude is a result of the interaction between specific stimuli relating to attitudinal objects and certain external influences which modify or influence the manner in which an individual perceives the stimuli.

In this study, the stimuli relating to attitudinal objects were primarily the nurse clinicians managing the anticoagulation clinics

and the services that they provided within this specific area of the health care system. A variety of external influences may have been operating under these circumstances to modify or reinforce patients' perceptions regarding the services they received in the anticoagulation clinic. These may have included previous experiences with nurses functioning in traditional or expanded roles or with other health care professionals, previous experiences with the total health care delivery system within which they sought care, observations of other patient interactions with the nurse clinicians, or advice or opinions solicited from significant others.

The positive satisfaction scores seen in all the subscales and the overall satisfaction scale can be attributed to the formation of a positive attitude. The Personal Attributes of the Nurse Clinician subscale revealed the most positive satisfaction score. This scale assessed the feelings of the patient regarding the interpersonal communication between the patient and the nurse clinician. The initial encounter with the nurse clinician, on which the interpersonal relationship was founded, may have established a positive attitude which was reinforced during the ensuing therapeutic period. This positive attitude may have influenced the attitudes regarding the feelings assessed in the other subscales. Many patients seemed to demonstrate loyalty to the nurse clinician. For example, several patients responded to statements in a positive manner even though they stated that they had not personally encountered that particular behavior in the nurse clinician.

This general positive attitude seemed to enable patients to give the benefit of the doubt to the nurse clinician regarding some of the statements in the questionnaire.

The reliability testing of the instrument reinforced the notion that attitudes regarding one aspect of care are difficult to isolate from other aspects. Intercorrelations between the subscales revealed correlation coefficients ranging from .6592 (Competence and Convenience) to .7561 (Competence and Education) which were all significant at the .001 level. This suggests multicollinearity and decreases the possibility of drawing conclusions about differences in the scores on the subscales. In this study, positive attitudes and feelings of satisfaction regarding the services received in the anticoagulation clinic appeared to diffuse throughout the component areas of satisfaction as identified by the subscales.

Attempts to measure external influences on the formation of attitude via the isolation of influencing variables revealed little information. The negative correlation between age and the score on the Provision of Patient Education subscale was probably due to the need for increased reinforcement as a requirement for learning during old age. Twenty-nine (58 percent) of the patients were more than 60 years of age as demonstrated by the median age of 61.7 years in this study. The number of minor bleeding episodes was positively correlated with the scores on the Competence of the Nurse Clinician subscale, the Personal Attributes of the Nurse Clinician subscale, the Convenience of the Clinic Design subscale, and the overall Satisfaction scale score.

Episodes of minor bleeding may have increased the time of interaction between patient and nurse clinician during each telephone call or visit and provided the patient with more attitudinal stimuli. The increase in attitudinal stimuli may have enhanced or reinforced the patient's positive attitude toward the services received in the anticoagulation clinic.

The number of months of clinic participation was positively correlated at the .05 level of significance with the scores on the Personal Attributes of the Nurse Clinician subscale and the convenience of the Clinic Design subscale, as well as the overall Satisfaction scale score. Those patients who had participated in the clinic for a longer period had more time to develop a relationship with the nurse clinician and to learn how to best utilize what the nurse clinician had to offer within the framework of the clinic design.

#### Findings in Relation to the Literature Review

The results of this study indicating that patients are satisfied with specialized services provided by a nurse practicing in an expanded role is supported by other similar studies in the literature (Pergrin 1974; Wagener and Carter 1978; Soghikian 1978; Stromberg and Bourque-Nord 1979). Identified areas of satisfaction common to those found in this study are competence, thoroughness, explanations given, helpful advice and caring attitudes.

Pergrin (1974) adapted a tool developed by Hulka et al. (1970) which consisted of three component areas: professional competence, personal qualities, and cost/convenience. Pergrin assessed satisfaction

levels among patients with diabetes and hypertension and found that scores were highest in terms of satisfaction for the Personal Qualities subscale and next highest for the Cost/Convenience subscale. Satisfaction scores were lowest in the professional competence area. Overall satisfaction with the care received from the nurse practitioner was high. The results of this study paralleled the Pergrin study only in respect to the top ranking of the scale related to personal qualities.

Results of this study are similar to those found by Robinson (1976) who utilized Pergrin's tool to assess satisfaction with care given to patients in two Air Force ambulatory care clinics. Overall satisfaction with the nurse practitioner was high as well as the subscale components of professional competence and personal qualities. Satisfaction with convenience was significantly lower than scores in the other two areas. Robinson also reported that as age increased, satisfaction decreased in the area of professional competence and in overall satisfaction. This negative correlation between age and satisfaction in the area of professional competence and in overall satisfaction was not evidenced in this study, although a negative correlation did exist between age and the area of provision of patient education.

Nelson (1979) also utilized the Pergrin tool in a Health Maintenance Organization setting employing three family nurse practitioners. In a sample of 30 subjects, professional competence had the highest mean score, with cost/convenience the next highest and personal qualities the lowest. All component areas had a positive value indicating satisfaction. The overall satisfaction score was also positive. Nelson

suggested that the mean age of the sample, 30.7 years, accounted for the results of the satisfaction score in the area of personal qualities. She submitted that these clients had acute rather than chronic illness and valued the personal qualities of the nurse less than a patient who required chronic care. The opposite might be suggested for this study sample since the mean age was 60.4 years and the nature of the health problems required chronic care. The personal attributes subscale received the highest satisfaction score in this study.

Although the score for the Convenience of the Clinic Design subscale was in the positive range in this study, it was found to be the lowest among the subscale scores. Even though patients may have found the design convenient in terms of the minimal time required to receive anticoagulation services, the need for personal contact with the health care provider may have been important for the population served in the clinic. If older people indicated higher levels of satisfaction when considering the personal attributes of the nurse clinician, they may have also preferred that the nurse see them personally during each visit and be more available to them even though the service may have been less convenient.

#### Introduction of Bias

The Patient Satisfaction Questionnaire utilized in this study was developed in order to measure satisfaction levels specifically in regard to the services received in the two anticoagulation clinics. In order to establish content validity and ensure that the entire domain of

services provided in the anticoagulation clinic was addressed in the questionnaire, the nurse clinicians were asked to review a copy of the questionnaire approximately one month prior to data collection. Each nurse clinician spent not more than five minutes reviewing the questionnaire and did not retain a copy. The possibility exists, however, that their behavior toward the patients may have changed in view of the statements on the questionnaire. Since only patients who had attended the clinic for more than four months were included in the study, it is unlikely that a recent behavioral change on the part of the nurse clinician would significantly alter attitudes. The possibility of this bias does exist, however.

In addition, the subjects from Hospital A were not obtained randomly. The nurse clinician provided a list of patients who were to participate in another study and would be coming to the hospital at a given time and another list of patients who were due to come to the hospital soon to have prothrombin times drawn. Patients were then contacted by telephone or in person by the investigator. The possibility of bias is great since the patient's names were referred to the investigator by the nurse clinician. The patients at Hospital B were contacted at the clinic upon arrival for blood tests and no bias existed during that period of data collection. Although no significant differences existed between satisfaction scores of the two groups, the possibility of bias in terms of subject recruitment is present.

### Reliability Testing of the Instrument

An alpha reliability coefficient for the overall Satisfaction scale was noted to be high at .94923. The alpha reliability coefficients were also high on all of the subscales with a range of .75173 to .85467. The high coefficients indicate internal consistency within the scale. The high Pearson product-moment correlation coefficients between the subscale scores reveal, however, that multicollinearity existed and limited the possibilities of making assumptions regarding the individual subscales.

The parallel forms reliability testing demonstrated a high degree of reliability as evidenced by a correlation coefficient of .7577 between the scores on the group of positive items and the scores on the group of negative items. Sixteen out of the 20 paired parallel forms were correlated significantly at less than the .05 level. In summary, the questionnaire appeared to be internally consistent during this initial testing of 50 subjects.

Use of the tool while collecting data yielded observations regarding its design. The older age of most of the subjects was a factor not anticipated. The Likert type design was difficult for some of the subjects. Many subjects wanted to agree with every statement, feeling as though it was the most positive response, even though the statement may have been negatively worded. In addition, the form of some of the negatively worded statements may have been more easily understood if the key negative word had been underlined. The questionnaire was difficult to read for some of the subjects due to the small print and, perhaps,

poor eyesight. Eight of the subjects had experienced cerebral vascular accidents which left several of these subjects with motor deficiencies making completion of the questionnaire difficult.

### Conclusions

Satisfaction levels were high among these 50 study subjects in relation to services received in the nurse directed anticoagulation clinics. Although multicollinearity among the subscales limited generalizability of the results in terms of component areas, this study sample was most satisfied with personal attributes of the nurse clinician and least satisfied with convenience of the clinic design. All of the satisfaction scores were in the positive range indicating a high level of satisfaction.

### Recommendations

Based on the findings of this study, the following recommendations for further research were made:

- 1) Using an exploratory design, investigate the factors contributing to the development of positive attitudes regarding health care delivery.
- 2) Investigate the effect of age on level of satisfaction related to the provision of health care.
- 3) Revise the scale and further test the instrument for reliability and validity.
- 4) Conduct an investigation to determine which type of clinic design patients find most satisfactory.

The following recommendations for nursing practice were made on the basis of the results of this study:

1) Initiate the type of clinic design described in this study in other types of outpatient clinic services.

2) Increased attention should be paid to the special needs of the elderly in terms of meeting health care needs.

3) Nurses should be utilized in delivering primary care in a variety of specialized clinics, such as ones serving patients with diabetes, hypertension, renal disease, among many others.

## CHAPTER 6

### SUMMARY

The study was designed to answer the following question: "What is the level of satisfaction with the services received in nurse directed anticoagulation clinics?"

The purpose of this study was to determine the levels of satisfaction and relate them to specified patient characteristics to determine any effect of the variables on satisfaction levels. Data were collected utilizing three instruments: The Patient Satisfaction Questionnaire, The Patient Characteristics Questionnaire, and Chart Review. The Patient Satisfaction Questionnaire consisted of four component areas, or subscales: Competence of the Nurse Clinician, Provision of Patient Education, Personal Attributes of the Nurse Clinician, and Convenience of the Clinic Design. The Patient Characteristics Questionnaire and the Chart Review were designed to elicit information concerning certain patient characteristics.

The conceptual framework for this study is based on the relationship between attitudes and satisfaction. Formation of a positive attitude, which leads to satisfaction, is dependent upon the stimuli regarding an attitudinal object that one receives and the external influences that modify one's perceptions of the stimuli. Attitude is a complex concept that involves both thought and action. An attitude is not easily changed and has a great impact on many facets of one's life.

Exploration of patient's attitudes toward the provision or providers of health care will enhance the health care professional's knowledge regarding what the consumer desires and will thus improve the consumer's perceptions about the services rendered.

The review of literature revealed that consumers are both accepting of the services that a nurse can provide as a primary health care provider and satisfied with the services that have been provided. Nurses have been practicing in areas offering specialized kinds of services as well as more general practices. A focus on the patient who requires anticoagulation therapy is becoming increasingly more evident in the literature.

Fifty subjects participated in this study. Twenty five subjects were obtained from each of the two clinics studied. The mean age of the subjects was 60.4 years with 39 (78 percent) being males. Forty seven (94 percent) of the subjects were Anglo and three (6 percent) were Mexican-American. The length of participation in the clinic ranged from four to 47 months with a mean of 25.0 months.

Scoring for the Satisfaction scale was accomplished by determining a mean score for each subscale and mean score for the total scale. The possible range for scores was (-2) to (+2) with positive scores representing satisfaction and negative scores representing dissatisfaction. The more positive the score, the higher the level of satisfaction. The results of the study revealed positive scores for the overall Satisfaction scale and for each of the four subscales indicating satisfaction in all areas. Personal attributes had the highest mean score (+1.424).

Competence was the next highest scoring (+1.398), followed by the score for overall satisfaction (+1.379). The score for the area of provision of patient education was +1.362. The component area relating to the convenience of the clinic design had the lowest score (+1.288), although even this score indicated satisfaction. This data analysis answered the question regarding the level of satisfaction with the services received in the nurse directed anticoagulation clinic.

The data concerning patient characteristics were then analyzed to determine if any positive relationships were present. Among the variables tested using the Pearson product-moment correlation coefficient, four out of nine were found to be correlated significantly at the 0.5 level. Age was negatively correlated with the score on the Provision of Patient Education subscale. Sex was correlated with the Convenience of the Clinic Design subscale score. The number of minor bleeding episodes was correlated with the scores on the Competence subscale, the Personal Attributes subscale, and the Convenience subscale, as well as with the score for overall satisfaction. The number of months of clinic participation was positively correlated at the .05 level of significance with the scores on the Personal Attributes of the Nurse Clinician subscale and the Convenience of the Clinic Design subscale, as well as the overall Satisfaction scale score.

Intercorrelations of the subscales with each other and with the score for overall satisfaction were all significant at the 0.001 level. Alpha correlation coefficients revealed internal consistency of the tool. Parallel forms reliability testing revealed a significant correlation

coefficient at the .001 level for the scores on all positive items when correlated with the scores on all the negative items. Item to item parallel forms correlations showed significant correlation coefficients (0.5) for 16 out of the 20 paired items. This study demonstrated a high level of satisfaction with the services received in two nurse directed anticoagulation clinics.

APPENDIX A

HUMAN SUBJECTS COMMITTEE APPROVAL



THE UNIVERSITY OF ARIZONA

TUCSON, ARIZONA 85724

HUMAN SUBJECTS COMMITTEE  
ARIZONA HEALTH SCIENCES CENTER 2305

TELEPHONE: 626-6721 OR 626-7575

October 11, 1979

Ms. Rebecca S. Cain  
207 North Wilmot Road #403  
Tucson, Arizona 85711

Dear Ms. Cain:

We have reviewed your proposal entitled, "Patient Satisfaction with a Nurse Directed Anticoagulation Clinic," which was submitted to the Human Subjects Committee and concur with the College Review Committee's examination and recommendations of this minimal risk project. Therefore, approval is granted effective October 11, 1979.

Approval is granted with the understanding that no changes will be made in the procedures followed or the questionnaire used (copies of which we have on file) without the knowledge and approval of the Human Subjects Committee and the College Review Committee. Any physical or psychological harm to any subject must also be reported to each committee.

Sincerely yours,

*Milan Novak*

Milan Novak, M.D., Ph.D.  
Chairman  
Human Subjects Committee

MN:pd

xc: Ada Sue Hinshaw, Ph.D.  
College Review Committee  
College of Nursing

Stanton Axline, M.D.  
ACOS For Research #151  
Veterans Administration

## APPENDIX B

### DISCLAIMER

#### TO WHOM IT MAY CONCERN:

This questionnaire is part of a study entitled "Patient Satisfaction with a Nurse Directed Anticoagulation Clinic." The purpose of this study is to collect information about the feelings of patients who attend the anticoagulation clinic. The information gathered will help to increase nurses' knowledge about patients' attitudes toward nurse clinicians practicing in specialized roles. In addition, the information gained may help to improve the services rendered to you in this anticoagulation clinic.

You are being asked to voluntarily participate in this study. Completion of this questionnaire indicates your consent and willingness to participate in this study. There are no costs or risks to you for participation. You are asked only to fill out the questionnaire which will take about 20 minutes of your time. The investigator will be present when you fill out the questionnaire to answer any questions that you may have. You may withdraw from the study at any time without incurring any ill will.

All information will be kept strictly confidential. Your name will be known only to the investigator directly responsible for this study. Your responses will be grouped with the responses of other patients in this clinic. In the event that results of this study are published, you can be assured that you will never be identified by name. A summary of the results of this study will be provided by me upon request.

If you have any questions regarding this study, please feel free to contact the investigator at the address below. Thank you for your participation in this study.

Rebecca S. Cain, R.N., B.S.N.  
College of Nursing  
The University of Arizona  
Tucson, Arizona 85721  
626-6154

APPENDIX C

THE SATISFACTION QUESTIONNAIRE

I.D. \_\_\_\_\_

Questionnaire Instructions:

This questionnaire contains a number of statements about the services received in the anticoagulation clinic managed by nurse clinicians. You are asked to indicate what you personally think about the clinic and the nurse clinician(s) who manages your anticoagulation therapy.

There are five choices of letters to the right of each statement. Your choices are: SA (Strongly Agree), A (Agree), U (Undecided), D (Disagree), and SD (Strongly Disagree). Please circle the choice representing the word or phrase that best describes your opinion about the services you receive in the anticoagulation clinic. You will find a list at the top of each page to help you remember what the letters stand for.

There are no right or wrong answers. Please ask me about any statements that you don't understand.

Below is an example of the statements you will find in this questionnaire along with the five choices.

"The nurse clinician is good at her job." SA A U D SD

Your responses will be strictly confidential. Please be completely honest.

Thank you for your participation.

SA = Strongly Agree  
 A = Agree  
 U = Undecided  
 D = Disagree  
 SD = Strongly Disagree

Statements

- |  |    |   |   |   |    |
|--|----|---|---|---|----|
| 1. The clinic is set up so that the nurse clinician has time to talk to me when I need it.   | SA | A | U | D | SD |
| 2. The nurse clinician is pleasant to be around.   | SA | A | U | D | SD |
| 3. The nurse clinician doesn't always make sure I understand what side effects to watch for. | SA | A | U | D | SD |
| 4. The nurse clinician knows the right questions to ask to find out if I'm having problems.  | SA | A | U | D | SD |
| 5. It's hard to come to the anticoagulation clinic during clinic hours for blood tests.      | SA | A | U | D | SD |
| 6. I never feel better after talking to the nurse clinician.                                 | SA | A | U | D | SD |
| 7. The nurse clinician doesn't seem to know what she is doing.                               | SA | A | U | D | SD |
| 8. The nurse clinician really listens to me.   | SA | A | U | D | SD |
| 9. The nurse clinician doesn't seem to care about me.  | SA | A | U | D | SD |
| 10. The nurse clinician need the doctor's help to manage my anticoagulation.                 | SA | A | U | D | SD |
| 11. Just talking to the nurse clinician always helps me feel better.                         | SA | A | U | D | SD |
| 12. It's easy to come to the clinic during clinic hours for blood tests.                     | SA | A | U | D | SD |

SA = Strongly Agree  
 A = Agree  
 U = Undecided  
 D = Disagree  
 SD = Strongly Disagree

- |     |   |    |   |   |   |    |
|-----|---|----|---|---|---|----|
| 13. | Even though it would take longer, I would rather have my blood drawn and talk to the nurse clinician during the same visit. | SA | A | U | D | SD |
| 14. | The nurse clinician always makes sure I understand the side effects I should watch for.                                     | SA | A | U | D | SD |
| 15. | The nurse clinician doesn't listen to me when I talk about what's bothering me.   | SA | A | U | D | SD |
| 16. | The nurse clinician explains the results of the blood tests.  | SA | A | U | D | SD |
| 17. | The nurse clinician can manage my anticoagulation therapy without the doctor's help.  | SA | A | U | D | SD |
| 18. | The nurse clinician doesn't order the right dose of medication.   | SA | A | U | D | SD |
| 19. | In order to make sure the medication is working, the nurse clinician orders the right number of blood tests.                | SA | A | U | D | SD |
| 20. | When my medication is changed, the nurse clinician doesn't make sure I understand what my medication schedule should be.    | SA | A | U | D | SD |
| 21. | The nurse clinician doesn't know the right questions to ask to find out if I'm having problems with anticoagulation.        | SA | A | U | D | SD |
| 22. | I wish the nurse clinician would help me to understand more about the results of my blood tests.                            | SA | A | U | D | SD |

SA = Strongly Agree  
 A = Agree  
 U = Undecided  
 D = Disagree  
 SD = Strongly Disagree

- |   |    |   |   |   |    |
|---|----|---|---|---|----|
| 23. The nurse clinician seems to know what she is doing.  | SA | A | U | D | SD |
| 24. When I tell the nurse clinician about problems not involving anticoagulation, she helps me out.                             | SA | A | U | D | SD |
| 25. When my medication is changed, the nurse clinician makes sure I understand the new schedule.                                | SA | A | U | D | SD |
| 26. I don't get the care I need because of the way this clinic is set up.   | SA | A | U | D | SD |
| 27. The nurse clinician doesn't order the right number of blood tests.  | SA | A | U | D | SD |
| 28. The pamphlet on anticoagulation is too hard to understand.  | SA | A | U | D | SD |
| 29. This clinic is set up to make it as easy as possible for me to get the care I need.   | SA | A | U | D | SD |
| 30. It's hard to understand what the nurse clinician is talking about.  | SA | A | U | D | SD |
| 31. The nurse clinician could be more friendly than she is.   | SA | A | U | D | SD |
| 32. Having the nurse clinician call me with the results of the blood test is better than waiting for the results at the clinic. | SA | A | U | D | SD |
| 33. The nurse clinician explains things so that I can understand.   | SA | A | U | D | SD |
| 34. The nurse clinician is easy to reach when a problem comes up.   | SA | A | U | D | SD |

SA = Strongly Agree  
A = Agree  
U = Undecided  
D = Disagree  
SD = Strongly Disagree

- |  |    |   |   |   |    |
|--|----|---|---|---|----|
| 35. The nurse clinician really cares about me.   | SA | A | U | D | SD |
| 36. The nurse clinician orders just the right dose of medication.  | SA | A | U | D | SD |
| 37. The clinic is so busy that the nurse clinician always seems rushed.  | SA | A | U | D | SD |
| 38. It doesn't seem to do any good when I tell the nurse clinician about problems not involving anticoagulation. | SA | A | U | D | SD |
| 39. The pamphlet on anticoagulation therapy is easy to understand.   | SA | A | U | D | SD |
| 40. It's hard to reach the nurse clinician when a problem comes up.  | SA | A | U | D | SD |

APPENDIX D

PATIENT CHARACTERISTICS QUESTIONNAIRE

I.D. \_\_\_\_\_

1. What was your age on your last birthday? \_\_\_\_\_
2. What is your sex?      Male \_\_\_\_\_      Female \_\_\_\_\_
3. What is your ethnic origin?
  - Native American \_\_\_\_\_
  - Mexican American \_\_\_\_\_
  - Black \_\_\_\_\_
  - Asian American \_\_\_\_\_
  - Anglo \_\_\_\_\_
  - Other (Please Specify) \_\_\_\_\_
4. How many times have you telephoned the nurse clinician about problems with anticoagulation therapy in the last three months? \_\_\_\_\_
5. How many times have you visited the nurse clinician for problems with anticoagulation therapy in the last three months? \_\_\_\_\_
6. Please list all medications that you are currently taking.

APPENDIX E

CHART REVIEW

I.D. \_\_\_\_\_

1. Date on which participation in the nurse directed anticoagulation clinic began. \_\_\_\_\_
2. How many prothrombin times were drawn in the last three months? \_\_\_\_\_
3. How many episodes of major bleeding have occurred? \_\_\_\_\_  
Nature of each episode.
4. How many episodes of minor bleeding have occurred? \_\_\_\_\_  
Nature of each episode.

APPENDIX F

REPORTED CURRENT PATIENT MEDICATIONS

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Drug Category	Number of Times Reported
Anticoagulants	50
Digitalis Preparations	40
Diuretics	35
Antiarrhythmics	28
Potassium Preparations	18
Nitrates	16
Antihypertensives	11
Sedatives	7
Bronchodilators	5
Antibiotics	3
Antacids	3
Stool Softeners	3
Insulin	2
Analgesics	2
Thyroid Preparations	2

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APPENDIX G

SUBSCALES BY ITEMS AND STATEMENT SENTIMENT

Subscales	Statement Number	Statement Sentiment
Competence of the Nurse Clinician	4	Positive
	7	Negative
	10	Negative
	17	Positive
	18	Negative
	19	Positive
	21	Negative
	23	Positive
	27	Negative
	36	Positive
Provision of Patient Education	3	Negative
	14	Positive
	16	Positive
	20	Negative
	22	Negative
	25	Positive
	28	Negative
	30	Negative
	33	Positive
	39	Positive
Personal Attributes of the Nurse Clinician	2	Positive
	6	Negative
	8	Positive
	9	Negative
	11	Positive
	15	Negative
	24	Positive
	31	Negative
	35	Positive
	38	Negative

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Subscales	Statement Number	Statement Sentiment
Convenience of the Clinic Design	1	Positive
	5	Negative
	12	Positive
	13	Negative
	26	Negative
	29	Positive
	32	Positive
	34	Positive
	37	Negative
	40	Negative

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