Elderly Patient Satisfaction at an Outpatient Clinic

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LOYOLA UNIVERSITY CHICAGO

ELDERLY PATIENT SATISFACTION AT AN OUTPATIENT CLINIC

A THESIS SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
MASTER OF ARTS
DEPARTMENT OF PSYCHOLOGY

BY
DENNIS E. DEW, JR.

CHICAGO, ILLINOIS
JANUARY 1996
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ACKNOWLEDGMENTS

I wish to thank my committee members, Dr. Emil Posavac and Dr. Denise Hynes, for their guidance and invaluable support during the preparation of this manuscript. I am also grateful to Dr. Elly Budiman-Mak, Chief of the General Medicine Clinic, for providing me with the opportunity to use data from her clinic at Hines V.A. Hospital.
ABSTRACT

The components and determinants of patient satisfaction at a Department of Veterans Affairs Medical Center general medicine outpatient clinic were investigated. Surveys containing questions regarding patient satisfaction, use of medical facilities, health status, and demographics were mailed to 750 patients of the clinic, 466 surveys were returned and used for analysis. A factor analysis of the patient satisfaction items revealed a one factor solution. Patients did not differentiate between various aspects of their care at the clinic. A regression analysis revealed patient's role limitations due to physical health negatively influenced satisfaction beyond that accounted for by age, but increased energy level contributed to lower patient satisfaction. Implications for future research are discussed.
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Miscommunication between doctors and patients is an unfortunately common occurrence in the examination room (Epstein, Campbell, Cohen-Cole, McWhinney, & Smilkstein, 1993). In a study of communication between doctors and cancer patients, Chaitchik, Kreitler, Shaked, Schwartz, and Rosin (1992) concluded that "patients and doctors differ in the meaning they assign to information and that patients are conflicted in regard to ... information they want" (p 41.) Similarly, researchers conducting a study involving hypertensive patients stated that poor quality doctor-patient communication is the greatest hindrance to patient compliance with prescribed medical regimens (Clark, 1991).

In a review of 61 studies objectively measuring doctor-patient communication and patient satisfaction (among other variables), Roter, Hall, and Katz (1988) concluded that poor or inadequate communication between doctor and patient can lead to dissatisfaction with medical care. Specifically, the researchers found increased satisfaction among patients whose doctors allowed for a more reciprocal interpersonal relationship characterized by increased listening and information giving by doctors and increased patient self-
expression about medical history. In other words, patients were more satisfied when the doctor abandoned the traditional role of leader for a less dominant role of listener and information provider when conducting medical examinations.

Why does so much miscommunication between doctors and patients occur? The difference in social status and power between doctor and patient is one possible reason doctor-patient communication lacks clarity. Holding M.D. degrees affords physicians a fair degree of power in that they are considered experts in medicine, a field with life or death implications. Along with the power derived from expertise comes the doctor's high social status. Perceiving doctors as being high in status and experts in the field of medicine may cause patients to avoid questioning doctors' medical advice. The patient is merely a "follower" in the medical context and has no place to question the physician's recommendations, and therefore misunderstandings may occur. In the following sections, a theory of power and influence will be used to explain the failures of communication between doctor and patient.

The Power in Interpersonal Relations

Power and influence are components of social interaction. Power is the means used by an agent to influence a target and overcome resistance against the agent's intended effects. Influence is distinct from power in that it is the outcome of exerted power. Power is the
means by which influence occurs (Baron, Graziano, & Stangor, 1991; Raven, 1974). The use of power to influence others occurs at every level of human interaction.

For example, teachers (the agents) influence students (the targets) to study through the norms established by schools and internalized by the students regarding student-teacher relationships, and secondly from the knowledge the teacher holds about the subject being taught (Raven, 1974; Raven & Haley, 1980). Bosses, parents, police, and doctors all influence people in a similar manner. Each type of influencer motivates others to change through the use of norms established by society, and the resources each holds over the target of influence.

Raven and colleagues (1974, 1980) have identified six major types of power. These major types of power can be used together to motivate change in a target. Informational power, the first type, is used by an agent providing information causing the target to cognitively change attitudes and beliefs which in turn leads to the idea that a behavioral change is desirable. However, education may be insufficient to motivate change (Ajzen & Fishbein, 1980). This form of power is derived from the intrinsic nature of the information and not from characteristics of the information provider.

The second and third forms of power, reward and coercion, are complementary. Reward power simply means the
influencing agent has control over resources which the target desires and can provide the target with rewards in return for compliance with the agent's request. Similarly, coercive power stems from the agent's ability to inflict punishment on the target if compliance with the agent's request is not achieved. These rewards and punishments can be material objects such as a raise or pay cut from a boss to intangible things like love or rejection.

The last three forms of social power, referent, legitimate, and expert, rest within the influencing agent, not on the agent's ability to control external factors. Referent power results when a target changes as a result of the desire to be similar to the agent. When a child wants a pair of Air Jordan basketball shoes because Michael Jordan wears them, he is being influenced through referent power.

Legitimate power stems from the target's perception the agent has the right to demand compliance. Military officers are able to command subordinates who are not to question orders. Similarly, police officers are allowed to search a suspect's home when they have just cause and a warrant. Legitimate power is a special case of status coupled with reward and coercive power. Status has been defined as a social value given meaning through agreement by a majority of those in society and the amount of respect received by a person due to role or position (Tedeschi, Schlenker, & Lindskold, 1972).
Finally, expert power is derived from the target's belief in the influencing agent's greater knowledge or superior ability in a relevant domain. A doctor making a diagnosis of hypertension and the afflicted patient then altering his/her diet to reduce salt intake is an example of expert power. The doctor knows more about the functioning of the human body and thus the patient follows the doctor's recommendations. It is the satisfaction with the relationship between doctor and patient which is the focus of this study's efforts.

Doctor-Patient Relationships: An Application of the Theory

One important context in which power is used to influence a person to change behavior is in the doctor-patient interaction. The nature of the doctor-patient relationship has received more attention in recent years and primarily focuses on the doctor's communication style. There are three major styles of doctor-patient relationships identified in the literature. These communication styles rest along a continuum of patient participation and are characterized by the roles each member plays and the type of influence used. In the traditional doctor-patient relationship, the doctor examines the symptoms, makes a diagnosis, and offers medical advice to the patient. In this model, the doctor and patient play complementary roles. The doctor takes a leadership position based on power derived from the status of a medical degree and resources at his or
her disposal, such as blood tests or x-rays. The patient assumes a passive role, accepting at face value the advice and treatment prescribed by the doctor (Meeuwesen, Schaap, van der Staak, 1991). The power the doctor uses comes from expertise. This "expert power" is thought to influence patients and create compliance with medical regimens (Baron et al., 1991).

Another style of doctor-patient interaction also characterized by a complementary relationship between influencer and target is the discrepancy model. In this model, however, the doctor's power is used differently. The doctor maintains the leadership role, but only a portion of that power is used to diagnose the patient's illness. The doctor also uses expert power to maintain his/her institutionalized authority. This model sees the illness as less objective and realizes the psychological impact the physician has on the patient's health. Here the patient is seen as an active negotiator with the doctor in determining the nature of the illness (Meeuwesen et al., 1991). It is thought that this model of doctor-patient interaction is a result of patients becoming more educated and realizing the limitations of doctors' knowledge (Ben-Sira, 1976).

A third interaction style, the patient-centered approach, focuses on the patient as a person with a life history, not solely on the symptoms exhibited by the patient. The interaction is characterized by a dynamic relationship
between doctor and patient. In this approach, the doctor considers the patient's point of view, listening to what the patient has to say about how the illness affects his/her life and not simply attending to the symptoms. This interaction would also include discussion of treatment options allowing the patient choices that will maintain a high quality of life (Epstein et al., 1993; Meeuwesen et al., 1991).

Today, the trend in doctor-patient relations is toward a patient-centered approach. Many researchers and health educators wish to restructure a patient's visit to the doctor. These groups want traditional "medical encounters" characterized by a problem or symptom-oriented approach to improving health to be transformed to "health encounters" where doctors and patients discuss a patient's overall health. This new "health encounter model" would include creating systems or interventions to maintain good health habits and change bad ones. The goal of the health encounter model is to improve a patient's overall health (Haber, 1994).

Satisfaction with the Doctor-Patient Relationship

Part of working towards a patient's better health is maintaining the patient's satisfaction with health care, and a good doctor-patient relationship, like one based on the health encounter model (as opposed to the medical encounter model), can foster patient satisfaction with medical care (Bensing, 1991; Epstein et al., 1993; Roter et al., 1988). Satisfaction with health care has been linked to better
patient outcomes because a satisfied patient is more likely to adhere to a physician's prescribed medical regimen (Hulka, Cassel, Krupper, & Burdette, 1976).

Doctor-patient communication is one way of increasing patient satisfaction. Certain personality characteristics and modes of interaction exhibited by the doctor may increase the chance of a positive health experience with a patient. Clark (1991) found in treating hypertensive patients that certain behaviors demonstrated by doctors improved compliance with antihypertensive therapy. Specifically, doctors conveying an interest and commitment to helping the patient control his/her hypertension by reading the patient's blood pressure every visit and informing the patient that a temporary reduction in blood pressure is not a cure, in combination with educating the patient about blood pressure treatment, including how it relates to the patient's everyday activities, helped patients comply with treatment.

Bertakis (1977) found when doctors performed a simple five minute concluding summary of the visit and asked the patient for feedback, satisfaction and recall of medical information regarding their conditions rose in patients. These two components, satisfaction and recall, are related to increased patient compliance (DiMatteo & DiNicola, 1982).

Of the three doctor-patient communication styles, the patient-centered or discrepancy model seems to elicit the most satisfaction and compliance in patients. Meeuwesen et
al. (1991) suggest that "a more facilitating rather than a domineering conversation style results in greater compliance and satisfaction in patients." Others agree.

Buller and Buller (1987) have operationalized the doctor communication factors leading to increased patient satisfaction. Specifically, physicians allowing enough time for patients to express themselves and showing a sincere interest in the patient's life and current medical problem should lead to higher levels of patient satisfaction.

Monitoring and measuring physician communication styles and patient compliance can be achieved with some effort, but measuring satisfaction remains difficult.

**Why Patient Satisfaction is Important**

Assessing patient satisfaction has been an interest of health care providers and social scientists for decades, although interest has increased in recent years (Aharony & Strasser, 1993; Strasser, Aharony & Greenberger, 1993; Zastowny, Roghmann & Cafferata, 1989). Focusing on patient's thoughts about health care developed from medical administrators' desires to retain patients as customers and increase medical treatment effectiveness. Researchers have demonstrated the relationship between satisfaction and use of health care services (Thomas & Penchansky, 1984), satisfaction and compliance with health care regimens (Aharony & Strasser, 1993; Hulka, Krupper, Daly, Cassel & Schoen, 1975; Hulka, et al., 1976), and satisfaction and
continuance with the same health care provider (Dimatteo, Prince, & Jaranta, 1979). If patients are satisfied, they will not only comply with physicians' medical direction, but will likely continue to use the health care service provider again when they seek medical attention. These two reasons, compliance and continuance, furnish health care providers with reasons to maintain high patient satisfaction. Not only will patients benefit by following their doctor's advice, but the health care provider will profit from loyal customers returning when they need medical care.

Quality assessment programs of health care services, like total quality management, are affected by patient satisfaction levels (Strasser et al., 1993). Understanding patient's views on the care they receive can point out potentially improvable aspects of care. The patients, being consumers, provide important feedback about the quality of the health care product. The need for patient satisfaction with health care is clear when health care services are seen as a product and the patients as consumers--people will consume the product that they find most satisfactory. There is reason to believe patients view health care as a product and include satisfaction with treatment by doctors in rating health care quality (Ware, Wright, Snyder, & Chu, 1975).

Satisfaction with medical care is important because it can affect how well patients comply with doctors' medical advice and thus determine the potential effectiveness of
satisfaction is the interpersonal power relationship between doctor and patient. It is this interpersonal power
relationship which is of interest to this research. In the next sections, how the interpersonal power relationship
between the patient and doctor can affect satisfaction with medical care will be developed.

**Measuring Patient Satisfaction**

Social scientists and practitioners agree that a relationship between patient satisfaction and patient
behavior exists (Aharony & Strasser, 1993; Marshall et al., 1993; Zastowny et al., 1989); however, a standard definition
of patient satisfaction and an accepted measurement instrument has yet to be established. The Patient
Satisfaction Questionnaire (PSQ) (Marshall, Hays, Sherbourne, & Wells, 1993) is a widely used instrument, but is not
intended for use to determine satisfaction within a specific clinic of the larger hospital setting, which is a purpose of
this research.

There are, however, two general methods of measuring patient satisfaction, the unidimensional approach and the
multi-dimensional approach (Marshall et al., 1993; Strasser et al., 1993). The unidimensional measurement approach
assesses global satisfaction with one or more general questions measuring the health care experience as a unit.
This approach can be useful for comparing satisfaction levels between medical care settings because it uses a broad definition of satisfaction.

However, finding that patients are satisfied or dissatisfied with their health care in general does not provide the details necessary to improve the quality of a specific facet of the health care process, such as nursing staff attitudes or doctor's social interaction skills. Multi-dimensional approaches break down the patient's health care experience into components and ask specific questions regarding those components. For example, a unidimensional question might be, "I am well treated by the hospital staff," while a multi-dimensional approach to the same issue would ask a number of more specific questions about treatment by medical staff members, one of which might be: "My doctor treats me like a person, not a set of symptoms." Marshall, Hays, Sherbourne, and Wells (1993) conclude that multiple domain-specific aspects of care exist and can be useful in determining the factors which comprise patient satisfaction, but that a hierarchical model may be more representative of the concept; they say that "patient satisfaction can be simultaneously represented as both an over-arching general domain and a set of discrete dimensions tapping unique aspects of satisfaction" (p. 481).

The research to date has examined various factors contributing to patient satisfaction. Factors such as
utilization of health care services (Zastowny et al., 1989), the dimensions of the interaction with the doctor (Marshall et al., 1993), demographic variables including age, education and gender (Hall, Feldstein, Fretwell, Rowe, & Epstein, 1990), health status (Aharony & Strasser, 1993), and payment plan (Cleary & McNeil, 1988) are all believed to influence patient satisfaction. The findings, however, are equivocal and do not demonstrate consistent effects for any variable across all types of health care experiences. Different researchers ask the same questions about factors affecting satisfaction, but get different answers from their research. Each factor investigated has evidence supporting its effect on satisfaction and evidence supporting no effect.

**Studying Satisfaction in an Elderly Population**

It has been suggested that age is a factor affecting satisfaction with health care (Aharony & Strasser, 1993; Hall et al., 1990; Zastowny et al., 1989). In fact, the percentage of elderly people in the population is growing; between 1989 and the year 2030, the number of people aged 65 and over is projected to double from 11% to 22% of the population, and the percentage of those aged 85 and over is expected to triple. These older adults average nine visits to a physician a year (versus five for those under 65) and their demand for physician care is rising (Haber, 1994). Age alone is not a causal variable in the utilization equation. The elderly seek more medical attention because they are
afflicted with more chronic illness than younger people. With regard to studying the effect of age on patient satisfaction it is the host of variables accompanying age which are of interest to this research.

Ninety percent of older adults live with chronic illnesses, such as diabetes, heart disease, or high blood pressure (Haber, 1994). The reason older people acquire more chronic illnesses can be traced to many sources. Developmental psychologists and biologists have numerous theories on why the human body deteriorates over time. Wear and tear on the system, cumulative and irreversible imbalances in regulatory functions, accumulation of metabolic waste, and cumulative errors in reproducing DNA. No one theory provides all the answers (Kimmel, 1974).

As a person ages, there is a drop in the number of acute illnesses contracted; however, the number of chronic illnesses increases. It is this increase in chronic, incurable illnesses which contributes to people seeking more medical attention during old age (Kimmel, 1974).

The increase in demand for medical attention among the elderly, coupled with medical service providers' need to study patient satisfaction makes an examination of patient satisfaction with medical services among the elderly particularly important. Because the elderly require increased and different types of medical services, it is reasonable to assume they may focus on certain aspects of
care that are different from those aspects the non-elderly might focus on when determining how satisfied they are with the service.

**Interpersonal Power and Satisfaction**

The interpersonal power relationship between doctor and patient can affect satisfaction with medical care, and this relationship has different implications if satisfaction with medical care is a unidimensional concept than it does if satisfaction is a multidimensional concept. Stated differently, one might expect that the interpersonal relationship between doctor and patient will relate to satisfaction differently if it is a unidimensional concept than if satisfaction is a multidimensional concept.

If satisfaction is a multidimensional concept, ratings of physician interpersonal communication style will not have as large of an impact on satisfaction than if satisfaction is a unidimensional concept. The impact is less because the interpersonal relationship is distinct from other variables affecting satisfaction and a low interpersonal rating could be compensated for by a higher rating of doctor technical competence or lower prices.

However, if satisfaction is a unidimensional concept, patients would therefore be unable to distinguish interpersonal relationship variables from doctors' technical competence or knowledge of patient conditions. Research has demonstrated that patients cannot accurately rate a doctor's
technical competence, nor distinguish it from the doctor's interpersonal skills (Ben-Sira, 1976). Therefore, if patients are only able to make reasonable judgments about doctors' interpersonal relationship skills and not medical expertise or cost, those interpersonal ratings may influence judgments about other variables purported to affect satisfaction. Buller and Buller (1987) conducted a satisfaction survey and found patients' ratings of physician communication style accounted for nearly three-quarters of the variance in satisfaction with medical care. Less domineering and more reciprocal physician interaction styles were related to increased satisfaction with medical care.

The purpose of the present research is to determine (a) the degree of similarity between unidimensional and multidimensional constructs used to measure elderly patient satisfaction; (b) how the interpersonal relationship between doctor and patient affects satisfaction levels; (c) if level of physical functioning affects satisfaction with medical care; and (d) how patient utilization of GMC services is related to patient satisfaction.

Specifically, it is hypothesized that (a) patient satisfaction is multidimensional in nature; (b) doctors who communicate better with their patients will have more satisfied patients; and (c) low role limitations due to physical health, high physical functioning, and high energy levels will correlate positively with being satisfied with
medical care and these three variables will account for variance above that accounted for by the patient's age.
Overview of Survey Design

The present study assessing the nature and determinants of patient satisfaction was part of a larger project conducted to assess patient perceptions about care in a general medicine clinic as the organization of physicians at the clinic changed over time. The variables of interest used to test the hypotheses were taken from various sections of the larger survey. It is because the main objective of the larger study was broader in focus than the nature and determinants of patient satisfaction that the measures used in the present research are perhaps less than ideal.

Subjects

The initial sample consisted of 750 randomly selected veterans from the list of 9000 patients who had been scheduled for an appointment at the General Medicine Clinic (GMC) of a large veterans' hospital between January 1, 1994 and June 30, 1994. From this sample 466 (62% of the initial sample) returned the survey to comprise the final sample. Subjects must have had attended the GMC in the past six months and not have a terminal illness. In addition, the subjects could not have been bedridden, nor living in a
nursing home. These restrictions were applied to the sample to allow for a one-year follow-up study. Subjects were predominantly male (96.6%), with a median age of 68.

Measures

A 28-page, 102-item, self-administered mail survey was constructed for the purpose of the larger study. The questionnaire consisted of eight sections: (a) **Access information** tapping past contact with the clinic and ease of access to care, (b) **Medical diagnosis** information for five broad categories of medical conditions, (c) **Attitudes** towards health care received at the GMC, (d) **Medication** taken, (e) number and type of **Doctor and hospital visits**, (f) **Health status** and **social/emotional** functioning, (g) **Prevention** check-ups and medical tests performed, and (h) **Demographic** information.

**Access information.** This section contained ten items assessing the amount and type of telephone contacts with the GMC, if the patient saw the same doctor on every visit to the clinic, the ease with which the patients felt they could travel to the hospital, and whether appointments had been made at other medical centers in the past.

**Medical Diagnosis.** One question asked respondents to circle and list their medical conditions. The five primary response categories, heart condition, arthritis, diabetes, hypertension, and chronic obstructive pulmonary disease, were
chosen because they represented approximately 90% of all medical conditions of patients attending the clinic. The patients were also given a space to include diagnoses not listed.

**Attitudes.** Eleven items assessed patient satisfaction with multiple aspects the care they received at the GMC. These 11 items were used to construct the patient satisfaction scale used in this analysis. Patients were asked to respond to questions tapping the interpersonal skills of the doctors, perceived education and skill of doctors, perceived adequacy of examination, and how well patients felt they were educated about their conditions. In addition to these questions, items tapping length of appointment time, help received from the clinic, and an open ended item for comments about GMC doctors were included.

**Medication.** The number of prescription medications taken by the patient was assessed.

**Doctor and hospital visits.** Ten questions regarding visits to the clinic were used to assess how often patients attend this or any other hospital or clinic, the reasons for attending other medical centers, the wait in the lobby at the GMC, the ease of getting prescriptions filled at the VA pharmacy, the ease of attending the clinic, and the number of years the patient has been attending the clinic.
Health status. The RAND 36-item Health Survey 1.0 was included. This survey measures health status and social/emotional functioning. It was included to measure self-perceived health, pain, activities and feelings and has been determined to be a valid and reliable instrument (Hays, Sherbourne, & Mazel, 1993; Rand Health Sciences Program, 1992).

Prevention. Fourteen questions examined the amount and type of preventive medical procedures (vaccinations, cancer screenings, weight loss counseling, etc.) the patient has had at the GMC, and patient smoking/drinking habits.

Demographics. The final section of the survey consisted of 15 items assessing gender, employment, income, race, marital status, education, difficulty in receiving care, health insurance information, age, height, and weight.

Procedure

The survey was mailed to the 750 patients listed in the initial random sample. The survey packet contained a cover letter from the chief of the clinic to give the survey a sense of importance and validity, instructions regarding how the survey was to be completed, the 21-page survey, and a stamped and addressed return envelope. Four-hundred sixty-six (62%) of the surveys were returned within one and a half months of the initial mailing date. No attempt to elicit more responses was made.
Variables Utilized for Analysis

The research hypotheses cover four major conceptual areas: (a) patient satisfaction; (b) health status, taken from the Rand 36-item Health Survey 1.0; (c) utilization of services; and (d) age. The first of these areas, patient satisfaction, was measured in two different ways. A single-item general satisfaction question was used to tap patient satisfaction levels on a unidimensional level, see Appendix A. Second, an 11-item scale assessing patient attitudes regarding the GMC was used as a multidimensional measure of patient satisfaction. The items from unidimensional and multidimensional patient satisfaction measures were created from concepts gleaned from the patient satisfaction literature. The general topics affecting satisfaction that were formulated into questions were: (a) amount of contact with physician, (b) communication style of provider, (c) patient knowledge of medical condition, and (d) technical competence of providers (Hall et al., 1990; Marshall et al., 1993; Zastowny et al., 1989). The scores from this patient satisfaction measure were summed and divided by the number of items to obtain an overall measure of satisfaction. The 11 items in the patient satisfaction scale are presented in Appendix A.

The second conceptual set of variables used in the analysis are taken from the Rand 36-item Health Survey 1.0. The three subscales used from the survey include physical
functioning (ten items), energy/fatigue (four items), and role limitations due to physical health (four items). This survey has been demonstrated to be a valid and reliable instrument (Hays, Sherbourne, & Mazel, 1993; Rand Health Sciences Program, 1992). A score for each sub-scale is obtained by converting responses to a 0 to 100 scale, summing them, and dividing by the number of items in the scale. The 18 items used for analysis are presented in Appendix B.

The third and fourth sets of variables to be examined are utilization of services and patient age. The question examining patient use of the GMC services appears in Appendix C.
CHAPTER III

PLAN OF ANALYSIS

Hypothesis One: Patient satisfaction is multidimensional in nature.

To address the hypothesis regarding the single or multidimensional nature of patient satisfaction, a factor analysis was performed on the 11 items of the Attitudes section dealing with various aspects of the doctor-patient interaction. A factor analysis is a statistical technique used to determine if coherent independent subsets of variables exist within the framework of a larger set of variables used to measure a construct, like patient satisfaction. Factors, the coherent subsets of variables, are revealed when a set of variables correlate with one another and are simultaneously relatively independent of other subsets of variables within the larger measure. The purpose of this analysis is to describe the patterns of relationships among variables within a measure (Tabachnick & Fidell, 1989).

A factor analysis was chosen to determine if subsets or grouping of items existed within the multidimensional measure of patient satisfaction. It is a common technique for
analyzing the structure of patient satisfaction measures (e.g., Hall et al., 1990; Marshall et al., 1993; Zastowny et al., 1989). A factor will be considered relevant as a sub-scale within the larger patient satisfaction scale if it obtains an eigen value of one or greater, eigen values represent variance accounted for by a factor (Tabachnick & Fidell, 1989). If the factor analysis determines items within the patient satisfaction measure group together into subscales, they will be correlated with the general unidimensional ratings of satisfaction to determine if the two are similar based on a correlation coefficient of .5 or greater.

**Hypothesis Two:** Doctors who communicate better with their patients will have more satisfied patients.

If the factor analysis determines a sub-scale of "doctor-patient interpersonal relationship" variables exists, these items will be used to create a composite "doctor-patient interpersonal relationship" score. This score will be correlated with the general unidimensional ratings using Spearman's correlation coefficient to determine the impact a doctor's communication style can have on patient satisfaction. Spearman's correlation is a statistical technique used to measure the magnitude and direction of linear relationship between two variables which are at least ordinal in nature (McCall, 1990). Spearman's correlation coefficient was chosen because the patient satisfaction score
is not interval level data and thus does not meet the underlying assumptions of the Pearson’s correlation coefficient. The decision criteria set to determine a substantially relevant relationship between the doctor communication style sub-scale and the unidimensional measure of patient satisfaction is a .5 Spearman’s correlation. **Hypothesis Three:** Low role limitations due to physical health, high physical functioning, and high energy levels will correlate positively with being satisfied with medical care controlling for patient age.

The data from the SF-36 was used to assess whether physical functioning, role limitations due to physical health, and energy levels were related to satisfaction. Age will be a covariate in this analysis to determine if older age or variables accompanying old age (i.e. low physical functioning) affect satisfaction with medical care. A multiple regression analysis will be used to estimate the effect functioning had on satisfaction when holding age constant. Multiple regression is a statistical technique used to estimate the average linear relationship between one dependent variable (DV) and two or more independent variables (IVs). Multiple regression can also be used to predict the value of the DV from the values of the IVs by computing regression coefficients used to weight the value of the IVs relative to their contribution to the total variance accounted for in the DV. Multiple regression tells the
researcher the nature of the linear relationship between the DV and the IVs (Stevens, 1992).

Hypothesis three will be supported if the correlation coefficient between the three health variables and satisfaction is significant at the \( p \leq .05 \) level, and if the three health variables account for variance in satisfaction beyond that accounted for by age at the \( p \leq .05 \) level of significance.

A Spearman's correlation was used to determine if patient utilization of the GMC was related to patient satisfaction as defined by the 11-item satisfaction scale.
CHAPTER IV
RESULTS

Dimensions of Patient Satisfaction

As a precursor to the factor analysis of the patient satisfaction scale, the means and standard deviation and the percentage of ratings falling into the two most favorable response categories (out of a possible four) were calculated. These descriptive statistics are presented in Table 1. The mean scores and percentages calculated revealed the majority of responses to the patient satisfaction items fell into the "very much agree" or "somewhat agree" categories. The distribution of scores is obviously negatively skewed.

Keeping in mind the skewed distribution of patient satisfaction responses, a factor analysis with varimax rotation was performed with SPSS for the mainframe on the 11 items from the multidimensional patient satisfaction measure. The varimax rotation procedure simplifies factors by appropriating variance from low factor loadings and dispersing it across high factor loadings. Higher loading factors become higher and lower loading factors become lower. Varimax rotation simplifies factors by maximizing the variance of high loading factors (Tabachnick & Fidell, 1989).
This analysis revealed a unidimensional scale. An eigenvalue cutoff score of 1.0 was set for accepting factors as valid groupings of items (Tabachnick & Fidell, 1989). All items loaded on one factor having an eigenvalue of 6.225 accounting for 56.6% of explained variance. The remaining factors had eigenvalues of less than one.

Analyzing the relationship between satisfaction items through Spearman's correlation coefficient revealed the lowest correlation between any two items on the scale was .289, most fell in the .50 to .60 correlation range. The Bartlett test of sphericity demonstrated all eleven items were highly correlated with one another ($p < .0001$). Therefore, the multidimensional nature of patient satisfaction was not supported. The Bartlett test of sphericity tests the hypothesis that factor analysis correlation matrix is an identity matrix, that all correlations are zero between factors, and that there are no factors (Tabachnick & Fidell, 1989).

Following the example of Hall et al. (1990) the data from the patient satisfaction measure were transformed by dichotomizing the scale. The two most positive response categories were grouped together and the remaining three response categories were grouped together. The transformed responses were then entered in a factor analysis using
### Table 1

Descriptive Statistics for the Patient Satisfaction Items

<table>
<thead>
<tr>
<th>Item Numbers, Abbreviated Content and</th>
<th>Number Responding</th>
<th>M&lt;sup&gt;a&lt;/sup&gt;</th>
<th>SD</th>
<th>N</th>
<th>% of Responses in Two most Favorable Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. General</td>
<td></td>
<td></td>
<td></td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>General satisfaction</td>
<td>2.00</td>
<td>.77</td>
<td></td>
<td>450</td>
<td>81.8</td>
</tr>
<tr>
<td>13. As much as can be expected</td>
<td>1.72</td>
<td>.91</td>
<td></td>
<td>451</td>
<td>89.6</td>
</tr>
<tr>
<td>14. Cares about me</td>
<td>1.70</td>
<td>.99</td>
<td></td>
<td>450</td>
<td>89.1</td>
</tr>
<tr>
<td>15. High quality care</td>
<td>1.67</td>
<td>.93</td>
<td></td>
<td>452</td>
<td>88.6</td>
</tr>
<tr>
<td>16. Good bedside</td>
<td></td>
<td></td>
<td></td>
<td>436</td>
<td></td>
</tr>
<tr>
<td>manner</td>
<td>2.00</td>
<td>1.38</td>
<td></td>
<td>436</td>
<td>80.7</td>
</tr>
<tr>
<td>17. Medical needs met</td>
<td>1.70</td>
<td>1.01</td>
<td></td>
<td>449</td>
<td>89.1</td>
</tr>
<tr>
<td>18. Understands needs</td>
<td>1.82</td>
<td>1.11</td>
<td></td>
<td>446</td>
<td>86.1</td>
</tr>
<tr>
<td>19. Doctor is skilled</td>
<td>1.97</td>
<td>1.30</td>
<td></td>
<td>446</td>
<td>81.0</td>
</tr>
<tr>
<td>20. I am educated</td>
<td>1.83</td>
<td>.98</td>
<td></td>
<td>457</td>
<td>86.1</td>
</tr>
<tr>
<td>21. Doctor listens</td>
<td></td>
<td></td>
<td></td>
<td>454</td>
<td></td>
</tr>
<tr>
<td>to me</td>
<td>1.55</td>
<td>.84</td>
<td></td>
<td>454</td>
<td>92.3</td>
</tr>
<tr>
<td>22. Examination time</td>
<td>1.91</td>
<td>1.09</td>
<td></td>
<td>456</td>
<td>79.7</td>
</tr>
<tr>
<td>23. Treat conditions</td>
<td>1.72</td>
<td>.98</td>
<td></td>
<td>456</td>
<td>85.8</td>
</tr>
</tbody>
</table>

<sup>a</sup> All items were rated on a 1-4 scale.
varimax rotation. The solution revealed a second factor on which items 20 to 23 loaded.

Factor one had an eigen value of 5.447, accounting for 49.5% of the variance, and factor two had an eigen value of 1.081, accounting for 9.8% of the variance. However, no discernible construct pattern linking the four variables of the second factor was revealed upon examination. In fact, the only common characteristic among the second factor variables was that they were listed on a separate page in the survey from items 11 to 19.

A one factor solution was supported by the factor analysis. Therefore, a correlation between the single hypothesized factor "doctor communication style" and the single item tapping general satisfaction was not appropriate because the patients did not perceive their doctor's communication style as different from the other hypothesized factors. In other words, there was no set of variables within the 11-item patient satisfaction measure which were revealed to index doctor communication style.

Physical and Health Status

To address how physical functioning, energy and physical health status affect satisfaction independent of age, a multiple regression analysis was conducted. Multiple regression was chosen for its ability to hold an independent variable constant and determine if other independent variables account for variance in the dependent variable
above and beyond the variable held constant (Tabachnick & Fidell, 1989).

Table 2 provides means and standard deviations for the variables entered in the regression. Table 3 contains the correlations between all five variables entered into the regression. Table 4 contains results of the regression analysis.

Age was entered on the first step of the analysis, $R^2 = .014$, $F(1,359) = 5.36$, $p < .05$. Age was significantly related to satisfaction; the negative regression coefficient indicates that older patients were less satisfied with medical care. On step two, the physical functioning, role limitations due to physical health, and energy level scores were entered as a block. The variables were entered as a block because no predictions about which variable would account for more variance had been made. Tables 3 and 4 present results for the multiple regression using only observations for which there was complete data for all variables of interest ($N = 360$).

Role limitations due to physical health and energy variables do account for variance in satisfaction above and beyond that accounted for by age. Results indicate that older patients are less satisfied; those with more role limitations due to physical health are less satisfied; those with low energy levels are more satisfied; and that overall physical functioning level had no effect on satisfaction.
Table 2
Means, Standard Deviations, and Sample Size for Multiple Regression Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction\textsuperscript{a}</td>
<td>1.78</td>
<td>.80</td>
<td>360</td>
</tr>
<tr>
<td>Age</td>
<td>66.50</td>
<td>9.77</td>
<td>360</td>
</tr>
<tr>
<td>Physical Functioning\textsuperscript{b}</td>
<td>53.81</td>
<td>29.28</td>
<td>360</td>
</tr>
<tr>
<td>Role Limitations due to Physical Health\textsuperscript{b}</td>
<td>37.96</td>
<td>42.12</td>
<td>360</td>
</tr>
<tr>
<td>Energy/Fatigue\textsuperscript{b}</td>
<td>47.09</td>
<td>21.32</td>
<td>360</td>
</tr>
</tbody>
</table>

\textsuperscript{a} On a one to five scale, five being least satisfied, and 1 being most satisfied

\textsuperscript{b} On a zero to 100 scale, lower scores indicate lack of health.
Table 3
Correlations Between Multiple Regression Variablesa

<table>
<thead>
<tr>
<th></th>
<th>Satisfactionb</th>
<th>Age</th>
<th>Physical Functioning</th>
<th>Physical Limitationsc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>- .121*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Functioning</td>
<td>- .128*</td>
<td></td>
<td></td>
<td>- .170**</td>
</tr>
<tr>
<td>Physical Limitationsc</td>
<td>- .194**</td>
<td></td>
<td>- .122*</td>
<td>.630**</td>
</tr>
<tr>
<td>Energy/Fatigue</td>
<td>- .233**</td>
<td>.012</td>
<td>.574**</td>
<td>.545**</td>
</tr>
</tbody>
</table>

a N = 360 for each correlation

b Eleven-Item satisfaction score

c Role limitations due to physical health

* p < .05, two tailed

** p < .01, two tailed
Table 4
Inferential Statistics for the Hierarchical Multiple Regression with Patient Satisfaction Score as a Dependent Variable

<table>
<thead>
<tr>
<th>Variablea</th>
<th>βb</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.129</td>
<td>6.12</td>
<td>.014</td>
</tr>
<tr>
<td>Energy/Fatigue</td>
<td>-.178</td>
<td>7.39</td>
<td>.007</td>
</tr>
<tr>
<td>Role Limitations due to Physical Health</td>
<td>-.138</td>
<td>4.03</td>
<td>.046</td>
</tr>
<tr>
<td>Physical Functioning</td>
<td>.039</td>
<td>.29</td>
<td>.588</td>
</tr>
</tbody>
</table>

a N = 360 for each variable

b The standardized regression coefficient was chosen so the importance of each variable can be judged in relation to the other variables.
Adjusted $R^2$, the amount of variance in satisfaction accounted for by the three health variables, equals .068; therefore, this group of variables accounted for 7% of the variance in patient satisfaction, $F(4,356) = 7.64, p < .0001$.

Spearman's correlation coefficient was used to analyze the relationship between satisfaction level and utilization of clinic services. Mean usage of clinic services was 6.4 times in the past year with a standard deviation of 12.67, and a minimum of 0 and a maximum of 200 visits. A log10 transformation of the clinic usage variable was employed to limit the effect of outliers. The relationship between satisfaction and utilization was not significant, $r (346) = -.025, p = .319$. 
CHAPTER V
DISCUSSION

The present research supports the notion that patient satisfaction with medical care is a unidimensional concept. The patients in the present sample apparently did not distinguish among different aspects of their encounters with GMC doctors. Possibly, patients used their ratings of doctor communication and interpersonal skills in determining how satisfied they were with other aspects of their medical care because they were unable to accurately assess medical expertise. Past research has demonstrated that patients are unable to accurately assess doctor medical expertise (Ben-Sira, 1976) and that perceptions of doctor-patient communication heavily influences satisfaction with medical care (Buller & Buller, 1987).

The unidimensional solution for the factor analysis must be considered in light of the skewed patient satisfaction distribution. The vast majority of patients responding to the survey reported high degrees of satisfaction with the medical care they receive at the GMC. One explanation for the high satisfaction scores is that patients really were
very satisfied with their doctors. A more likely explanation is the patient satisfaction measurement instrument may not be sensitive enough.

Specifically, all 11 items of the satisfaction scale were positively worded and may have led patients to respond in a positive manner. There is evidence to suggest that elderly people are more prone to an acquiescent response bias in which a 'yes' response to a question is more likely than a 'no' response, regardless of item content (Zastowny et al., 1989). Regardless of whether or not patients were prone to an acquiescent response bias, items of a scale should be balanced, one-half worded positively and one-half worded negatively (Oskamp, 1991). Future patient satisfaction measures should include positively and negatively worded items. An example of a balanced patient satisfaction measure is the Patient Satisfaction Questionnaire (PSQ) developed and validated by the Rand corporation for a more general patient population (Ware, Snyder, Wright, & Davies, 1984).

It was demonstrated that among the patients attending the GMC, role limitations due to physical health and energy levels account for variation in satisfaction scores above and beyond patient age. Specifically, it was found increased age and limitations to physical functioning both negatively affect satisfaction. Contrary to the hypotheses, increased energy levels contributed to lower levels of patient
satisfaction and overall physical functioning had no effect on satisfaction level. This results suggests that age alone is not a factor contributing to patient satisfaction levels, but rather also role limitations due to physical health exert significant influence on satisfaction.

The physical functioning and role limitations due to physical health scores of the patients in this investigation were considerably lower than scores found in an investigation of chronically ill patients seeking medical attention (Stewart et al., 1989). Perhaps such low health scores contributed to the negative correlation between old age and patient satisfaction.

The results contrary to the hypothesis are difficult to explain. The positive correlation between energy level and role limitations due to physical health (Table 4) may provide a possible explanation. Perhaps people with high energy levels but low physical functioning levels were unable to function the way they once did and this created general frustration affecting satisfaction with medical care.

Future research should concentrate on role limitations due to physical health and energy levels as contributors to patient satisfaction rather than patient age. Or perhaps analyzing patient satisfaction in terms of elderly physical health level would shed light on the relationship between age and satisfaction. Future analyses should determine if the
elderly with relatively few obstacles limiting their physical functioning are more satisfied with their medical care than the elderly who are limited in their physical functioning and energy level.

Past research has demonstrated a relationship between satisfaction and use of health care services (Thomas & Penchansky, 1984; Zastowny et al., 1989). The present study did not find a relationship between satisfaction with medical care and utilization of medical services. While some disagreement exists as to whether utilization of services affects satisfaction positively or negatively, it is generally agreed that a relationship exists. One possible explanation for the present findings is the skewed distribution of satisfaction scores. The lack of variation in satisfaction has already been attributed to the low sensitivity level of the satisfaction measure. Perhaps the use of a more sensitive satisfaction measure would have yielded more variation in satisfaction scores. Once again, the need for a sensitive instrument to measure satisfaction with medical care has been demonstrated.

When considering these findings, the reader must keep in mind limitations of this research. First, the sample was 96.6% men, most of whom were elderly, the median age was 68 years, and all were veterans. This sample was relatively homogeneous and relationships between satisfaction and various other variables may take on other patterns with
different samples. Second, the patient satisfaction instrument used could be significantly improved upon. Perhaps a measure of patient satisfaction with reversed-scored items would have yielded different results. Finally, the study was conducted at the Department of Veterans' Affairs (DVA). Here many patients receive subsidized medical care through DVA benefits. Few people pay out-of-pocket for services at the veteran's GMC. Some veterans may have felt reluctant to state their true feelings about the care they receive over concerns of benefits being revoked. Clearly the sample used in this study is atypical and subject to different influences than other possible samples.

This research demonstrated a negative relationship between age and satisfaction, older patients were less satisfied with their medical care, controlling for health status. Most research has demonstrated a positive relationship between age and satisfaction. It is possible that a curvilinear relationship exists between satisfaction and age. Hulka et al. (1975) found lower satisfaction among patients over age 60, and in this sample the median patient age was 68. The existence of a curvilinear relationship between age and patient satisfaction should be investigated in future research. If a curvilinear relationship exists, clinics or wards serving homogeneous or older populations should be aware of these limitations when conducting satisfaction research.
In conclusion, it is strongly suggested that research in the field of patient satisfaction concentrate on developing a more sensitive measure of patient satisfaction. The literature has already demonstrated the difficulty patients have in assessing doctor expertise and patients' reliance on judgments of doctor interpersonal skills in rating their satisfaction with medical care.

Minimally, this research has provided some evidence that some relationships between satisfaction variables found in hospital settings may not apply to specialized clinics with more homogeneous patients, in this case, a general medicine clinic at a veteran's hospital.
APPENDIX A

PATIENT SATISFACTION QUESTIONS

Unidimensional question.

11. In general, how satisfied are you with the care you receive from your General Medicine Clinic physician?

(Circle one number on the 1-5 scale)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely</td>
<td>Satisfied</td>
<td>Neither</td>
<td>Dissatisfied</td>
<td>Extremely</td>
</tr>
<tr>
<td></td>
<td>Satisfied</td>
<td></td>
<td>Satisfied</td>
<td>nor</td>
<td>Dissatisfied</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>nor</td>
<td>Dissatisfied</td>
<td></td>
</tr>
</tbody>
</table>

Multidimensional Questions.

Each item in this section was answered on a 1-5 scale ranging from very much agree (1) to very much disagree (4) with fifth response category labeled "don't know."

13. My GMC doctor is doing as much as can be expected for me.
14. I feel my GMC doctor(s) care about me as a person.
15. I think I am getting high quality health care at the GMC.
16. My GMC doctor has a good bedside manner.
17. My medical needs are being met by my GMC doctor.
18. My GMC doctor understands what I need as a patient.
19. My GMC doctor is highly skilled and knowledgeable.
20. I am well educated about my medical condition(s).
21. My GMC doctor listens to me when I talk about my symptoms.
22. I think the time I spend being examined by my doctor is long enough for a complete checkup.
23. My GMC doctor has carefully explained to me how to treat my condition(s).
APPENDIX B

Health Status Items from the Rand 36-Item Health Survey 1.0

Physical Functioning Items.

The following ten items were answered on a three point scale: Yes, limited a lot (1); Yes, limited a little (2); No, not limited at all (3).

Instructions: The following items are about activities you might do during a typical day. Does your health no limit you in these activities? If so, how much?

40. Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports
41. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf
42. Lifting or carrying groceries
43. Climbing several flights of stairs
44. Climbing one flight of stairs
45. Bending, kneeling, or stooping
46. Walking more than a mile
47. Walking several blocks
48. Walking one block
49. Bathing or dressing yourself

Energy/Fatigue Items.

The following items were answered on a one to six scale ranging from "all of the time" (1) to "none of the time" (6).

Instructions: These questions are about how you feel and how things have been with you during the past 4 weeks. For each
question, please give the one answer that comes closest to the way you have been feeling.

60. Did you feel full of pep?
64. Did you have a lot of energy?
66. Did you feel worn out?
67. Did you feel tired?

Role Limitations Due to Physical Health Items.
The following items were answered in a 'yes' 'no' fashion. Instructions: During the past four weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

50. Cut down on the amount of time you spend on work or other activities?
51. Accomplished less than you would like?
52. Were limited in the kind of work or other activities?
53. Had difficulty performing the work of other activities (for example, it took extra effort)?
APPENDIX C

Utilization Item

31. In the past twelve months, how many times have you received medical care from Hines VA hospital? Number of clinic visits not overnight.
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VITA

Dennis E. Dew, Jr. was born and raised in Northwest Ohio from which he fled upon graduating from St. John's Jesuit High School. He moved to Cleveland, Ohio and attended John Carroll University, another Jesuit learning institution, where he majored in Psychology and Religious Studies while running the University's radio station. He graduated from John Carroll University and in August 1992 moved to Chicago, Illinois to attend the Applied Social Psychology program at Loyola University Chicago, yet another Jesuit university.

During the summer of 1994, Dennis managed two research projects at Hines V. A. Hospital, one of which was transformed into his Master's Thesis. His research interests include patient satisfaction, social dilemmas, and smoking prevention. He currently resides in Chicago and is employed at the National Opinion Research Center at the University of Chicago.
The thesis submitted by Dennis E. Dew, Jr. has been read and approved by the following committee:

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Assistant Professor of Medicine
Loyola University Medical Center

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the committee with reference to content and form.

The thesis is, therefore, accepted in partial fulfillment of the requirements for the degree of Master of Arts.

Nov 20, 1995
Date

[Director's Signature]