

EFFECT OF ORGANIZATION CENTRALIZATION ON PATIENT
SATISFACTION WITH AMBULATORY CARE GROUP PRACTICE

A THESIS

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CHAPTER I

INTRODUCTION

Social Issue Perspective

Wide acceptance has been obtained today for the goal of an improved partnership between the physician and the public in order to attain community health. Total responsibility for community health outcomes has shifted from the medical practitioner to a shared focus with the patient: the role an individual's health education, lifestyle, diet, and exercise habits play in the prevention of disease. A secondary benefit to providers sponsoring patient education/awareness programs has been the positive effect obtained from a marketing perspective. Marketing outreach efforts are increasingly discussed in conferences of health care providers as utilization of services gains importance in certificate of need and accreditation surveys. One major consideration in formulating marketing strategy in addition to need assessment is the determination of consumer satisfaction with services provided; satisfaction affects the organizationally relevant behavior of the consumer. Patient satisfaction, therefore, is logically a primary consideration to both health care providers and administrators.

Historically, medicine has been regarded as both science and art. The proliferation of technical advances available to medical practitioners in recent years has garnered wide recognition both in the public media and in medical education curricula. The rationale for this study is to examine the production resulting from the other half of medicine, that which is referred to frequently in the literature as the "art of caring," popularly termed "bedside manner." The quality of care outcome of the provider-patient interaction, health and patient satisfaction, in group practice ambulatory care is delivered by the practitioner but through the organization.

The evaluation of quality care as a production measure of the health care delivery system has received increased attention over the past decade. Empirical study of patient satisfaction may indicate that system variables play a causal role in quality of care outcomes. In current practice, the art of care is less in the hands of the solo practitioner and increasingly in group practices with varying levels of organization centralization, whether in the private sector or under public auspices financed by local, state, or federal tax revenues. The evaluation of patient satisfaction with care and the acquisition of empirical data on its component parts is essential in order

to give emphasis to the needs of patients of ambulatory care provider organizations with low centralization when designing organizational systems elements. The avoidance of negative outcomes from the provision of care, "doctor shopping" behavior and/or malpractice litigation, is clearly the responsibility of all the providers in the health care service field. This study will deal with the possible existence of organizational determinants of satisfaction with care in three settings varied as to centralization of decision making.

Background

The motivation for this study arises from the work experiences of the writer. In conversations with managers of the various clinics in the Texas Medical Center, the writer received the same answer when asking the question, "What would you most like to know about the operation of your clinic?" That answer approximated: "Are our patients satisfied with the services they receive, or how satisfied are our patients with our clinics?" A common denominator in conversations with physicians in all the specialty groups to which the writer has access is this concern for patient feedback in an empirical form. The managers of the three clinics who have agreed to participate in this research view the outcome as action oriented, a means to provide them with

data on the production of their clinics for planning and management decisions to maximize quality of care.

Statement of the Problem

This thesis research has as its unit of analysis that organizational entity known as the medical group practice, more particularly, the ambulatory care center or clinic. The unit of observation, however, is each individual patient selected from the participating clinics. Three settings providing similar levels of care in general internal medicine group practices located proximal to the Texas Medical Center were studied as independent variables of analysis by which to measure levels of organizational centralization. A high level of centralization was represented by a public academic group practice, an intermediate level by a private academic group practice, and a low centralization level by a private nonacademic group practice. Levels of centralization in this paper were the number of levels of decision makers in the hierarchy of authority. The dependent variable to be examined is the measure of production, quality of care, as reflected by the level of patient satisfaction resulting from health services provided by the clinics. These levels were quantified by the administration of a patient satisfaction questionnaire

widely field tested on a national basis. Several intervening variables were also examined for contributory sociodemographic correlation: income level, educational attainment, age, sex, occupation, size of family, and citizenship or national origin.

This thesis is in the discipline of sociology, in particular the subdiscipline of organizational behavior and management. The primary foundation in the literature underlying this study is the axiomatic theory of organizations developed by Hage (1965) coupled with the patient satisfaction investigations brought to maturity under the direction of Ware (1976) and others. In the manner of Wallace (1971), the theories of Hage have been treated by logical deduction to the development of hypotheses to be tested by observations. These latter informational components have been framed in the research methods of Ware and others, leading to data collection and a decision to accept or not accept the hypothesis as well as the formulation of observations that, in turn, may support empirical generalizations. This scientific process was applied with appropriate methodological controls to be detailed in a later chapter.

Casual-comparative research is "that research in which the researcher attempts to determine the cause, or

reason for existing differences in the behavior or status of groups of individuals" (Gay 1976:153). Applied research is used "to designate investigations aimed at solving problems of immediate concern" (Drew 1980:9). As to classification following these definitions, this research is concurrent, applied, and casual-comparative. Additionally, it is an observational study (McKinlay 1975), one which is concerned with investigating relationships among human populations, but comparing groups to which the independent variable is not randomly assigned.

The question to be examined is: What is the variance in the level of production between clinics in organizations with structural differences as to centralization? This cosmological question deals with the character of organizational structure and with the processes and relation of its parts following the axiomatic theory of Hage (1965:300), "The higher the centralization, the higher the production." The research addresses the evaluation of the amount of production, patient satisfaction, as an aspect of the element between these two, quality of care.

CHAPTER II

REVIEW OF THE LITERATURE

Historical Foundation

Social scientists have had a long-standing analytical interest in the role of the physician and patient and their reciprocal relationship. As early as 1951 Talcott Parsons in a lengthy study of the structure and process of social systems cited medical practice as an important subsystem of modern Western society. Results of a field study of medical practice conducted by Parsons, published in only fragmentary form in several places, provided him with an empirical basis from which to comment on modes of institutionalization of physicians' roles. Parsons finds there exists an important distinction between two types of physicians: the "private practitioner" and those who work within the context of an organization. He concludes an increasing proportion of medical practice is now taking place in the context of organizations. The "organization physician" tends to be relieved of much responsibility, and hence necessarily of freedom, in relation to his patients other than in his technical role. The settlement of terms of exchange as well as the provision of facilities for carrying on the medical care function are the immediate

responsibility of the private practitioner (Parsons 1951). The physician in an organization, however, is not typically involved with these matters to an equal degree. The "organization" provides for them.

Another prominent medical sociologist suggests bureaucratization of services, while beneficial to effect more efficient distribution, may be costly in an organizational context (Mechanic 1965). It is not clear what damage bureaucratization of professional services may have on the emotional sustenance functions of these professions. He cites the need for a certain degree of intimacy in personal nurturance relationships as contravened by bureaucratic pressures to regulate an efficient organization and achieve balanced distribution of services. There may be a point where the degree of organization may subvert some of the basic functions and value of professional service: bureaucracies develop certain rigidities and inflexibilities in dealing with specific unique problems. While the bureaucratic form may be worthy from the standpoint of objective, scientific medicine, it is a rather poor organizational form in Mechanic's opinion to deal with the emotional sustenance aspect of medicine. He states, "Should the physician be under the control or committed to a third party having interest which may oppose the patient, the

physician's role may be compromised (p. 239)."

In the field of organizational design, the health care organization is recognized as among the most complex in modern society (Longest 1978; Durbin and Springall 1969; and Neuhauser 1978). Writers have dealt principally with the divergence of professions represented within the organization, from the physician with the highest level of training to the dietary or laundry worker with the lowest. The management of such diverse and complex skill levels must be a special sort to be effective. Matrix management, contingency or situational theory, and preventive coordination are offered as strategies by which to positively effect a quality outcome. The relationship between the medical staff and the administration is a delicate and sensitive one on which hinges the productivity of the organization: quality of care.

Measurement of differences between organizations has proved to be an equally complex task. Several approaches have been developed to deal systematically with variations between organizations; it is to these investigators that this study will turn for conceptual and theoretical tools of organizational variables.

Theoretical Foundation

Writing in 1965, Jerald Hage postulates an axiomatic theory of organizations utilizing eight variables as formal characteristics of organizations: four represent organizational means, and four, organizational ends. Hage's major consideration in the choice of the variables was that they be general enough to be applied to any kind of organization. Of necessity, these formal characteristics are on a high level of abstraction in order to allow a much greater generality than content categories. The four ends are functional problems of a social system: adaptiveness (flexibility), production (effectiveness), efficiency (cost), and job satisfaction (morale). The four means are major characteristics of organizations: complexity (specialization), centralization (hierarchy of authority), formalization (standardization), and stratification (status system). At least partial answers can be provided to the question of whether a particular social means is most appropriate for a particular social end via the axiom theory. The example cited by Hage is the subject of this research: "Does the degree of centralization have any consequences for the amount of production (p. 290)."

Hage (1965) operationalizes centralization as:

Measured by the proportion of occupations or jobs whose occupants participate in decision making and the number of areas in which they participate. The lower the proportion of occupations or jobs whose occupants participate and the fewer the decision areas in which they participate, the more centralized the organization (p. 295).

Indeed, Hage (1965:300) concludes: "The higher the centralization, the higher the production." The proposition is based on Max Weber's model of bureaucracy, a hierarchy of offices where the duties are clearly codified by rules and regulations. Other propositions and corollaries pertaining to organizational centralization are:

The higher the centralization, the higher the formalization.

The higher the centralization, the higher the efficiency.

The higher the centralization, the lower the job satisfaction.

The higher the centralization, the lower the adaptiveness.

The higher the centralization, the higher the stratification.

In short, high centralization is associated with high formalization (routinization of tasks needed for high volume production), efficiency, and stratification, but lower job satisfaction and adaptiveness.

Other authors in the years to follow have used Hage's variables as dimensions of organization structure. One group (Pugh, Hickson, Hinings, and Turner 1972) examined the literature on organizations to define six primary

dimensions: (1) specialization, (2) standardization, (3) formalization, (4) centralization, (5) configuration, and (6) flexibility. Scales were constructed for aspects of organizational context, and used as independent variables in multivariate analyses to predict structural forms. These measured the degree of a particular characteristic present by linking a large number of items together to show the characteristic. One dimension designated as primary was centralization.

This group of Pugh et al. (1972) concluded that to talk in terms of the Weberian bureaucratic stereotype is not adequate, since the structure of an organization may vary along any one of several dimensions into which they empirically established measurement scales. For example, the dimension containing centralization was termed "concentration of authority" and also contained organizational autonomy, percentage of workflow superordinates, and standardization of procedures for selection and advancement. However, in an effort to limit the scope of this thesis to one appropriate for the master's level, the recommendations of Pugh et al. to incorporate the scales for all aspects of an organization's context was not followed.

Leaving the area of bureaucratic organizational design to return to the productive relationship between

physician and patient, quality of care and patient satisfaction, a major scholar in the accountability movement (Donabedian 1966:167) defines quality of care as "a reflection of values and goals current in the medical care system and in the larger society of which it is a part!" He further argues the ultimate validator of the quality of care is its effectiveness in achieving or producing health and satisfaction. He, like many others subsequently, admits the measurement of quality of care, particularly patient satisfaction, is difficult.

Writing for a basic text on the health care system, Steven Jonas (1974) cites patient satisfaction under both specific approaches and techniques to measure quality of care. The general approaches used by the Joint Commission on the Accreditation of Hospitals and state boards include licensure, accreditation, and certification, which receive wide attention among providers in the field. Jonas points out patient satisfaction is one specific approach to quality of care measurement and control that has received little attention. He states that, in general, patients appear to be less critical of the technical content of care than they are of attitudinal and situational components and designates one gauge of patient satisfaction to be the extent of medical malpractice litigation.

Empirical Literature

One of the first empirical investigations to address the problem of how to measure patient satisfaction was that of Hulka, Zyzanski, Cassel, and Thompson (1970). The problem examined was the development of scales to measure attitudes toward physicians and primary medical care termed patient satisfaction. A psychological scaling technique, the Thurstone "Method of Equal Appearing Intervals" was adapted to the problem. Three objects of measurement were used: (1) professional competence, (2) personal qualities, and (3) cost-convenience. Parallel form reliability was tested for each of these three content areas with resulting correlation coefficients of .75 for personal qualities, .63 for professional competence, and .43 for cost-convenience. The low value for the latter area was thought to be a function of the diversity of content expressed by the statements comprising the category as well as the small sample size ($n = 49$) employed (cf. table 1). The instrument consisted of forty-one statements to be marked "agree" or "disagree," a dichotomous choice. This study provided one of the earliest quantifications of different attitudes towards physicians and primary medical care in the literature.

Four years later this same group (Zyzanski, Hulka,

TABLE 1

SUMMARY OF RELIABILITY ESTIMATES FOR PUBLISHED SATISFACTION SCALES

Investigators	Scaling Method	Sample Size	Dimension(s)	No. of Items	Internal Consistency	Alternate Forms	Test Retest
Franklin and McLemore (1967, 1970) ^{1,2}	Thurstone/Likert ^a	136	1. General Satisfaction	20	.87		
Hulka, Zyzanski, Cassel, and Thompson (1970) ³	Thurstone ^b	49	1. Professional Competence 2. Personal Qualities 3. Access/Finances	12-14 12-14 12-14		.63 .75 .43	
Zyzanski, Hulka, and Cassel (1974) ⁴	Thurstone ^b	426	1. Professional Competence 2. Personal Qualities 3. Access/Finances 4. Total	14 14 14 42	.52 .74 .55 .80		
Zyzanski, Hulka, and Cassel (1974) ⁴	Thurstone/Likert ^a	426	1. Professional Competence 2. Personal Qualities 3. Access/Qualities 4. Total	14 14 14 42	.75 .86 .68 .90		
Rojek, Clemente, and Summers (1975) ⁵	Factor Analytic/Likert	1100	1. General Satisfaction	3	.71		
Aday and Anderson (1975) ⁶	Factor Analytic ^c /Likert	2000+	1. Access/Finances 2. Art of Care/Technical 3. Total	3 8 11	.68 ^d .90 ^d .84 ^d		
Ware, Wright, Snyder, et al (1975) ⁷	Factor Analytic/Likert	903	1. Availability (9e) 2. Availability Total 3. Continuity 4. Finances 5. Art of Care 6. Technical Quality (7) 7. Art/Technical Total	2-4 10 4 4 3 2-4 25	.57-.81 .83 .78 .69 .67 .51-.89 .89		

Table 1 (Continued)

Investigators	Scaling Method	Sample Size	Dimension(s)	No. of Items	Internal Consistency	Alternate Forms	Test Retest
Ware and Snyder (1975) ⁸	Factor Analytic/ Likert	433	1. Availability (4) 2. Accessibility (3) 3. Continuity (2) 4. Finances (3) 5. Art of Care (3) 6. Technical Quality (5)	2 2-3 2 3-4 3-4 2-4	.47-.76 .49-.64 .57-.67 .66-.75 .67-.75 .52-.73		.57-.62f .59-.62f .59-.64f .62-.69f .62-.69f .64-.70f

aThurstone weights with Likert-type responses and combined Thurstone and Likert scoring.
bMethod of equal-appearing intervals.
cItems meeting factor analytic and/or Likert scaling and/or homogeneity criteria.
dNot reported; computed from published information.
eMore than one scale in the same dimension; number of scales shown in parentheses.
fN=167 for test-retest reliability study.

SOURCE: John E. Ware, Mary K. Snyder, and W. Russell Wright. Development and Validation of Scales to Measure Patient Satisfaction with Health Care Services, 6 Vols. (Washington, D.C.: U.S. Department of Health, Education and Welfare, National Center for Health Services Research, 1976), Vol. 4, p. 3.

¹B. J. Franklin and S. D. McInemore. A scale for measuring attitudes toward student health services. Journal of Psychology, 66:143-147 (1967).

²B. J. Franklin and S. D. McInemore. Factors affecting the choice of medical care among university students. Journal of Health and Social Behavior, 11:311-319 (1970).

³B. S. Hulka, S. J. Zyzanski, J. C. Cassel, and S. J. Thompson. Scale for the measurement of attitudes toward physicians and primary medical care. Medical Care, 8:429-436 (1970).

⁴S. J. Zyzanski, B. S. Hulka, and J. C. Cassel. Scale for the measurement of satisfaction with medical care: Modifications in content, format, and scoring. Medical Care, 13:611-620 (1974).

⁵D. G. Rojek, F. Clemente, and C. F. Summers. Community satisfaction: A study of contentment with local services. Rural Sociology, 40:177-192 (1975).

⁶L. A. Aday and R. Andersen. Access to Medical Care. (Ann Arbor, Michigan: Health Administration Press, 1975).

⁷J. E. Ware, Jr., W. R. Wright, M. K. Snyder, and G. C. Chu. Consumer perceptions of health care services: Implications for the academic medical community. Journal of Medical Education, 50:839-848 (1975).

⁸J. E. Ware, Jr. and M. K. Snyder. Dimensions of patient attitudes regarding doctors and medical care services. Medical Care, 13:669-682 (1975).

and Cassel 1974) reported modifications in content, format, and scoring. During the intervening years, a second administration of the original instrument to 254 working-class households in Raleigh, North Carolina resulted in the awareness on the part of the investigators of certain inadequacies of the scale. The scaled statements were resubmitted to a panel of thirty-nine experienced public health nurses from different parts of the country attending a local workshop and then recategorized based on the nurses' content analysis. Other responses from the Raleigh study and protests among additional patient groups indicated the "agree-disagree" alternatives were uncomfortable, and did not provide a satisfactory representation of the attitudes the respondents wished to express. The Likert method of scoring (Oppenheim 1966) with a range of five response alternatives from strongly agree to strongly disagree seemed a logical choice and the questionnaire was modified accordingly.

The resulting forty-two item instrument was administered to 426 patients attending physicians in private practice, but the data were scored two ways: (1) by the traditional Thurstone method of equal appearing intervals and (2) by Thurstone weights with Likert-type responses and combined Thurstone/Likert scoring (a modified scale product

scoring). A comparison of Spearman-Brown (corrected) split-half reliability coefficients on the three objects of measurement (professional competence, personal qualities, and cost-convenience) yielded totals of .90 for the scale product method and .80 for the Thurstone method. This improved reliability was found not only for the total scale but for each object scale as well (cf. table 1).

An extensive, detailed review of the theoretical and empirical literature of the twenty-five-year period from 1950 to 1975 pertaining to patient satisfaction was conducted by Ware, Snyder, and Wright (1976). The majority of articles, reports, and books that were identified were published during the last five years of their examination, totaling 101. A detailed content outline was prepared for satisfaction questionnaires described in the literature as a prelude to planning and developing new satisfaction rating scales. Ware asserts many studies have disregarded the state of the art of measurement practices: how reliably and validly did the instrument used in the survey measure patient satisfaction (Ware 1977). He operationally defined the concept and identified its major dimensions, evaluated instrument validity, and assessed the usefulness of the concept as both an independent and dependent variable in health and medical care research.

Ware's taxonomy of patient satisfaction contains dimensions identified from an indepth content analysis of questionnaire items in the published literature and from the responses to open-ended questions field in surveys of general (nondisadvantaged) populations (Ware 1977). The resulting eight major distinguishable dimensions are:

1. Art of Care - concern, consideration, sincerity, patience versus unnecessary hurt, abruptness, disrespect, embarrassment, insult
2. Technical Quality of Care - ability, experience, thoroughness, accuracy, soundness of skills versus taking unnecessary risks, overprescribing, outdated regimens, defects in equipment and facilities
3. Accessibility/Convenience - travel and waiting times, effort needed to get appointment, availability of help by telephone
4. Finances - dollar costs of treatment, payment mechanisms flexibility, comprehensiveness of insurance coverage
5. Physical Environment - environment in general, comfort of waiting rooms, clarity of signs and directions, convenience
6. Availability - sufficient numbers of physicians, nurses and other providers
7. Continuity of Care - regular care source for self and family, continuous medical record on all visits for care
8. Efficacy/Outcomes of Care - belief that doctors help their patients by curing them, relieving suffering, and/or preventing disease

Regarding reliability, properly constructed multi-item measures (i.e., scales) generally yielded some score

variability and higher reliability and validity than single-item measures. Despite these well-documented advantages of scales, Ware (1977) reported two-thirds of the empirical satisfaction studies relied on single-item measures to test hypotheses. Lengthy, homogeneous scales proved to be the most reliable in a given population (cf. table 1). Almost without exception, available evidence was consistent with the hypothesis that patient satisfaction scores were valid dependent variables. Particularly encouraging was the demonstrated reliability of both the Hulka (1970) and Ware (1976) scales in disadvantaged populations where reliability tends to be poorest; single-item measures tested especially weak in these groups.

Ware (1977) reports the following conclusions seem to be supported by fourteen articles that reported demographic and socioeconomic correlates of patient satisfaction:

1. Age: Older persons tended to be more satisfied with the conduct of providers and less satisfied with access to care and outcomes of care
2. Education: Less educated persons tended to be less satisfied with medical care in general and with conduct of providers
3. Family Size: Persons in larger families tended to be less satisfied with access to care
4. Income: Lower income persons tended to be less satisfied with access and the outcomes of care

5. Marital Status: No clear trends
6. Occupational Level: Persons at higher occupational levels tended to be more satisfied with medical care
7. Race: No clear trends
8. Sex: Women tended to be more satisfied in general than did men
9. Social Class: No clear trends

Twelve studies of consumer satisfaction with health care services (cf. table 2) performed by Ware et al. (1976) span the years 1972 to 1976 with a sample size of 14,550. The twelve studies differed with respect to both survey methods and the sociodemographic characteristics of respondents. Eighteen versions of the Patient Satisfaction Questionnaire Form II were tested in the primary analysis sites (Ware et al. 1976). Separate tables on validity and reliability reported for each site are available in Volume 1, Part B. Statistical significance was satisfactory for each test.

During the tri-county field test (Franklin, Williamson, and Perry counties in southern Illinois), it was first noted that correlations among patient satisfaction questionnaire items were greatly influenced by similarities and dissimilarities in methods of measurement in addition to the dimensions of satisfaction: Whether the items contained the word "doctor" or whether or not items were favorably or

TABLE 2

SUMMARY OF WARE'S STUDIES TRACTING EVOLUTION
OF PATIENT SATISFACTION QUESTIONNAIRE (PSQ)

Data Sources	Approx. Sample Size	Date Study Began	Instrument Used
1. Southernmost Ill.	900	8/72	So. Ill. Field Test Q
2. Tri-County	430	10/73	PSQ, Form II
3. East St. Louis	325	5/74	PSQ, Form II
4. Sangamon County	430	9/74	PSQ, Form II
5. Family Practice Center	525	10/74	PSQ, Form II
6. Los Angeles Cty.	640	9/74	PSQ, Form II
7. Madison, WI	400	8/74	PSQ, Form II
8. Tri-County Follow-up	100	9/75	PSQ, 43-Item Short Form, Version II
<u>Secondary Analysis</u>			
9. AAFP-UNC Study	1200	4/74	42-Item Hulka Satisfaction Scale
10. CHAS-NORC Study	5300	8/74	Anderson Health Opinions Ques- tionnaire
11. Rand Health Ins.	2800	4/75	PSQ, 37-Item Short Form
12. Group Health- Seattle	1500	12/75	PSQ, 43-Item Short Form Version I & II

TABLE 2 (Continued)

Source: John E. Ware, Mary K. Snyder, and W. Russell Wright. Development and Validation of Scales to Measure Patient Satisfaction with Health Care Services, 6 Vols. (Washington, D.C.: U.S. Department of Health, Education and Welfare, National Center for Health Services Research, 1976), Vol. 4, p. 3.

^aAmerican Academy of Family Practice-University of North Carolina Study

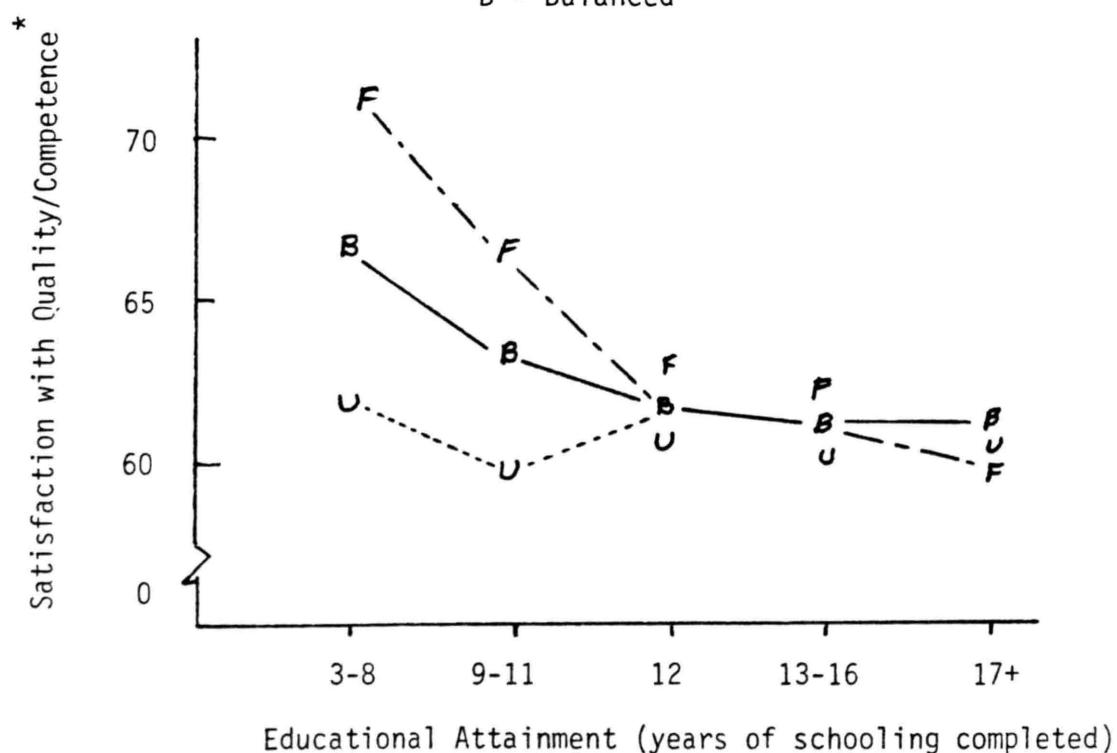
^bCenter for Health Administration Studies-National Opinion Research Center



Error in pagination or missing when printed.

Scales:

F - Unbalanced, Favorably Worded
 U - Unbalanced, Unfavorably Worded
 B - Balanced



*Expressed as the percent of total possible scale score

Figure 1: Plot of mean satisfaction scores based on balanced and unbalanced scales for groups differing in educational attainment

SOURCE: John E. Ware, Mary K. Snyder, and W. Russell Wright, Development and Validation of Scales to Measure Patient Satisfaction with Health Care Services, 6 Vols. (Washington, D.C.: U.S. Department of Health Education and Welfare, National Center for Health Services Research, 1976), Vol. 1, pt. B, p. 582.

are small enough to not invalidate satisfaction surveys constructed to measure structure, process, and outcome.

Other investigators have looked at the relevance of satisfaction with health services to organizational policy (Berkanovic and Marcus 1976). They suggest two criteria to be met if satisfaction is a policy-relevant variable: (1) satisfaction is manipulable through organizational policy, and (2) when a choice is available, the consumer's behavior that is organizationally relevant is shown to be affected by his satisfaction with services. Gamma matrix data in an ordinal level measure of association are shown to be statistically significant beyond $p = .05$ to support both criteria based on a sample of 598 Medicaid recipients in two counties adjacent to Portland, Oregon. The authors conclude satisfaction varies with several perceptions of the experience of seeking care that are, in principle, controllable by administrative means.

Various writers have dealt with issues of "de-humanizing consequences of bureaucratic medicine" (Howard, Davis, Pope, and Ruzek 1977). In these writings, de-humanization and depersonalization are used interchangeably. Centralization is addressed as "bigness and bureaucracy". (Note that Hage [1965:295] uses the term to indicate few decision making areas in an organization. This research

uses Hage's definition throughout.) A popular explanation for depersonalization in health care is scale. Although equality of service has a goal of optimal efficiency, the conviction persists that the sheer size of the enterprise will inevitably lead to depersonalization and related interpersonal pathologies. The larger and more impersonal bureaucratic organizations stress the replaceability of human beings, not their unique attributes, hence, the popularity of recommendations to decentralize services.

A broad trend toward "consumerism" has been prevalent in our society in recent years, that is, holding those who control and provide essential services accountable to their consumers in other than traditional economic ways. Changing professional-client relationships, particularly in bureaucratic settings has undergone a transition from doctor-patient to provider-consumer (Reeder 1972). Concern regarding the issue of "doctor shopping" behavior on the part of consumers of medical care is evident in the literature: problems of dissatisfaction with care are solved by switching providers (Kasteler, Kane, Olsen, and Thetford 1976). Also discussed is the effect of physician role performance on utilization (Larson and Rootman 1976). Less attention, however, has been given to organizational determinants of satisfaction with care except as they relate

to the emerging health maintenance organization/prepaid care movement (Tessler and Mechanic 1975) or to the effects of reorganization on continuity of care (Breslau and Haug 1976). The research performed for this thesis was, therefore, intended to address the effect of organizational centralization on patient satisfaction with care.

Summary

In summary, this research drew on literature from the social sciences originating with Parsons (1951) and using theory made specific by Hage (1965) to examine the effect of organizational centralization on production or quality of care. The work of Hulka and colleagues (Hulka, Zyzanski, Cassel, and Thompson 1970; Zyzanski, Hulka, and Cassel 1974) leading to the extensive development and validation of scales to measure patient satisfaction with health care services by Ware and colleagues (Ware, Snyder, and Wright 1976) provides an instrument and methodological basis with which to address this problem, posed by Hage (1965:290), "Does the degree of centralization have any consequences for the amount of production?"

CHAPTER III

DESIGN

Purposes

This thesis analyzes production as it relates to quality of care in three ambulatory care centers differing in organizational centralization. The operational measure is the level of patient satisfaction reported by responses to a questionnaire (appendix B) submitted to the patients in each clinic. By selecting three clinics with differing levels of centralization in the organizations to which they belong, the study examines whether organizational centralization may have an effect on patient satisfaction with ambulatory care group practice.

The data source regarding patient satisfaction was the questionnaire (cf. appendix B), a twenty-nine item short form, based on others developed by Ware et al. (Davies 1981) to quantify the patient satisfaction element of quality. Data regarding the levels of centralization was secured by interviews with upper levels of management from each organization. The measurement of centralization was by a count of the decision making strata in the organizational hierarchy that participate in management decisions over the

ambulatory care clinic. Following Hage (1965:295), centralization was measured by the number of levels of decision makers in the hierarchy of authority.

The rationale involved developing mean scores in each of the three group practices and between the groups based on both the medical opinions portion of the questionnaire on patient satisfaction (twenty-nine items) and the patient characteristic battery portion (fifteen items). The medical opinions section used a measurement scale of the Likert type, numbered one to five (cf. appendix B).

Data analysis was based on the application of a distribution free statistic, the Kruskal-Wallis one-way analysis of variance by ranks, a test to determine if k independent samples are from different populations. If the patient satisfaction levels were significantly different among the clinics in the manner indicated by Hage's (1965:300) major proposition on centralization: "The higher the centralization, the higher the production," the results would be positive.

Instrument

The instrument to be used in this study was based on the most recent available from the group headed by John Ware which was sent to the writer by an associate of Ware (Davies

1981). This new patient satisfaction survey was derived from the Patient Satisfaction Questionnaire, Forty-three Item Short Form, Version II (cf. table 2). Nineteen of the twenty-nine items were exact as to wording from this form; five other items were on the same constructs only reversed in direction, positive to negative or negative to positive. After the writer had planned this research following a review of the literature, Davies was contacted for a current instrument and scoring rules. The new survey provided by Davies (1981) was the first twenty-five items in the medical care opinions section of the questionnaire (cf. appendix B). Items twenty-six, twenty-eight, and twenty-nine were added from Ware's Patient Satisfaction Questionnaire, Forty-three item Short Form, Version II (cf. table 2). Item twenty-seven was based on item one of the Patient Satisfaction Questionnaire, Form I (totaling eighty items). Items thirty through thirty-nine and item forty-four were taken from Ware et al. (1976) Measures of Respondent Characteristics battery. Items forty through forty-three were based on similar items communicated by Davies.

The Patient Satisfaction Questionnaire was evaluated in relation to the criteria of "face" and "content" validity by Ware et al. (1976: Vol. 1, pt. B, p. 373). In order to satisfy the face validity criterion, the content of items in

each scale should appear to pertain to the subject matter implied in the name of the scale. Table 3 presents an outline of the Patient Satisfaction Questionnaire used in this study (cf. appendix B) showing the abbreviated content of items. It is clear from table 3 a high degree of correspondence exists between the names assigned to the item groupings and the manifest content of corresponding items. For example, items in the Access scale should pertain to "office hours," "phone availability," and "waiting time." In order to satisfy the content validity criterion, the content of items should represent the primary sources of satisfaction and dissatisfaction with health care services. The primary sources of satisfaction are stated in words used to describe sources of satisfaction and dissatisfaction in the empirical literature (cf. Review of the Literature).

Reliability of the Patient Satisfaction Questionnaire was repeatedly tested by Ware (1976:Vol. 1, pt. B). Emphasis was placed on homogeneity of scales, reliability of scale scores, population differences in reliability using the sociodemographic characteristics of respondents, and the stability of scale scores over time. Of note is the report that scales tended to appear less homogeneous in disadvantaged as opposed to nondisadvantaged groups (defined in terms of education and income). "Reliability coefficients

TABLE 3

CONTENT CONSTRUCT ITEM GROUPINGS OF PATIENT
SATISFACTION QUESTIONNAIRE

Construct Measured	Item No.	Direction of Score
I. <u>Access</u> (nonfinancial)		
Emergency Care	1	-
Phone Availability	6	-
Office Hours	10	+
Availability of Care	12	+
Travel Time	16	-
Answers to Questions	19	+
Appointment	21	+
Waiting Time	23	-
II. <u>Continuity of Care</u>		
Importance to Self	24	+
III. <u>Financial Aspects</u>		
Reasonable Charge	7	+
Cost of Care	25	-
Billing Problem	28	-
Unnecessary Expenses	29	+
IV. <u>Technical Aspects</u>		
Office Facilities	3	-
Confidence in Doctors	8	+
Take Risks	11	-
Thorough Treatment	14	-
Careful Exam	17	+
Ability of Doctors	22	-
V. <u>Art of Care</u> (Provider Conduct)		
Prevent Worrying	2	+
Rude Behavior	5	-
Friendly Manner	15	+
Respect for Patient	20	-
Recommend Surgery	26	+
Office Staff Behavior	27	+

TABLE 3 (Continued)

VI. <u>Overall/General Satisfaction</u>		
Care in General	4	+
Improve Care	9	-
Perfect Care	13	+
Improve Care	18	-

NOTE: Compiled by the writer but based on table provided by Allyson Ross Davies, letter (Santa Monica, California: The Rand Corporation, 24 March, 1981).

were rarely below 0.50, a recommended minimum standard for scales to be used in studies involving group comparisons" (cf. table 1) (Ware 1976:Vol. 1, pt. B, p. 320).

The Likert scale used in items one through twenty-nine of this questionnaire (cf. appendix B) produced ordinal level data: strongly agree, agree, don't know, disagree, and strongly disagree. These responses, while scored one through five, do not necessarily represent exactly equal intervals of attitude on the part of all respondents.

No instrument was used to measure levels of centralization in the three separate organizations to which the ambulatory care clinics belong. Personal interviews of the investigator with the clinic manager, and other managers above that person when needed, were used to assess the decision-making levels in the organization (cf. table 4). The investigator asked the question, "Who is the last person whose assent must be obtained before legitimate action is taken--even if others have subsequently to confirm the decision?" (Pugh et al. 1972). Positions which participate in making these decisions were then counted by determining the number of levels in the hierarchy of authority.

Hypotheses

The hypothesis stated in directional research form is: the level of mean patient satisfaction will differ as a

TABLE 4

LEVELS OF CENTRALIZATION AMONG SAMPLE ORGANIZATIONS

Total Levels	Decision Making Hierarchy	
Levels = (15)	Group Practice 1	1) State Legislature (Austin) 2) Governor (Austin) 3) Regents of U. T. System (Austin) 4) Chancellor of U. T. System (Austin) 5) Vice Chancellor for Health Affairs (Austin) 6) President of Health Science Center (Houston) 7) Vice President of Health Science Center (Houston) 8) Director, Ambulatory Program, Health Science Center 9) Dean of Medical School 10) Assoc. Dean for Clinical Affairs, Medical School 11) Board of Medical School Research and Development Plan (Group Practice) 12) Executive Director of MSRDP 13) Chairman of Department (Adminis- trator of Department) 14) Chief of Division (Administrator of Division) 15) Manager of Clinic
(7)	Group Practice 2	1) Board of Trustees 2) Chancellor 3) President 4) Vice President 5) Chairman of Department 6) Associate Chairman of Department 7) Clinic Manager
(4)	Group Practice 3	1) Executive Board 2) Executive Director 3) Director of Administrative Services 4) Director of Fiscal Affairs

function of the level of centralization. Accordingly, the highest satisfaction would be expected in the clinic with the lowest number of decision-making levels in the authority hierarchy: the private nonacademic setting. Conversely, the lowest level of satisfaction would be expected in the clinic with the highest number of decision making levels, the public academic setting. The independent variables of analysis (the group practices) were scaled along the line of centralization from the highest to lowest: (1) public academic, (2) private academic, and (3) private nonacademic. The dependent variable of quality of care, patient satisfaction, was a theoretically presumed effect of the level of the independent variable of centralization as measured in the unit of observation, the clinic's patients.

The null hypothesis is: There is no statistically significant difference in the level of mean patient satisfaction as a function of the level of centralization. The level of significance (α) is set at 0.05 with the region of rejection entirely at one end of the sampling distribution (a one-tailed test). Since the number of groups (k) in the study is three and if the null hypothesis (H_0) is true, then H (the statistic used in the Kruskal-Wallis test and defined by the formula found in Siegel [1956:185]) would be distributed as chi square with $df = k - 1$, or $df = 2$. With the

alpha set at 0.05, therefore, the observed value of \underline{H} must be larger than or equal to 5.99 in order to reject the null hypothesis.

Population

The population for this study was the member clinics ($\underline{N} = 1,212$) of the Medical Group Management Association (1981) which had a publication deadline of July 7, 1980. More current reports on membership (Hager 1981) list 2,473 medical group practices. More smaller groups are members (56.6 percent have less than eleven full-time physicians) than larger groups (1 percent of the group has more than fifty full-time physicians). The median size Medical Group Management Association group practice consists of 8.9 full-time equivalent physicians. The Medical Group Management Association represents approximately 66,000 full-time equivalent physicians in all. Organization affiliation is maintained with the Center for Research in Ambulatory Health Care Administration, the Accreditation Association for Ambulatory Health Care, Inc., and the American College of Medical Group Administrators.

Sample

The sample of three clinics selected from the Medical Group Management Association population was made on the following basis:

1. The level of centralization in the organizations to which each clinic belonged varied from low to high. The basic causal-comparative design involved selecting groups which differed on the independent variable (level of centralization in this case) and then comparing them on a dependent variable (level of patient satisfaction) (cf. Gay 1976). Information on size and volume of the group practices is as follows: (1) The public academic practice has thirty-five physicians and sees 18,000 patients visits per year on the average; (2) The private academic practice containing sixty physicians averages 21,600 patient visits per year; and (3) The private nonacademic group practice consists of sixty-five physicians who report seeing an average of 145,000 patient visits annually.

2. The clinics were similar with respect to critical considerations other than the independent variable. They practiced in the same medical specialty, internal medicine. The physical location of the practices was on the same street proximal to the Texas Medical Center. Many of the patients come as referrals from general practice physicians located in outlying communities to the Houston metropolitan area. Due to the proximity to the numerous academic influences of the Texas Medical Center and its recruitment of physicians on a national basis, the standard of care

practiced in these clinics could be expected to be a national standard rather than a local or regional one.

3. The clinic managers agreed to participate in this study. A fourth group was invited to join the study but declined the offer.

The sample size ($k = 3$) allowed representation of three levels of centralization while remaining within size boundaries that could be conducted by one investigator at the master's thesis level.

Unit of Observation

As previously indicated (cf. Statement of the Problem), the unit of analysis was that organizational entity known as the medical group practice, or the ambulatory care clinic. The unit of observation was the individual patients served by each clinic. The unit of observation in this study (the patient) was selected by random sampling techniques (cf. Methods). In the manner of McKinley (1975), true randomization of the patients across the boundaries of each group practice was not possible nor intended. This investigation was concerned with cause and effect of patient satisfaction as it could be attributed to the independent organizational variable of centralization. As it applies to this design, the "treatment" (centralization level), which determines the groups for comparison,

was the hypothesized cause and the subsequent observations (patient satisfaction level) were the effect. This design was therefore, a prospective study in which cause precedes the effect in the sequence of time.

Subject Anonymity

It was the commitment of this investigator to the subjects who participated in the study that their confidence would be maintained by applying no identifying names or numbers to the questionnaires. Consent to participate was indicated by return of the completed questionnaire to the clinic. The information gathered was used only by the persons engaged in the survey and would not be disclosed or released to others for any purpose; answers were used only when combined with those of many other people.

Definitions

Operational definitions applied to this research are as follows:

1. Centralization: The level of centralization in each of the three clinic's organizations was determined by the number of decision-making levels in the hierarchy of authority. Centralization was, therefore, operationalized in the manner set out by Hage (1972:295) and set forth in table 4.

2. Satisfaction: The presence of satisfaction on the part of the patients of each clinic was based on the response received to the questionnaire developed by Ware and others (cf. appendix B). Satisfaction was measured by several content constructs (cf. table 3) including access (nonfinancial), continuity, financial aspects, technical aspects, art of care, and overall/general satisfaction. These constructs taken together and rated on the self-administered questionnaire by each patient who responded was operationally termed patient satisfaction. Satisfaction levels were used to assess quality of care.

3. Quality of Care: The outcome measure of quality of care was patient satisfaction for the purposes of this research. The use of satisfaction as an indicator (Jonas 1974) of quality of care was the basic unit of evaluation of production. Quality of care lies midway between patient satisfaction and production on the continuum of organizational outcomes. Quality of care in the present research was measured in the one aspect, patient satisfaction, made operational by the questionnaire exhibited as appendix B.

4. Production: The top of the organizational outcome measure ladder addressed in this study is production; the ultimate measure of an organizational end in this research is production. Operationally, patient

this research is production. Operationally, patient satisfaction is an element of quality of care, which in turn is an element of production. Production, therefore, was measured by the patient satisfaction questionnaire (cf. appendix B) containing Likert scale ranked responses by the clinic patients who returned the completed forms.

5. Access: One of the content constructs under which items are grouped (cf. table 3) to evaluate the outcome of the patient responses to the satisfaction questionnaire exhibited as appendix B. This construct includes nonfinancial items of convenience: availability of emergency care, help by telephone, effort to get an appointment, and travel and waiting times.

6. Continuity of Care: The content construct of satisfaction (cf. table 3) composed of regular care for the patient by the same physician on subsequent visits to the clinic.

7. Financial Aspects: The content construct of satisfaction (cf. table 3) including the relative reasonableness of the dollar costs of treatment and other business functions.

8. Technical Aspects: A satisfaction content construct (cf. table 3) composed of ability of caregivers, experience, thoroughness, avoidance of unnecessary risks, and adequacy of office facilities.

9. Art of Care: A content construct of satisfaction (cf. table 3) covering respect, consideration and courtesy, the prevention of worry, avoiding unnecessary hurt, and staff behavior.

10. Overall/General Satisfaction: The content construct (cf. table 3) composed of satisfaction with care in general and the question of whether care would be improved overall.

11. Construct Score: The score for each of six constructs (cf. table 5) that make up the content of the medical opinions questionnaire obtained by the numerical addition of responses to questions (cf. table 3) by group practice.

Assumptions

The assumptions made for the purposes of this research were as follows:

1. All of the patients participating as units of observation in the study were representative of the clinic sample from which they were selected.
2. The patients chosen were selected randomly.
3. The patients who return questionnaires were able to read the English language and understand the questions (appendix B).

4. All of the questionnaires returned were filled out by the patients to whom they were sent.

5. The patients who responded were answering the questions truthfully and did not feel threatened by expressing dissatisfaction with their medical services.

6. The data generated on the "Likert-type" measurement scales for patient satisfaction was ordinal-level data.

7. The questionnaire used for the research (appendix B) was valid for the purpose of measuring patient satisfaction.

8. The theory of centralization having consequences for the amount of production (Hage 1965) did apply to this study.

9. A national standard of care was assumed to be practiced in all three group practices which constituted the sample for this study.

Limitations

The limitations of this research were:

1. Quality of medical care delivered by the individual practitioners was a variable for which the investigator could not control, and was, therefore, a possible source of bias.

2. Sociodemographic characteristics of the patients randomly selected in the sample were identified by a brief group of questions (appendix B, numbers 30-44) but were uncontrolled: income level, educational attainment, age, sex, occupation, family size, and citizenship/international origin. The unit of observation, patients, selected from the different clinics may have been affected by the frequency of emergency room referrals on socioeconomic levels in the academic settings; the lower socioeconomic levels tend toward use of the emergency room for routine medical care in lieu of a private physician.

3. The possibility exists that the groups were different on some major variable other than the identified independent variable, and it was this unidentified other variable which was the true cause of the observed difference between the groups (Gay 1976).

4. This design was not controlled for the length of time patients have utilized services provided in their current operational design. Due to the nature of change in organizations, clinics are moved from building to building, room to room, caregivers join the group and others leave. These factors remained free standing although they might have had an effect on individual responses based on experience. It is a possibility that the differences

between clinics might have resulted from a given clinic having the patient population with the longest continuous association, since patients who are more satisfied no doubt tend to stay with a clinic and those who are dissatisfied leave to seek other care. The patient characteristics battery contained items to indicate length of care and frequency of visits (cf. appendix B, items 40 and 41). Less satisfied patients may not visit as frequently as more satisfied patients.

5. Also uncontrolled was the possible effect of academic research interests in patient specialization; certain physicians having high skill in certain areas of training and expertise attract patients through the referral process who bring with them experiences based on their history that may differ widely from the norm seen in the "average" internal medicine practice.

Justification

The theoretical justification for this research was to study the effect of an element of organizational structure, centralization, on production, measured by patient satisfaction. Patient satisfaction is a potentially important factor in health care in that it may influence whether or not a patient seeks medical help (thereby affecting negatively the health status of many others in the

case of an infectious disease), whether the patient complies with the therapy recommended, and whether the patient maintains a continuing relationship with the physician. The growth of consumerism as a social movement in the delivery of health services is based on the attitudes of patients toward physicians and their satisfaction with health services provided.

This design unified the theories of Hage with the instrument developed by Ware and others to assess the role played by the organization in the quality of care outcome represented by patient satisfaction. Feedback from patients received in the form of responses to this questionnaire may be valuable in planning quality of care improvements through alterations to organizational policies and procedures. Results of the analysis of data gathered may be used by individual clinic managers in reviewing the group practice utilization potential and staff performance.

Delimitations

The boundaries of this research were:

1. This research did not incorporate investigations to examine the other primary dimensions of organization structure discussed by Hage (1965), Pugh et al. (1972), and others.

2. The dimension of organization structure used in this research, centralization, was measured only in the manner operationalized by Hage (1965) (cf. Instrument) as the number of levels of decision makers in the hierarchy of authority.

3. Other criteria to evaluate performance identified by Pugh (1972) and others were not used in this study. These included finance, costs, time, labor relations, and output volume.

4. This research did not measure the effect of centralization on the employees of the clinics nor on other members of their organization.

Summary

This study was designed to utilize a random sample of internal medicine patients representative of three organizations proximal to the Texas Medical Center and differing in levels of centralization, and to assess the effect of centralization on patient satisfaction with services. The specialty of internal medicine was selected since the questionnaires were developed and validated largely in one of the primary care areas, and results obtained from that type of practice could be more likely applied to other specialty situations than if they had been done on a less frequently seen area of medical practice. By

selecting three clinics proximal to the Texas Medical Center, where a national standard of care may be assumed to be applied to diagnosis and treatment, it was hoped the results of this research could be most meaningful to future readers.

CHAPTER IV

METHODS

This chapter explains the patient sampling rationale and procedure, the instrumentation procedure, and the instructions to the participating patients.

The sample selection process for the observation units (patients) was based on random sampling in each of the three group practices participating, the k samples of the study. Patient records data were retrievable directly from the computer used for billing only in Group Three, where a random numbers table was used to select patient chart numbers. In the other two group practices, although computers are used for billing purposes, software was not available to allow random selection of patients from only the internal medicine specialty. Therefore, a random pulling of every nth chart was accomplished from the internal medicine clinic patient file rooms. This technique allowed every unit in the populations an equal and reasonable chance of being included in the study (cf. Cochran 1951). A sample of 120 was selected from each group practice, totaling 360 in all. Addresses out of the country were eliminated from those chosen to avoid increased postage charges, to save time in responding to the questionnaire,

and to increase the likelihood of response since these patients are less likely to be representative of the whole group. Lists were compiled of names and addresses of those patients selected for the study in order that second contacts could be made if necessary.

The twenty-nine item patient satisfaction questionnaire short form (the medical opinions questionnaire) and the patient characteristics battery, items thirty to forty-four (cf. appendix B), were sent to each patient along with a cover letter from the physician in charge of the clinic requesting their time and participation (cf. appendix A) on the letterhead stationery of that group practice. Also included was a stamped, return envelope addressed to that physician to facilitate subject response. The questionnaires contained no identifying numbers or marking of any kind to link them with the patients to whom they were sent. The investigator retrieved the batches of completed questionnaires directly from each clinic for coding and data analysis.

Although it was planned to use a "reminder post card" if a response of less than twenty-five percent was achieved, the one group practice in which this occurred declined permission to recontact all of the patients selected. The questionnaires were mailed over the

Thanksgiving holiday of 1981, and returns covered the months of December and January of 1982. The response rate may have been influenced by the holiday period activity conflicts.

CHAPTER V

FINDINGS

Data Analysis

The processing of statistical analyses of the response data from the questionnaire forms was accomplished by the use of the Decsystem-20 computer at Texas Woman's University. The software package executed was the Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, and Bent 1975). The statistics used were applied to determine whether the results obtained could be attributed to chance distribution, or whether there was a significant difference between the three groups following the question: Does the level of patient satisfaction differ in mean as a function of the level of centralization in the organization?

Data were transferred from the study questionnaires to data accumulation worksheets (cf. appendix E) and entered into the computer. The data file of responses was accumulated in tabular form by the computer (cf. appendix F). The instrument was scored for positive questions as

follows: strongly agree equals five, agree equals four, don't know equals three, disagree equals two, and strongly disagree equals one. All negative questions were scored in the reverse: strongly agree equals one, agree equals two, don't know equals three, disagree equals four, and strongly disagree equals five.

A total of ninety-seven subjects (n) responded to the request to participate in the study: thirty-four from Group Practice One (a 28 percent return), thirty-seven from Group Practice Two (a 30.8 percent return), and twenty-six from Group Practice Three (a 21.7 percent return). A 25 percent return had been the minimal goal of the researcher.

Mean response scores from the twenty-nine item medical opinions questionnaire grouped into content constructs representing the primary sources of satisfaction and dissatisfaction and the construct score for each group practice are reported in table 5. These responses to the twenty-nine item medical opinions questionnaire form the numerical values for analysis by application of the nonparametric statistic to make the decision to reject or fail to reject the null hypothesis: There is no statistically significant difference in the level of mean patient satisfaction as a function of the level of centralization.

TABLE 5

MEAN QUESTIONNAIRE RESPONSES TO ITEMS ON MEDICAL OPINIONS
QUESTIONNAIRE, SCORES FOR EACH OF SIX CONSTRUCTS,
TOTAL OF CONSTRUCT SCORES, AND NUMBER OF RESPONDENTS
BY GROUP PRACTICE ONE THROUGH THREE

Construct Measured	Group Practice 1	Group Practice 2	Group Practice 3
I. Access Satisfaction			
1. Emergency Care (-)	3.15	3.38	3.27
6. Phone Availability (-)	3.53	4.14	4.04
10. Office Hours (+)	3.42	3.54	3.58
12. Availability of Care (+)	3.50	3.87	3.80
16. Travel Time (-)	2.94	3.34	3.00
19. Answers to Questions (+)	3.31	3.70	3.48
21. Get an Appointment (+)	3.39	3.30	3.04
23. Waiting time (-)	3.03	2.89	2.04
Construct Score	25.59	27.95	25.73
II. Continuity Satisfaction			
24. Importance to Self (+)	4.35	4.30	4.31
III. Financial Aspects Satisfaction			
7. Reasonable Charge (+)	3.18	3.38	3.16
25. Cost of Care (-)	3.00	2.81	2.85
28. Billing Problems (-)	2.71	2.97	2.81
29. Unnecessary Ex- penses (+)	3.06	3.00	2.42
Construct Score	11.94	11.84	11.12

TABLE 5 (Continued)

Construct Measured	Group Practice 1	Group Practice 2	Group Practice 3
IV. Technical Aspects Satisfaction			
3. Office Facilities (-)	3.62	4.00	3.62
8. Confidence in Doctors (+)	4.21	3.84	3.62
11. Take Risks (-)	3.27	3.57	3.08
14. Thorough Treatment (-)	2.46	2.77	2.71
17. Careful Exam (+)	3.55	3.27	3.20
22. Ability of Doctors (-)	3.56	3.51	3.15
Construct Score	20.38	20.81	18.92
V. Art of Care Satisfaction			
2. Prevent Worrying (+)	4.03	3.68	3.58
5. Rude Behavior (-)	3.71	3.62	3.46
15. Friendly Manner (+)	4.30	3.87	3.80
20. Respect for Patient (-)	2.88	2.83	2.71
26. Recommend Surgery (+)	3.56	2.92	2.85
27. Office Staff Behavior (+)	4.18	3.84	4.04
Construct Score	22.35	20.60	20.08
VI. Overall/General Satisfaction			
4. Care in General (-)	4.09	4.08	4.08
9. Improve Care (Others) (-)	2.97	2.70	2.92
13. Perfect Care (Mine) (+)	3.58	3.65	3.46
18. Improve Care (Mine) (-)	2.67	3.11	2.48
Construct Score	13.12	13.54	12.58
Construct Score Total	97.74	99.03	92.73
Number of Respondents	34	37	26

The statistic used, the Kruskal-Wallis one-way analysis of variance by ranks, was calculated using the subprogram NPAR TESTS in the SPSS Update 7-9 (Nie and Hull 1981:237-238). This test is used to decide whether k independent samples are from different populations (Siegel 1956:184). Since sample values almost invariably differ somewhat, the question is whether the differences observed merely represent chance variations which might be expected among several samples from the same population or whether they signify genuine differences. The Kruskal-Wallis technique tests the null hypothesis that the k samples come from the same population or from identical populations with respect to averages. The test requires at least ordinal measurement of the variable to be examined. The formula for the Kruskal-Wallis test can be found in Siegel (1956:185). If H_0 is true, then H (the statistic used in the Kruskal-Wallis test and defined by the formula) is distributed as chi square with df = k - 1. The Kruskal-Wallis test is distribution free, that is, it assumes the variable under study has an underlying continuous distribution. The questionnaire used to measure patient satisfaction (cf. appendix B), the dependent variable, contains in the first twenty-nine items ordinal data ranked by Likert scale responses.

The calculated value of H (2.94) did not exceed the critical value of 5.99 (Siegel 1956:249) ($p \leq 0.05$); the significance reported was at the 0.23 level. Therefore, the null hypothesis (H_0), there is no statistically significant difference in the level of mean patient satisfaction as a function of the level of centralization, is not rejected. The research hypothesis (H_r), the level of mean patient satisfaction differs as a function of the level of centralization, is rejected. The researcher concludes the units of observation come from three group practices that are alike with respect to averages of total patient satisfaction (cf. table 6).

Significant differences are observed among the three groups in the personal characteristics of respondents, however. Detailed inspection of responses to the patient characteristic battery, items thirty to forty-four, which are at least ordinal data, is available in appendix G presented as a frequency distribution computed by group practice. These personal characteristics of respondents were tabulated by using the subprogram FREQUENCIES from the SPSS software package (Nie et al. 1975:194-202). Analysis of the variance in age between respondents of the three group practices (cf. appendix H) by application of the Kruskal-Wallis one-way analysis of variance by ranks resulted in differences significant at the $p = 0.003$ level (cf. table 7). A similar examination of the variance in

TABLE 6

TOTAL PATIENT SATISFACTION BY AMBULATORY CARE GROUP PRACTICE
USING KRUSKAL-WALLIS 1-WAY ANOVA

Category Label	Results			Total Cases	H Value	Degrees of Freedom	Significance Level (\underline{p})	H
Group	1	2	3					
Number	34	37	26	97	2.94	2	0.23	Fail to Reject
Mean Ranks	51.84	52.08	40.90					

NOTE: Critical value of \underline{H} must be 5.99 ($\underline{p} < 0.05$) to be significant.
 Sidney Siegel. Non Parametric Statistics for the Behavioral Sciences.
 (New York: McGraw Hill Book Co., 1956:249)

TABLE 7

ANALYSIS OF AGE VARIANCE BY AMBULATORY CARE GROUP PRACTICE
USING KRUSKAL-WALLIS 1-WAY ANOVA

Category Label	Results			Total Cases	H Value	Degrees of Freedom	Significance Level (\underline{p})
Group Number	1 33	2 36	3 56	94	11.95	2	0.003
Mean Ranks	58.44	47.24	33.44				

NOTE: Critical value of H must be 9.21 ($p < 0.01$) to be significant.
 Sidney Siegel. Non Parametric Statistics for the Behavioral Sciences.
 (New York: McGraw Hill Book Co., 1956:249)

education of respondents between the three group practices (cf. appendix I) was significant at the $p < 0.0001$ level (cf. table 8); in addition, the variance in income of respondents between the groups (cf. appendix J) was also significant at the $p < 0.0001$ level (cf. table 9).

These three major respondent characteristics, age, education, and income also were statistically significant when measured as independent variables against the dependent variable of patient satisfaction with art of care, or provider conduct, consisting of responses to items two, five, fifteen, twenty, twenty-six, and twenty-seven of the medical opinion questionnaire. Kruskal-Wallis analysis of art of care by age of respondent was statistically significant at the $p = 0.03$ level (see appendix K), by education of respondent at the $p = 0.044$ level (see appendix L), and by income of respondent at the $p = 0.015$ level (see appendix M).

In summary, the research results did not support the research hypotheses at the preset probability level of 0.05 or less. Differences in the level of mean patient satisfaction had a chance probability of $p = 0.23$ as a function of the level of centralization. Significant differences, however, were observed in three major respondent characteristics: age, education level, and

TABLE 8

ANALYSIS OF EDUCATION VARIANCE BY AMBULATORY CARE GROUP PRACTICE
USING KRUSKAL-WALLIS 1-WAY ANOVA

Category Label	Results			Total Cases	H Value	Degrees of Freedom	Significance Level (\underline{p})
Group Number	1 32	2 35	3 25	92	24.099	2	<0.0001
Mean Ranks	29.47	49.66	63.88				

NOTE: Critical value of H must be 9.21 ($p < 0.01$) to be significant.
 Sidney Siegel. Non Parametric Statistics for the Behavioral Sciences.
 (New York: McGraw Hill Book Co., 1956:249)

TABLE 9

ANALYSIS OF INCOME VARIANCE BY AMBULATORY CARE GROUP PRACTICE
USING KRUSKAL-WALLIS 1-WAY ANOVA

Category Label	Results			Total Cases	H Value	Degrees of Freedom	Significance Level (\underline{p})
Group	1	2	3				
Number	32	33	24	89	23.584	2	<0.0001
Mean Ranks	27.25	54.91	55.04				

NOTE: Critical value of \underline{H} must be 13.82 ($\underline{p} < 0.01$) to be significant.
 Sidney Siegel. Non Parametric Statistics for the Behavioral Sciences.
 (New York: McGraw Hill Book Co., 1956:249)

family income as they differed between the group practices and also as independent variables when measured against the factor patient satisfaction with art of care.

CHAPTER VI

DISCUSSION AND RECOMMENDATIONS

Although the primary purpose of this research has been to examine the question: does the level of patient satisfaction differ in mean as a function of the level of centralization in the organization, other research questions have been raised and answered as a result. Clearly, the centralization level was not found in this study to have a statistically significant effect upon the amount of production, the element of quality of care measured in this study by the patient satisfaction questionnaire (cf. appendix B) containing Likert-scale ranked responses by the patients of the three participating group practice ambulatory care clinics. The null hypothesis (H_0), there is no statistically significant difference in the level of mean patient satisfaction as a function of the level of centralization, is not rejected.

It may be that the centralization levels identified do not affect the behavior of physicians. Perhaps this is unusual, or there may be circumstances where the levels of centralization do affect the behavior or performance of providers. Additionally, the exercise of the responsibility

perception of the physician may override organizational influences in a behavioral equivalent to the principle of academic freedom such that no effect of level of centralization is reflected in medical practice as performance outcomes. Even large organizations may not behave in a mechanistic style with respect to medical practitioners. Perhaps organizations also behave in more than one way (Neuhauser 1978), with a "pure" mechanistic style towards nonphysicians and an organic or adaptive style toward physicians, using contingency theory of management (Durbin and Springall 1974). Therefore, the levels of centralization of the organization may make a difference in other outputs but not in the way the medical practitioners behave.

Several other variables were significant when measured between the three group practices and between each other when compared to the factor of patient satisfaction with the art of care. These variables are age, education, and income of the respondent's family. Significant differences in these three respondent characteristics (cf. tables 7, 8, and 9) are having an effect on the level of patient satisfaction with art of care (cf. appendices K, L, and M), one element of total satisfaction. Therefore, these characteristic differences may be influencing the total

satisfaction outcome of this study. The persons with the least income and education and the greatest age were in Group One. Conversely, the persons with the most income and education and the least age were in Group Three. Since over all groups persons with the most income and education and the least age were the least satisfied with provider conduct, the fact that these three variables are similarly represented by the group practice with the least patient satisfaction, Group Three, is to say that responses on the component of art of care, provider conduct, may have brought down the total level of satisfaction by that group. It also follows that since over all groups persons with the least income and education and the most age were the most satisfied with provider conduct, responses on the art-of-care component may have raised the total level of satisfaction in the group in which these variables are present, Group One.

One benefit resulting from the acquisition of detailed respondent characteristics data by this study is the insight provided to the group practice management regarding their consumer market. For example, a group practice with a significantly geriatric, low-income patient population may want to plan health care marketing strategies to offset potential reductions in federal sponsorship of

support in the Medicare and Medicaid programs. Knowledge of the education level of the patient respondents when compared to the understanding of the bill may be of use in the designing of new forms of reduced complexity: one-third of the patients responding in Group Practice One found understanding the bill to be somewhat difficult or very difficult. Similarly, fifty-seven percent of those responding in that same group practice had problems with their bills in the last six months (between June and November, 1981).

Findings regarding responses to individual questions (cf. table 5) hold useful information for clinic managers:

1. Although all three groups had indicated to the researcher their patients accepted seeing different physicians on successive visits, the highest mean scores in the study were in response to the question regarding continuity, item twenty-four, at very similar rates above the level of four in the strongly-agree range, "Seeing the same doctor on every visit is very important to my care."

2. Responses to question twenty-three in Group Practice Three were the lowest in the study. In the open-ended portion of question forty-five, patients in this same group frequently expressed negative comments regarding waiting a long time to see the doctor. The patients of this

group were shown to be those with the highest income and education, possibly indicating that they, too, place a premium value on their own time as does the physician.

3. Questions with similar subject matter, yet worded in opposite direction with one positive and the other negative, proved to be interesting following the acquiescent and opposition response sets discussed by Ware (1978) (cf. Review of the Literature). For example, questions fourteen and seventeen address the thoroughness of doctors in their treating or examining patients with fourteen unfavorably and seventeen favorably worded. The difference in mean scores between these questions in each group was highest (1.09) in the group with the lowest educational level, Group One, and lower in the other two groups with higher educational levels, Groups Two (.50) and Three (.49). Ware (1978) reported broad differences in responses of mean satisfaction scores based on balanced and unbalanced scales in groups with educational attainment ranging from zero to eight years (cf. Figure 1). In this study Group One is the only group with respondents indicating the last grade completed being between grades zero to eight at the adjusted frequency level of thirty-four percent; Groups Two and Three had no responses at that level of education.

Comparison of the results of this study with those reported by Ware and colleagues (Ware, Davies-Avery, and Stewart 1977) in their summary of fourteen articles in the literature that reported demographic and socioeconomic correlates of patient satisfaction (cf. Review of the Literature) follows:

1. Age: Older persons tended to be more satisfied with the conduct of providers ($p = 0.03$), but neither more nor less satisfied with both access ($p = 0.67$) to care and outcomes of care ($p = 0.46$) than persons of other age groups.

2. Education: Less educated persons tended to be neither more nor less satisfied with medical care in general ($p = 0.49$) but were more satisfied with conduct of providers ($p = 0.04$), the opposite tendency from that reported by Ware et al. (1977).

3. Family Size: Persons in larger families showed a slight tendency to be less satisfied with access to care ($p = 0.20$).

4. Income: Lower income persons tended to be neither more nor less satisfied with access ($p = 0.88$) and outcomes of care ($p = 0.42$), but did tend to be more satisfied with conduct of providers ($p = 0.015$).

5. Occupational Level: The researcher did not assign numerical identification to the kind of work reported done by the chief wage earner, however, inspection of higher income and education levels appeared to correlate with higher levels of occupation. If this inference is made, persons at higher occupational levels showed a slight tendency to be less satisfied with medical care in general with education ($p = 0.166$) and income ($p = 0.179$).

6. Sex: Women tended to be neither more nor less satisfied in general than did men. A Mann-Whitney U test was executed on the variable, sex (cf. appendix N) using the subprogram NPAR TESTS in the SPSS Update 7-9 (Nie and Hull 1981:234). This statistic, $U = 1050.0$, did not exceed the preset critical value of $p \leq 0.05$ (Siegel 1956:119); the significance reported was $p = 0.818$.

The effect of limitations (cf. Design) on the outcome of the research considers the following:

1. The perception of the respondents to the questionnaire on medical opinions concerning quality of medical care in general, if evaluated by the mean scores received on the content construct on overall satisfaction, indicates little variation (cf. table 5). True quality of care provided cannot be measured by this questionnaire nor can it be assumed that these characteristically diverse

groups would be as satisfied as they tested in this study if treated by providers across group practice lines.

2. Since the lower socioeconomic levels of patients tend to use the emergency room for routine medical care, emergency room referrals may be having an effect on the sociodemographic patient mix in the three groups. The administrator in Group Three says this group practice has no Medicare nor Medicaid patients. Group Two also has almost none, according to the clinic manager. Group One, which performs emergency room follow-ups from a Hill-Burton hospital, serves a significant number of both Medicare and Medicaid patients.

3. The limitation identified regarding the length of time patients have been in continuous association with a given clinic (cf. Study Design) did not prove statistically significant with total patient satisfaction as a dependent variable and length of time, the independent variable ($p = 0.21$), on the Kruskal-Wallis test. Curiously, however, length of years lived in this area was significantly related to total patient satisfaction ($p = 0.045$) on the Kruskal-Wallis test. Patients living three years or less and thirteen years or longer in the area were more satisfied than persons between those ranges. Significant differences existed between the groups in length of time their patients

had lived in the area ($p = 0.029$). The differences may be influenced by 78.8 percent of Group One respondents having lived in the area thirteen or more years and 6.1 percent of their group, one to three years (cf. appendix G). However, all three groups show fewer patients in the four-to-twelve-year range than at the higher and lower ends of the spectrum. Ware et al. (1977) reports total years in residence as positively correlated with satisfaction with medical services in general.

4. The variable of frequency of visits compared with total satisfaction was significant ($p = 0.199$) using the Kruskal-Wallis test. The tendency seemed to agree with the idea that less satisfied patients may not visit as frequently as more satisfied patients (cf. Design). Mean rank scores comparing total satisfaction with frequency of patient visits in the last six months show higher satisfaction scores for patients with more frequent visits. Patients with zero to two visits had a mean rank score of 44.63, patients with three to six visits had a score of 53.93, and seven or more visits had a score of 58.00 to indicate greater satisfaction the more frequent the visits.

5. Another possible influence on the research outcome is the presence of special patient groups in the population of a given clinic. The researcher has been

informed, for example, of renal dialysis patients covered by Medicare who are followed by Group Practice One. In addition, that same practice has a number of long-term diabetes patients who have been seen as outpatients from the private hospital staffed currently by that group of physicians who are representative of the characteristics found in that clinic which have been significantly different from the others. This uncontrolled variable of patient-subspecialization may have had an effect in the total satisfaction for reasons previously covered.

Future research of possible benefit to these clinics could be performed on groups of patients who have been matched by sociodemographic characteristics found significant in this study - age, education, and income - to identify patient satisfaction with particular aspects of the care dynamic at regular intervals. Revisions or modifications in procedure or policy could be evaluated for satisfaction across the sociodemographic spectrum of patient characteristics in any given group practice. Marketing plans may be better able to appeal to a younger, better educated, or more affluent patient knowing that this patient has demonstrated a preference for certain aspects of care. The importance of continuity to the patient may be further explored by planning service coverage to maximize the

opportunity for repeat visits to the same physician. Special effort to serve patients in time efficient methods could be tested with follow-up questionnaires mailed to the patient's residence after the visit. The area of employee satisfaction or provider satisfaction could prove very meaningful to the staff morale of the group practices. It would be of interest from the centralization theory standpoint to evaluate whether group practices in more bureaucratic organizations differ with those in the private sector in provider satisfaction and employee morale.

APPENDIX A

LETTERS INTRODUCING QUESTIONNAIRE TO PATIENTS



THE UNIVERSITY OF TEXAS
HEALTH SCIENCE CENTER AT HOUSTON

MEDICAL CENTER

DEPARTMENT OF INTERNAL MEDICINE

Sondra Khalil, M.D.
Instructor
Division of General Internal Medicine

Post Office Box 20708
Houston, Texas 77025
(713) 792-5144

November 25, 1981

Dear Patient:

In an effort to provide the highest quality medical care possible to our patients, we would appreciate approximately fifteen minutes of your time to respond to the enclosed questionnaire. Your opinions regarding medical care are important to us. The more we know about how you view our services, the better we can respond to your wishes.

We want to stress that these answers are needed for statistical purposes only and your participation is completely voluntary. The questionnaire contains no identifying name or numbers and your answers will be used only when combined with those of many other people. Please do not write your name on the questionnaire so it will remain completely confidential.

Your cooperation in telling us your medical care opinions is most appreciated. A stamped, self-addressed return envelope is enclosed for your convenience.

Sincerely yours,

Sondra Khalil, M.D.
Instructor
Division of General Internal Medicine

SK/ktg
Enclosure

Baylor College of Medicine

BAYLOR INTERNAL MEDICINE ASSOCIATES • 713 790-6032



November 25, 1981

Dear Patient:

In an effort to provide the highest quality medical care possible to the patients of Baylor Internal Medicine Associates, I would appreciate approximately fifteen minutes of your time to respond to the enclosed questionnaire. Your opinions regarding medical care are important to us. The more we know about how you view our services, the better we can respond to your wishes.

We want to stress that these answers are needed for statistical purposes only and your participation is completely voluntary. The questionnaire contains no identifying name or numbers and your answers will be used only when combined with those of many other people. Please do not write your name on the questionnaire so it will remain completely confidential.

Your cooperation in telling us your medical care opinions is most appreciated. A stamped, self-addressed return envelope is enclosed for your convenience.

Sincerely,

William C. Lockett M.D.

William C. Lockett, M. D.
Assistant Professor of Medicine
Baylor College of Medicine

James W. Sawyer M.D.

James W. Sawyer, M. D.
Assistant Professor of Medicine
Baylor College of Medicine

Howard K. Wilson M.D.

Howard K. Wilson, M. D.
Assistant Professor of Medicine
Baylor College of Medicine

JWS/mef

enclosure

November 24, 1981

KELSEY-SEYBOLD CLINIC, P.A.
6624 FANNIN STREET
HOUSTON, TEXAS 77030
TELEPHONE (713) 797-1551

Dear Patient:

In an effort to provide the highest quality medical care possible to our patients, we would appreciate approximately fifteen minutes of your time to respond to the enclosed questionnaire. Your opinions regarding medical care are important to us. The more we know about how you view our services, the better we can respond to your wishes.

We want to emphasize that these answers are needed to assist us in identifying possible problem areas and your participation is completely voluntary. The questionnaire contains no identifying name or numbers and will be used only when combined with those of many other people. Please do not write your name on the questionnaire so it will be completely confidential.

Your cooperation in telling us your medical care opinions is most appreciated. A stamped return envelope is enclosed for your convenience.

Sincerely yours,

A handwritten signature in cursive script, reading "Stanton P. Fischer".

Stanton P. Fischer, M.D., F.A.C.P.
Chairman, Executive Board

SPF:cmr
Enclosures

APPENDIX B

PATIENT SATISFACTION
(MEDICAL CARE OPINIONS) QUESTIONNAIRE

MEDICAL CARE OPINIONS

INSTRUCTIONS: Here are some things patients say about their medical care. Your consent to participate in this study will be indicated by returning this completed questionnaire. Please read each statement carefully, thinking about the medical care you have received lately. If you have not received care recently, think about what you would have expected if you had gone to get medical care. This is not a test of what you know. There are no right or wrong answers. We are only interested in your opinions or best impression. Please circle only one number on each line.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
1. In an emergency, it's very hard to get medical care quickly.	1	2	3	4	5
2. Doctors always do their best to keep the patient from worrying.	1	2	3	4	5
3. My doctor's office lacks some things needed to provide complete medical care.	1	2	3	4	5
4. I'm very satisfied with the medical care I receive.	1	2	3	4	5
5. Sometimes doctors act rude toward their patients.	1	2	3	4	5
6. It's difficult to reach my doctor's office by phone.	1	2	3	4	5
7. The amount charged for medical care services is reasonable.	1	2	3	4	5
8. I have a great deal of confidence in doctors.	1	2	3	4	5
9. Most people receive medical care that could be better.	1	2	3	4	5
10. Office hours when you can get medical care are good for most people.	1	2	3	4	5

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
11. Sometimes doctors take unnecessary risks in treating their patients.	1	2	3	4	5
12. I can get medical care whenever I need it.	1	2	3	4	5
13. The care I have received recently from doctors is just about perfect.	1	2	3	4	5
14. Doctors should be more thorough in treating their patients.	1	2	3	4	5
15. Doctors treat their patients in a friendly manner.	1	2	3	4	5
16. It takes me a long time to get to the place where I receive medical care.	1	2	3	4	5
17. Doctors are very careful to check everything when examining their patients.	1	2	3	4	5
18. There are things about the medical care I receive that could be better.	1	2	3	4	5
19. If I have a medical question, I can reach someone for help without any problem.	1	2	3	4	5
20. Doctors should treat their patients with more respect.	1	2	3	4	5
21. It's easy to get an appointment for medical care right away.	1	2	3	4	5

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
22. I have some doubts about the ability of the doctors I've seen.	1	2	3	4	5
23. People are usually kept waiting a long time when they are at the doctor's office.	1	2	3	4	5
24. Seeing the same doctor on every visit is very important to my care.	1	2	3	4	5
25. The fees doctors charge are too high.	1	2	3	4	5
26. Doctors never recommend surgery (an operation) unless there is no other way to solve the problem.	1	2	3	4	5
27. The doctor's office staff treats patients with courtesy.	1	2	3	4	5
28. It is usually very difficult to have a billing problem corrected.	1	2	3	4	5
29. Doctors always avoid unnecessary patient expenses.	1	2	3	4	5

Now we would like to ask you some additional questions. Again, we want to stress that these answers are needed for statistical purposes only. The information will be used only by the persons engaged in the survey and will not be disclosed or released to others for any purpose. Your answers will be used only when combined with those of many other people.

30. Your sex is: 1) ☐ Female
2) ☐ Male

31. How many persons, including yourself, are in your family? (Count only those living in your household now.)

Persons

32. How old are you? Years

33. a. How long have you lived in this area: Years

b. U.S. Citizen: ☐ Yes
☐ No

c. If not U.S. Citizen, what is your national origin?

34. What is the last grade that you completed in school?
(Circle last year.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<u>grade school</u>								<u>high school</u>				<u>college</u>				<u>post-graduate</u>			

35. Are you currently employed (check one only)

1) ☐ Yes, full time
2) ☐ Yes, more than half time
3) ☐ Yes, half time or less
4) ☐ No

36. Are you, or is someone else, the chief wage earner of the household?

1) ☐ Me
2) ☐ Someone else

37. If you are not the chief wage earner, what is the last grade the chief wage earner completed in school?

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<u>grade school</u>								<u>high school</u>				<u>college</u>				<u>post-graduate</u>			

38. What kind of work does the chief wage earner of the household do?

39. (IF RETIRED OR NOT EMPLOYED) What was the last job he (she) held?

40. How many visits have you had to this clinic in the last 6 months?

- | | |
|--|--|
| 1) <input type="checkbox"/> None | 5) <input type="checkbox"/> 5-6 visits |
| 2) <input type="checkbox"/> One visit | 6) <input type="checkbox"/> 7-8 visits |
| 3) <input type="checkbox"/> Two visits | 7) <input type="checkbox"/> More than 8 visits |
| 4) <input type="checkbox"/> 3-4 visits | |

41. How long have you been a patient in this clinic?

- 1) ☐ Less than 2 months
- 2) ☐ 2-5 months
- 3) ☐ 6-11 months
- 4) ☐ 1-2 years
- 5) ☐ Between 2-3 years
- 6) ☐ More than 3 years

42. How easy or difficult do you usually find it to understand the bills you receive for your care?

- 1) ☐ Very easy, no trouble
- 2) ☐ Somewhat easy, virtually no trouble
- 3) ☐ Neither easy nor difficult
- 4) ☐ Somewhat difficult, sometimes have trouble
- 5) ☐ Very difficult, I cannot usually understand the bill
- 6) ☐ Don't know, I have never seen a bill

43. During the last 6 months, did you have any problems with your bill? Were you satisfied with the way they were taken care of?

- 1) ☐ I did not have any problems
- 2) ☐ Yes, I had problems but was very satisfied with the way they were taken care of
- 3) ☐ Yes, I had problems, but was neither satisfied nor dissatisfied with the way they were taken care of.
- 4) ☐ Yes, I had problems, and was dissatisfied with the way they were taken care of
- 5) ☐ Don't know, I have never seen a bill

44. What is the total yearly income for your family? (Include all the income for any members of your immediate family who are living with you.)

- | | |
|--|--|
| 1) <input type="checkbox"/> No income | 6) <input type="checkbox"/> \$15,000 to \$19,999 |
| 2) <input type="checkbox"/> Under \$7,000 per year | 7) <input type="checkbox"/> \$20,000 to \$29,999 |
| 3) <input type="checkbox"/> \$ 7,000 to \$ 8,999 | 8) <input type="checkbox"/> \$30,000 to \$39,999 |
| 4) <input type="checkbox"/> \$ 9,000 to \$11,999 | 9) <input type="checkbox"/> \$40,000 to \$49,999 |
| 5) <input type="checkbox"/> \$12,000 to \$14,999 | 10) <input type="checkbox"/> \$50,000 or more |

45. If you were to describe your Kelsey Seybold Clinic experiences to a friend, you would say:

APPENDIX C

LETTERS FROM GROUP PRACTICES AGREEING TO PARTICIPATE

THE UNIVERSITY OF TEXAS
HEALTH SCIENCE CENTER AT HOUSTON

MEDICAL CENTER

DEPARTMENT OF INTERNAL MEDICINE

September 25, 1981

Post Office Box 20708
Houston, Texas 77025
(713) 792-5144

Sondra Khalil, M.D.
Instructor
Division of General Internal Medicine

Mrs. Katherine Goldknopf
Department of Surgery
University of Texas Medical School
Houston, Texas 77030

Dear Mrs. Goldknopf:

As has been discussed this is to indicate the cooperation and willingness of the Department of Internal Medicine to participate and provide data for the research project "Effect of Organization Centralization on Patient Satisfaction with Ambulatory Care Group Practice."

We look forward to working with you.

Sincerely yours,



Sondra Khalil, M.D.
Instructor
Division of General Internal Medicine

SK/kce

KELSEY-SEYBOLD CLINIC, P.A.
6624 FANNIN STREET
HOUSTON, TEXAS 77030
TELEPHONE (713) 797-1551

September 29, 1981

Ms. Katherine Goldknopz
2818 Fairhope
Houston, Texas 77025

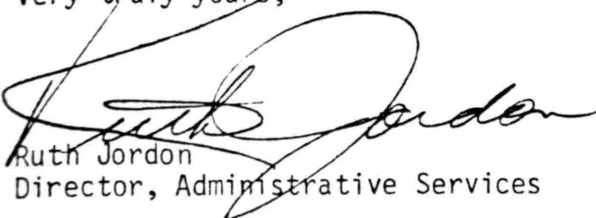
RE: Thesis on Patient Satisfaction in Outpatient Clinic Environment

Dear Ms. Goldknopz,

Kelsey-Seybold Clinic, P.A. is interested in a cooperative effort to secure information from patients relative to their satisfaction with the physician, as well as paramedical employees and the medical facility itself. We are pleased to continue to assist and collaborate with the medical care opinion questionnaires to be mailed, to determine the patient's satisfaction.

We are very interested in obtaining the results of this survey once it has been completed.

Very truly yours,



Ruth Jordon
Director, Administrative Services

RJ:cmr

October 7, 1981

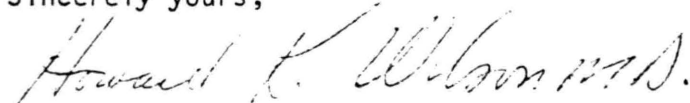
TO WHOM IT MAY CONCERN

Baylor College of Medicine and myself are both very willing to participate in the study currently being undertaken by Katherine T. Goldknopf on "Effective Organization Centralization on Patient Satisfaction with Ambulatory Care Group Practice." After reading her thesis proposal, I feel this is a well-thought out program and one in which it would be very interesting to take part.

My willingness to participate in this thesis includes a desire on my part to understand why and how our patients are satisfied by this group practice; I feel this may be a beneficial study in terms of this group practice.

If there are any further questions, please feel free to contact me.

Sincerely yours,



Howard K. Wilson, M. D.
Medical Director
Ambulatory Care Clinic
Baylor College of Medicine

HKW/mef

APPENDIX D

APPROVALS BY HUMAN SUBJECTS REVIEW COMMITTEES

TO WHOM IT MAY CONCERN:

The thesis entitled "Effect of Organization Centralization on Patient Satisfaction with Ambulatory Care Group Practice" by Katherine Goldknopf was judged to be exempt from Human Subjects Review because it involves the use of a questionnaire acquired anonymously.



W. A. Russell, Dr.P.H.
Committee Chairman

BAYLOR COLLEGE OF MEDICINE

TEXAS MEDICAL CENTER

HOUSTON, TEXAS 77025

DEPARTMENT OF INTERNAL MEDICINE
METHODIST OFFICE (713) 790-3215
BAYLOR OFFICE (713) 790-4761

November 11, 1981

Katherine T. Goldknopf, M.S.
c/o Howard K. Wilson, M.D.
Department of Internal Medicine
Baylor College of Medicine
Houston, Texas 77030

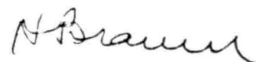
Dear ~~Dr.~~ Ms. Goldknopf:

The Baylor Institutional Review Board for Human Research is pleased to inform you that your research proposal Effect of Organization Centralization on Patient Satisfaction with Ambulatory Care Group Practice.

was approved on November 10, 1981 according to institutional guidelines and provided it receives the unaltered approval of the institutional committee in which it is involved.

1. Continued review will be required
 - ☐ a. After each subject's exposure
 - ☐ b. Quarterly
 - ☐ c. Semi-annually
 - ☐ d. Annually
 - ☒ e. Change in Protocol
 - ☒ f. Development of unexpected problems or unusual complications
 - ☒ g. Other - Upon completion of the study
2. Method of Review
 - ☒ a. Questionnaire (example enclosed)
 - ☐ b. New Protocol
 - ☐ c. Interview with principal investigator
 - ☐ d. Other

Sincerely yours,



Harold Brown, M.D., Chairman
Baylor Institutional Review Board
for Human Research

HB:ib

Questionnaire for Continuing Review

94

Title Research Project: _____

Investigator: _____

Name of Person Completing Questionnaire: _____

Interval covered by questionnaire: _____

List and comment on any unexpected complications or other problems arising from this research project.

Any change in protocol since last review: Yes ☐ No ☐

If yes, specify:

Approved:

Chairman, Department of

Signed _____
(Principal Investigator)

Application for Review to Renew Protocol

95

1. If significant changes are made in the research proposal, a new application must be submitted for review as for all new protocols.
2. If protocol or proposal is unchanged since initial review and approval, apply simply as follows:
 - a. Title of Proposal.
 - b. Investigators.
 - c. Department.
 - d. Research proposal - (state that proposal is same as that submitted and approved, giving date*).
 - e. List emergent problems or unexpected complications, if any.
 - f. Signatures of principal investigator and Chairmen of involved departments.

* Due to change in requirements of informed consent by DHEW. some previously approved protocols will need new informed consent forms to conform to these requirements. Be sure and check to see that yours conforms to Guides of Initial Review, page 9. If they do not, a new form conforming to these guidelines will be required (35 copies).



NOTICE OF APPROVAL

November 24, 1981

☒ To Initiate Research
☐ To Initiate Changes

FROM: Samuel Dreizen, D.D.S., M.D.
Chairperson

A handwritten signature in cursive script, reading "Samuel Dreizen".

RE: HSC-TWU-MS-81-005 - "Effect of Organization Centralization on Patient
Satisfaction with Ambulatory Care Group Practice"
P.I.: Katherine Goldknoph, graduate student

REVIEWED: November 20, 1981 ☒ Convened Meeting ☐ Other

PROVISIONS:

This proposal has been reviewed by the Committee for the Protection of Human Subjects. Any requested revisions have been approved and all supporting documentation received. This proposal is in accord with CPHS guidelines and approval is granted for the Principal Investigator(s) (P.I.) to initiate this proposal, subject to any noted provisions.

By engaging in this research, the P.I. acknowledges agreement to the following:

CHANGES - Changes, including those required by the sponsor, which would affect human subjects, including changes in methods or procedures, numbers or kinds of human subjects, or revisions to the informed consent document or process, will not be initiated prior to approval by the CPHS, nor will new P.I.s be named prior to such approval. The P.I. will notify the CPHS upon leaving the institution.

UNANTICIPATED RISK OR HARM, OR ADVERSE DRUG REACTIONS - The P.I. will immediately inform the CPHS of any unanticipated problems involving risks to subjects or others, of any serious harm to subjects, and of any adverse drug reactions.

RECORDS - Adequate records, including signed consent documents if required, will be maintained in a manner which ensures confidentiality. Records of student research will remain with the supervisor or advisor. The P.I. will refer all requests from an outside agency or sponsor for review and inspection of the research records/names of subjects to the CPHS.

SUBSEQUENT REVIEW - This research will be reviewed by the CPHS on not less than an annual basis. Reprints of articles resulting from this research which appear in scientific publications will be sent to the CPHS.

copies: Office of the Dean/Director
Special Assistant for Scientific Affairs, UTHSCH
Contracts and Grants Management, UTHSCH
Principal Investigator(s)
☐ Executive Director, Hermann Hospital
☐ Pharmaceutical Services, Hermann Hospital

APPENDIX E

SAMPLE DATA ACCUMULATION WORKSHEET
COLUMN TITLES

*
Appendix E: Sample data accumulation worksheet column titles
(cf. Appendix B for questionnaire)

Column No.:	1	Group Practice No.
	2	Patient ID No.
	3	Patient ID No.
	4	Question 1
	5	Question 2
	6	Question 3
	7	Question 4
	8	Question 5
	9	Question 6
	10	Question 7
	11	Question 8
	12	Question 9
	13	Question 10
	14	Question 11
	15	Question 12
	16	Question 13
	17	Question 14
	18	Question 15
	19	Question 16
	20	Question 17
	21	Question 18
	22	Question 19
	23	Question 20
	24	Question 21
	25	Question 22
	26	Question 23
	27	Question 24
	28	Question 25
	29	Question 26
	30	Question 27
	31	Question 28
	32	Question 29
	33	Sex (cf. Item 30, Appendix B)
	34	Family Size (cf. Item 31)
	35	Family Size
	36	Age in Years (cf. Item 32)
	37	Age in Years
	38	Years in Area (cf. Item 33a.)
	39	Years in Area
	40	Education (cf. Item 34, last grade completed)
	41	Education
	42	Currently Employed (cf. Item 35)
	43	Chief Wage Earner (cf. Item 36)
	44	Chief Wage Earner's Education (cf. Item 37)
	45	Chief Wage Earner's Education
	46	Visits in Last 6 Months (cf. Item 40)
	47	Length of Time a Patient (cf. Item 41)
	48	Understand Bill (cf. Item 42)
	49	Problems With Bill (cf. Item 43)
	50	Income (cf. Item 44)
	51	Income

* NOTE: Blank columns
inserted on work-
sheet for ease of
reading are not
numbered (cf.
Appendix F for data
file)

APPENDIX F

DATA FILE FROM QUESTIONNAIRE RESPONSES
IN A STUDY ON PATIENT SATISFACTION
WITH AMBULATORY CARE GROUP PRACTICE

- New Mexico Universities: TOPS-20 Monitor 4032473
 System shutdown scheduled for 17-Feb-82 17:00:00.
 Up again at 17-Feb-82 22:00:00
 1500TH UHCA-BUSSETT, CONNOR

[illegible]

showers cannot buy love, not even friendship.

U.S. DEPT. OF JUSTICE

THE UNIVERSITY OF CHICAGO

201	4243	4443	3443	4244	4342	4224	4242	3	2	02	29	14	16	1	1	99	3	4	3	2	10
202	4444	4425	2424	4244	4242	4444	2442	4	1	02	86	12	12	4	2	14	7	2	1	06	
203	1545	2544	2443	4245	3242	4224	3444	4	2	03	20	20	12	1	2	18	7	4	2	10	
205	4444	4449	3432	3244	4414	4445	2323	2	2	02	68	50	16	4	1	99	3	6	2	108	
206	5555	5544	3435	4254	4451	4325	3453	3	1	03	26	07	12	1	2	12	7	3	6	506	
207	2432	4422	2234	2234	2222	4222	2244	2	2	01	30	06	14	1	1	99	4	3	4	207	
208	2234	1224	2434	4124	2211	2314	1111	1	1	04	43	02	14	3	2	16	4	3	1	10	
209	3434	4414	2134	2142	4222	1215	1343	2	1	01	25	02	13	1	1	99	1	3	1	106	
210	3242	2442	2444	4224	2242	2424	4242	2	2	02	58	37	16	1	1	99	2	2	2	110	
211	4153	2442	2444	2232	2242	4332	4234	2	2	03	41	02	17	1	1	99	3	3	1	10	
212	5555	5555	5555	5555	5555	5555	5555	5	1	01	25	02	17	1	1	99	4	3	1	107	
213	4444	3544	3535	2345	4353	4241	4142	2	2	03	30	03	20	1	1	99	1	4	1	308	
214	5455	5555	2454	5245	2343	4545	5453	4	2	02	53	01	16	1	1	99	4	2	2	110	
215	2333	4442	2233	3344	2344	2324	3342	3	1	02	59	41	13	1	1	99	2	5	2	108	
216	2542	4445	4414	4122	2213	2425	2145	4	1	01	58	53	14	1	1	99	1	5	4	105	
217	4244	2524	1334	3242	2434	3124	2223	2	2	04	40	03	16	1	1	99	6	2	2	110	
218	4444	4534	4434	3442	3354	3544	3354	3	1	04	46	03	16	1	2	16	1	4	2	110	
219	3434	2212	1112	2121	1231	1215	1121	5	2	03	62	62	12	4	9	99	4	6	4	308	
220	3555	5545	3555	5959	5559	5555	3449	9	1	02	60	30	12	1	2	12	2	4	2	908	
221	3555	5545	3555	5959	5559	5555	3449	9	2	02	61	36	12	1	1	99	5	4	2	908	
222	5555	5545	4445	5554	4444	4545	4444	4	1	01	64	64	09	4	1	99	4	4	2	199	
223	3242	3442	2242	4244	2242	2424	2222	2	1	01	29	04	15	1	1	99	4	2	2	308	
224	3434	4514	3434	4444	4344	4454	5353	3	2	02	75	45	16	4	9	99	3	6	1	106	
225	3444	4444	4444	4444	4444	2445	4343	4	1	04	39	06	16	2	2	99	2	6	2	108	
226	3555	5445	4554	5442	5354	4545	2441	4	1	04	41	18	12	4	2	12	5	3	1	408	

227	5234	4343	2244	3341	2234	4244	4343	5	1	02	36	40	34	4	9	99	3	6	4	3	99
228	3445	5444	1444	4442	4452	4415	1454	4	1	02	63	20	12	4	2	16	1	4	1	1	08
229	1444	2234	2244	2244	2232	1215	1421	2	1	01	53	30	15	1	1	99	2	6	1	1	03
230	4445	3444	3344	4442	3444	4444	2344	5	1	03	52	01	13	4	1	99	4	2	1	1	04
231	3434	4424	3344	4242	4342	4443	2154	2	1	02	52	10	11	4	2	17	4	2	3	2	07
232	4244	2423	2234	2234	2221	2124	2144	2	1	02	23	02	16	1	2	16	2	4	1	1	09
233	4445	2423	3434	4444	4452	2415	2242	2	9	99	00	99	99	9	9	99	9	9	9	99	
234	2444	5534	4444	4443	4443	3445	3343	4	1	02	76	45	12	2	2	99	4	3	1	1	99
235	4444	4444	4444	4442	4444	2424	4444	4	1	03	60	35	12	1	1	12	1	6	1	1	05
236	3444	4334	3324	4442	4334	4524	2343	5	2	06	45	43	15	1	1	99	2	6	1	1	08
237	4235	2434	2444	3244	2342	4314	3441	2	2	03	31	16	13	1	1	99	2	3	1	1	10
238	4455	5555	3454	5455	5444	5555	4555	4	2	01	36	02	17	4	1	99	3	4	2	5	07
101	3434	4434	3324	4244	4441	4225	2443	5	2	01	89	53	99	4	1	10	4	3	1	1	01
102	4434	2442	4434	4444	4442	4424	2444	5	1	01	31	31	12	1	1	99	5	3	2	2	99
103	3445	5344	4334	4244	4444	4445	4351	4	2	06	38	38	14	1	1	99	2	4	1	2	06
104	1444	4345	3433	1154	5433	5445	4351	4	2	04	56	09	11	4	2	11	2	1	1	1	03
105	1414	5144	3151	1244	1155	1115	5111	4	1	07	44	14	11	4	2	12	2	6	5	3	07
106	2232	4425	4242	2254	4121	4435	1451	5	1	01	79	39	01	4	1	99	2	2	4	3	02
107	2434	5135	3435	3455	3151	4344	3452	5	2	02	71	08	00	4	1	99	2	3	4	2	01
108	5445	4415	3334	4344	3442	4425	2554	5	1	01	67	62	11	4	1	99	2	6	6	5	01
109	4434	3443	4923	4242	3242	3445	3443	2	1	01	59	52	11	1	1	99	4	4	2	2	04
110	4444	4444	2312	2244	4112	2125	4445	4	1	01	48	26	12	4	1	16	3	6	1	5	01
111	3535	3544	4499	9999	9999	9444	4444	4	9	99	00	99	99	9	9	99	3	5	3	1	02
112	2454	4335	2443	3241	4213	1245	3343	4	1	05	46	46	07	4	1	99	7	3	6	5	01
113	1445	4444	2442	4252	5442	4444	4444	4	2	02	68	68	03	4	1	99	4	2	1	1	02
114	2444	2424	2234	4244	4244	4422	2243	2	2	02	57	01	16	1	1	99	3	2	1	3	10
115	4435	2445	3444	5334	4394	4445	3444	4	1	02	63	30	09	9	2	09	2	6	9	2	03
116	3444	4244	2444	3242	4222	2224	4441	2	2	02	50	05	16	1	1	99	2	3	1	2	10
117	4444	4435	3434	4144	4224	2425	3443	5	1	07	76	32	04	4	2	14	2	4	3	1	08
118	2445	4434	3442	4443	4434	3444	2443	4	1	05	35	15	09	1	2	06	5	4	2	1	99
119	4545	4435	3335	5342	4342	4344	3344	5	1	01	63	12	08	4	1	99	3	6	6	3	02
120	4555	5444	3452	4444	4242	4544	4542	5	2	03	50	10	10	1	1	11	2	5	4	4	06
121	3535	3414	2232	3242	4524	5224	1242	2	2	01	56	31	06	4	1	99	2	6	4	2	01
122	4534	4245	4249	5452	5349	4521	3351	5	2	04	71	71	15	4	2	11	5	6	4	2	07
123	2444	6124	2424	4252	2244	2243	2543	2	2	02	75	75	16	4	1	99	3	1	1	1	06
124	4444	4444	4435	5244	4442	5545	4454	4	1	04	51	35	14	1	2	09	2	6	2	4	07

125	4432	2324	5434	2242	2222	2425	2243	2	1	01	37	01	19	1	1	99	2	1	6	6	07
126	4244	4444	4244	2442	4214	1445	4444	2	1	04	32	27	16	4	2	16	4	6	2	2	09
127	5534	5445	3324	4251	5444	5555	5454	3	1	01	68	38	03	4	9	03	5	6	4	1	02
128	2434	4414	4424	4244	4444	4444	4444	3	1	01	77	30	08	4	1	08	2	6	1	1	02
129	5435	3344	3334	5352	5444	4434	4344	3	1	03	57	35	01	4	2	06	3	4	3	2	06
130	1431	1313	1142	2142	1112	1114	1341	1	1	03	22	22	12	1	2	12	2	3	4	4	06
131	4434	2344	5445	4341	4532	5414	2443	3	2	03	20	20	15	4	2	12	6	1	6	5	05
132	4435	5444	2545	4441	4245	4525	4341	2	2	02	70	45	05	4	1	99	3	6	5	4	02
133	5555	5545	5555	5155	1154	5555	5551	5	1	02	61	57	14	4	2	13	4	5	1	1	01
134	2252	2424	1424	2242	2141	4425	1241	1	1	04	43	16	12	3	2	12	3	5	4	2	08
301	5555	5545	4445	4244	3354	5445	4345	3	1	03	35	08	16	4	2	14	7	6	1	1	08
302	4424	2222	2444	4244	4241	2214	1552	2	2	02	57	33	14	1	1	99	2	3	6	5	07
303	4345	3524	3435	9934	4243	4335	2343	3	2	01	59	41	14	4	1	99	3	3	1	1	05
304	2335	2313	2324	2234	3242	1315	1243	2	1	06	40	15	19	1	1	99	2	2	2	1	08
305	3344	5444	4424	4444	4434	4412	4243	2	1	02	66	40	15	1	2	99	6	5	1	1	05
306	5444	5544	3499	9999	9999	9444	3344	4	9	99	00	99	99	9	9	99	1	5	1	5	99
307	3555	5455	3322	4142	2212	1424	1242	1	1	05	35	16	14	4	2	17	4	4	1	1	10
308	3434	4422	3255	2251	2215	2525	1343	3	1	02	50	30	12	1	2	09	3	2	2	1	05
309	3334	4444	3434	3344	3333	2414	4343	3	1	03	32	03	17	4	2	20	4	2	6	1	10
310	4445	5444	4444	4444	4432	4444	3553	4	1	03	37	15	13	1	1	99	7	3	1	1	04
311	5555	5595	5515	5151	1151	1115	5151	1	2	02	79	40	16	4	1	99	2	6	1	1	07
312	2232	2442	2432	2222	2225	2224	4243	2	2	02	33	03	16	1	1	99	1	4	3	1	10
313	3445	4444	4434	4242	4449	3445	4343	3	1	03	38	38	15	1	2	16	3	5	1	2	08
314	4434	4444	4444	4444	4444	3224	4243	2	2	01	27	03	18	1	1	99	1	5	2	1	10
315	4244	1244	1523	2141	2141	2215	4322	2	1	03	39	05	17	3	2	19	1	6	1	1	10
316	3444	4424	4424	4342	4244	2224	2344	2	2	02	54	32	18	1	1	99	2	5	2	2	09
317	4214	2422	2434	4344	4442	2422	2353	3	2	02	40	16	20	1	2	18	1	6	1	1	10
318	4444	4535	5155	4455	5253	5515	3443	3	2	02	56	56	11	1	1	99	1	4	6	5	05
319	2252	2522	2442	2424	4212	4424	2111	1	1	03	34	15	16	4	2	20	4	5	5	1	99
320	3454	4544	3422	4244	2252	5115	4351	1	2	03	29	11	18	1	1	99	2	5	2	1	07
321	1544	3445	3432	2442	3324	2424	3343	3	2	03	44	23	12	1	1	99	5	3	1	1	10
322	4434	4444	2434	4344	3243	5155	2355	3	2	02	29	99	17	1	1	99	3	6	1	1	08
323	1544	4444	2245	4241	5145	4415	4551	5	1	04	30	13	13	4	2	14	5	1	2	1	02
324	3425	4514	2435	4442	2331	5414	1441	1	2	02	24	24	16	1	1	99	5	6	3	1	08
325	4434	1234	4334	4344	4332	2415	2424	3	1	03	33	33	16	1	1	99	4	4	3	1	06
326	2234	2422	2135	3322	2252	4124	4154	1	1	03	33	05	17	4	2	14	2	6	1	1	07

APPENDIX G

FREQUENCY DISTRIBUTION OF RESPONDENT CHARACTERISTICS BY GROUP PRACTICE FROM A STUDY ON PATIENT SATISFACTION WITH AMBULATORY CARE

Characteristics of Respondents	Category Label	Score or Code	Group 1				Group 2				Group 3			
			Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj. Fr. (%)	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj. Fr. (%)	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj. Fr. (%)
1. Sex	Female	1	20	58.8	60.6	60.6	21	56.8	58.3	58.3	13	50.0	52.0	52.0
	Male	2	13	38.2	39.4	100.0	15	40.5	41.7	100.0	12	46.1	48.0	100.0
	No Response	9	1	2.9	Missing	100.0	1	2.7	Missing	100.0	1	3.8	Missing	100.0
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0	
2. Family Size, No. of Persons Living in House-	1 to 3	3	23	67.6	69.7	69.7	30	81.1	83.3	83.3	19	73.1	76.0	76.0
	4 to 6	6	8	23.5	24.2	93.9	6	16.2	16.7	100.0	6	23.1	24.0	100.0
	7 or More	7	2	5.9	6.1	100.0	--	--	--	100.0	--	--	--	100.0
	No Response	9	1	2.9	Missing	100.0	1	2.7	Missing	100.0	1	3.8	Missing	100.0
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0	
3. Age in Years	20 to 40	40	7	20.6	21.2	21.2	13	35.1	36.1	36.1	17	65.4	68.0	68.0
	41 to 65	65	15	44.1	45.5	66.7	18	48.6	50.0	86.1	6	23.1	24.0	92.0
	66 or More	66	11	32.4	33.3	100.0	5	13.5	13.9	100.0	2	7.7	8.0	100.0
	No Response	0	1	2.9	Missing	100.0	1	2.7	Missing	100.0	1	3.8	Missing	100.0
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0	
4. Years in Area	1 to 3	3	2	5.9	6.1	6.1	11	29.7	30.6	30.6	3	11.5	12.5	12.5
	4 to 6	6	1	2.9	3.0	9.1	3	8.1	8.3	38.9	2	7.7	8.3	20.8
	7 to 12	12	4	11.8	12.1	21.2	3	8.1	8.3	47.2	2	7.7	8.3	29.2
	13 or More	13	26	76.5	78.8	100.0	19	51.4	52.8	100.0	17	65.4	70.8	100.0
	No Response	99	1	2.9	Missing	100.0	1	2.7	Missing	100.0	2	7.7	Missing	100.0
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0	
5. Last Grade Respondent Completed in School	0 to 8	8	11	32.4	34.4	34.4	--	--	--	--	--	--	--	--
	9 to 12	12	11	32.4	34.4	68.8	12	32.4	34.3	34.3	3	11.5	12.0	12.0
	13 to 16	16	9	26.5	28.1	96.9	19	51.4	54.3	88.6	13	50.0	52.0	64.0
	17 to 20	20	1	2.9	3.1	100.0	4	10.8	11.4	100.0	9	34.6	36.0	100.0
	No Response	99	2	5.9	Missing	100.0	2	5.4	Missing	100.0	1	3.8	Missing	100.0
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0	

APPENDIX G

FREQUENCY DISTRIBUTION OF RESPONDENT CHARACTERISTICS BY GROUP PRACTICE FROM A STUDY ON PATIENT SATISFACTION WITH AMBULATORY CARE

Characteristics of Respondents	Category Label	Score or Code	Group 1				Group 2				Group 3			
			Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj. Fr. (%)	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj. Fr. (%)	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj. Fr. (%)
6. Current Employment Status of Respondent	Full Time	1	10	29.4	31.3	31.3	22	59.5	61.1	61.1	16	61.5	64.0	64.0
	More Than Half Time	2	--	--	--	31.3	2	5.4	5.6	66.7	--	--	--	64.0
	Half Time or Less	3	1	2.9	3.1	34.4	1	2.7	2.8	69.4	1	3.8	4.0	68.0
	Not Employed	4	21	61.8	65.6	100.0	11	29.7	30.6	100.0	8	30.8	32.0	100.0
	No Response	9	2	5.9	Missing	100.0	1	2.7	Missing	100.0	1	3.8	Missing	100.0
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0	
7. Respondent or Someone Else Is Chief Wage Earner	Respondent	1	19	55.9	59.4	59.4	21	56.8	63.6	63.6	14	53.8	56.0	56.0
	Someone Else	2	13	38.2	40.6	100.0	12	32.4	36.4	100.0	11	42.3	44.0	100.0
	No Response	9	2	5.9	Missing	100.0	4	10.8	Missing	100.0	1	3.8	Missing	100.0
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0	
8. Last Grade Chief Wage Earner Completed In School, If Not Respondent	0 to 8	8	4	11.7	22.2	22.2	--	--	--	--	--	--	--	--
	9 to 12	12	10	29.5	55.6	77.8	4	10.8	36.4	36.4	1	3.8	10.0	10.0
	13 to 16	16	4	11.7	22.2	100.0	5	13.5	45.4	81.8	4	15.4	40.0	50.0
	17 to 20	20	--	--	--	100.0	2	5.4	18.2	100.0	5	19.3	50.0	100.0
	No Response	99	16	47.1	Missing	100.0	26	70.3	Missing	100.0	16	61.5	Missing	100.0
	Total		26	100.0	100.0		37	100.0	100.0		26	100.0	100.0	
9. Income Total Per Year for Respondent and Family	0 to \$ 8,999	3	16	47.1	50.0	50.0	--	--	--	--	1	3.8	4.2	4.2
	\$ 9,000 to \$29,999	7	10	29.4	31.3	81.3	12	32.4	36.4	36.4	7	26.9	29.2	33.3
	\$30,000 or More	10	6	17.6	18.8	100.0	21	56.8	63.6	100.0	16	61.5	66.7	100.0
	No Response	99	2	5.9	Missing	100.0	4	10.8	Missing	100.0	2	7.7	Missing	100.0
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0	
10. Visits by Patient in Last 6 Mos.	0 to 2	2	23	67.6	67.6	67.6	20	54.1	55.6	55.6	17	65.4	65.4	65.4
	3 to 6	6	9	26.5	26.5	94.1	12	32.4	33.3	88.9	6	23.1	23.1	88.5
	7 or More	7	2	5.9	5.9	100.0	4	10.8	11.1	100.0	3	11.5	11.5	100.0
	No Response	9	--	--	--	100.0	1	2.7	Missing	100.0	--	--	--	100.0
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0	

APPENDIX G

FREQUENCY DISTRIBUTION OF RESPONDENT CHARACTERISTICS BY GROUP PRACTICE FROM A STUDY ON PATIENT SATISFACTION WITH AMBULATORY CARE

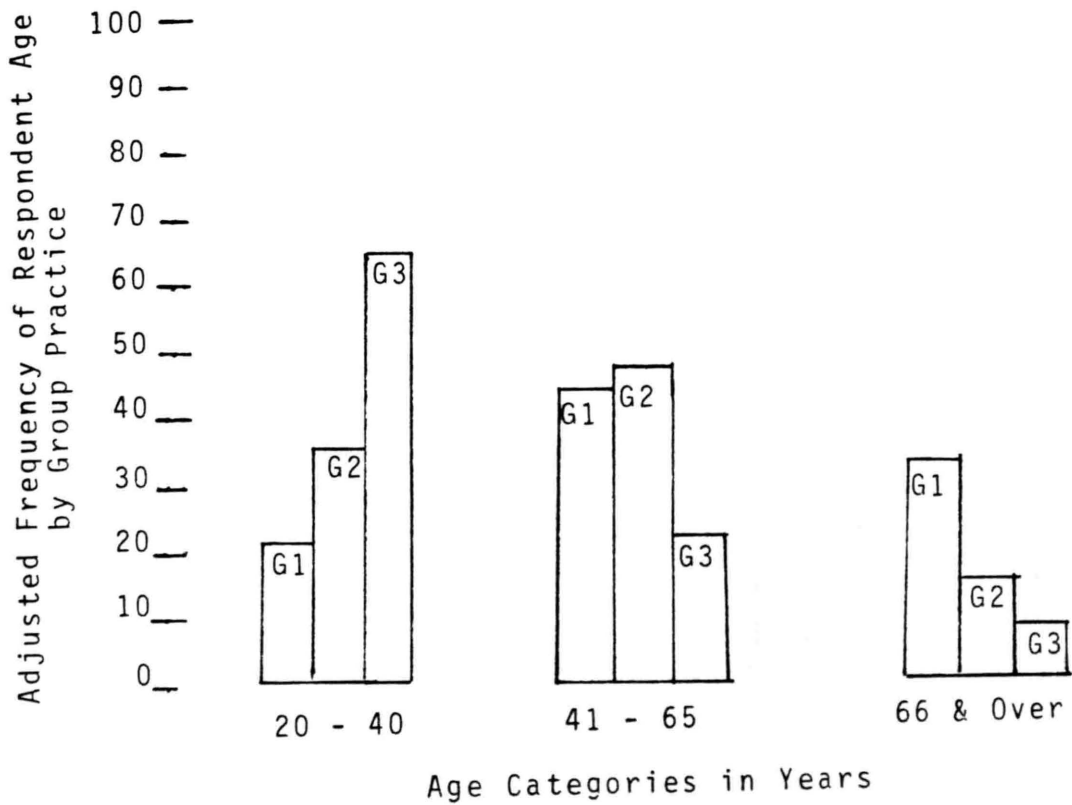
Characteristics of Respondents	Category Label	Score or Code	Group 1					Group 2					Group 3				
			Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj. Fr. (%)	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj. Fr. (%)	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj. Fr. (%)			
11. Length of Time a Patient of Group Practice	<2 to 11 Mos.	1	12	35.3	35.3	35.3	16	43.2	45.7	45.7	8	30.8	30.8	30.8	30.8	30.8	
	1 to 2 3 Yrs.	2	9	26.5	26.5	61.8	11	29.7	31.4	77.1	11	42.3	42.3	73.1	73.1	73.1	
	3 Years	3	13	38.2	38.2	100.0	8	21.6	22.9	100.0	7	26.9	26.9	100.0	100.0	100.0	
	No Response	9	--	--	--	100.0	2	5.4	Missing	100.0	--	--	--	--	--	--	
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0				
12. Ability of Respondent to Understand Bill	Very Easy, No Trouble	1	10	29.4	30.3	30.3	15	40.5	41.7	41.7	13	50.0	50.0	50.0	50.0	50.0	
	Somewhat Easy	2	5	14.7	15.2	45.5	13	35.1	36.1	77.8	6	23.1	23.1	73.1	73.1	73.1	
	Neither Easy Nor Difficult	3	2	5.9	6.1	51.5	3	8.1	8.3	86.1	3	11.5	11.5	84.6	84.6	84.6	
	Somewhat Difficult	4	8	23.5	24.2	75.8	4	10.8	11.1	97.2	--	--	--	84.6	84.6	84.6	
	Very Difficult	5	3	8.8	9.1	84.8	--	--	--	97.2	1	3.8	3.8	88.5	88.5	88.5	
	Don't Know, Never Seen Bill	6	5	14.7	15.2	100.0	1	2.7	2.8	100.0	3	11.5	11.5	100.0	100.0	100.0	
	No Response	9	1	2.9	Missing	100.0	1	2.7	Missing	100.0	--	--	--	--	--	--	
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0				
13. Problems with Bill in Last 6 Mos.	No Problems	1	10	29.4	30.3	30.3	24	64.9	70.6	70.6	21	80.8	80.8	80.8	80.8	80.8	
	Had Problems, But Satisfied	2	11	32.4	33.4	63.7	3	8.1	8.8	79.4	2	7.7	7.7	88.5	88.5	88.5	
	Had Problems, Neither Sat.	3	4	11.8	12.1	75.8	4	10.8	11.8	91.2	--	--	--	--	--	--	
	Had Problems, Dissatisfied	4	4	11.8	12.1	87.9	1	2.7	2.9	94.1	--	--	--	--	--	--	
	Don't Know, Never Seen Bill	5	4	11.8	12.1	100.0	2	5.4	5.9	100.0	3	11.5	11.5	100.0	100.0	100.0	
	No Response	9	1	2.9	Missing	100.0	3	8.1	Missing	100.0	--	--	--	--	--	--	
	Total		34	100.0	100.0		37	100.0	100.0		26	100.0	100.0				

Legend:

G1 - Group Practice One

G2 - Group Practice Two

G3 - Group Practice Three



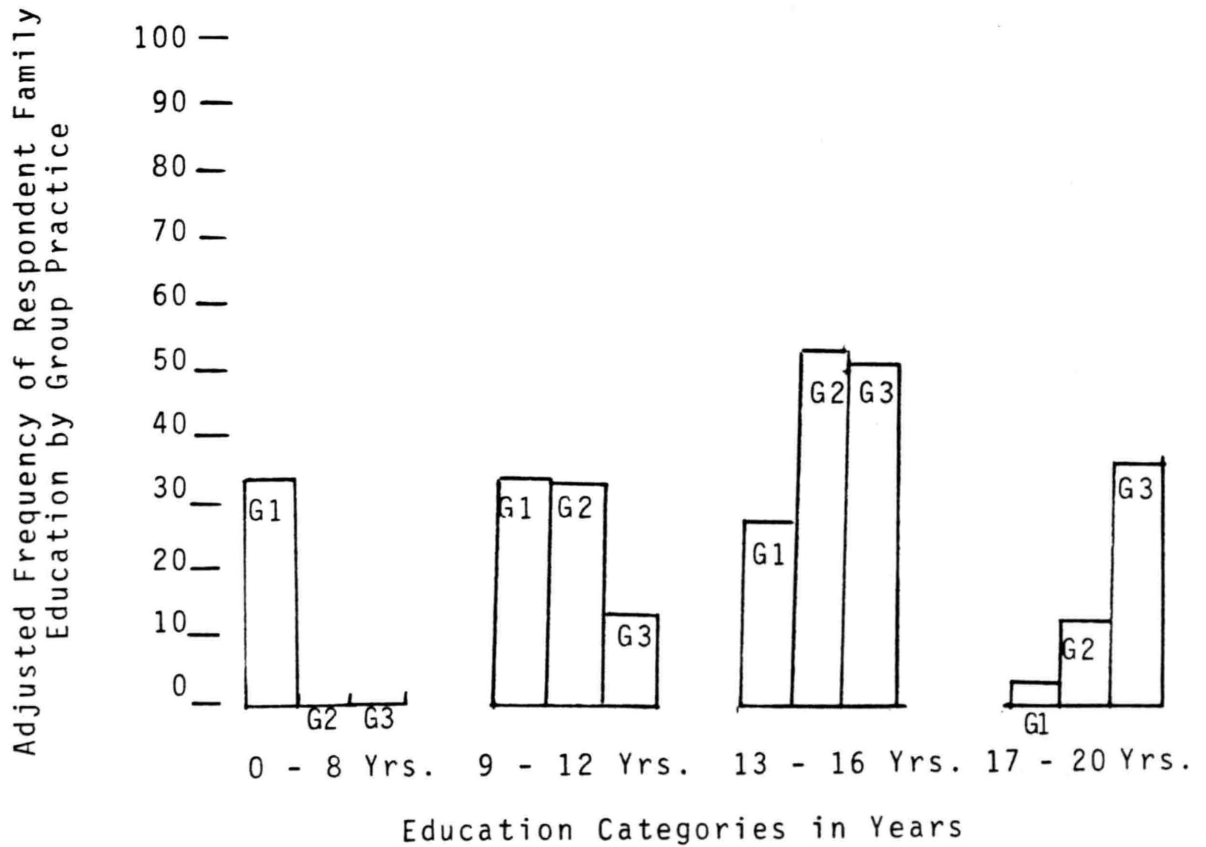
Appendix H: Histogram of respondent age categories in years by group practice from a study on patient satisfaction with ambulatory care

Legend:

G1 - Group Practice One

G2 - Group Practice Two

G3 - Group Practice Three



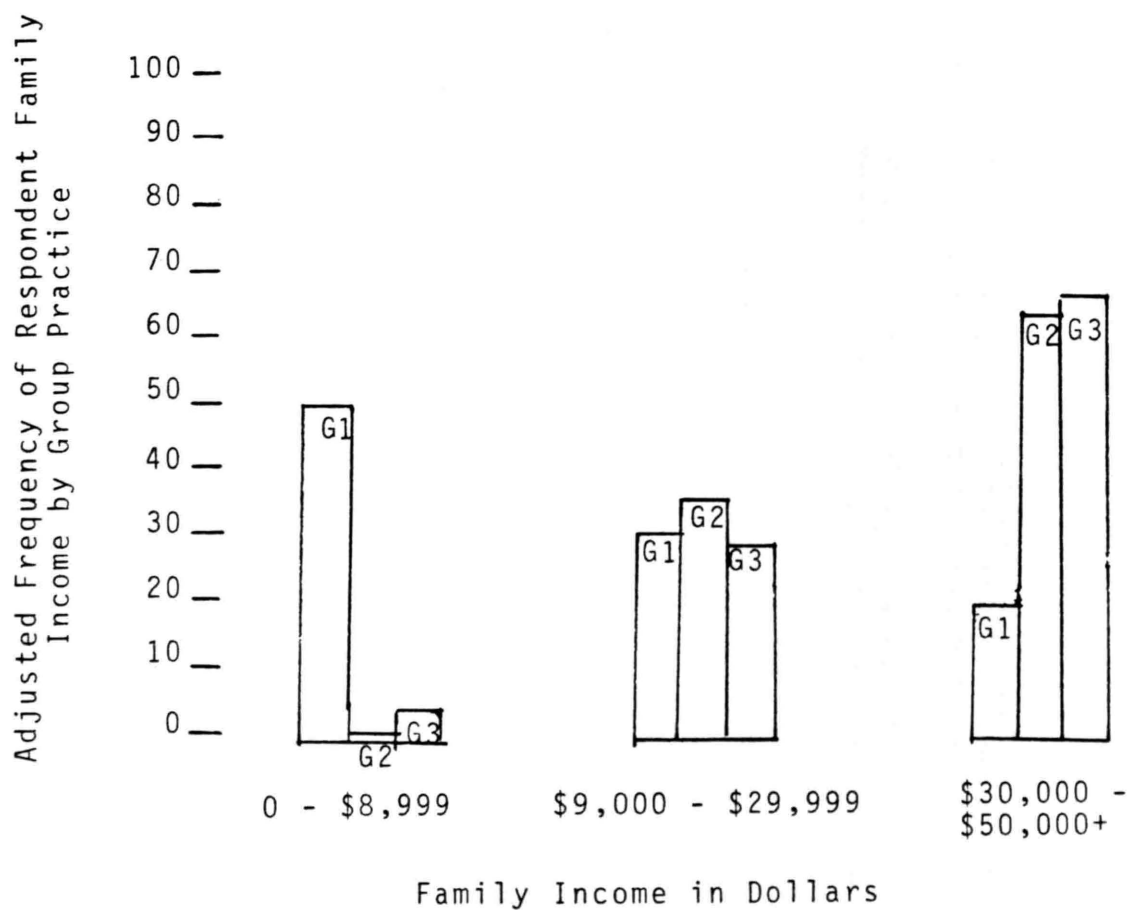
Appendix I: Histogram of respondent education categories in years by group practice from a study on patient satisfaction with ambulatory care

Legend:

G1 - Group Practice One

G2 - Group Practice Two

G3 - Group Practice Three



Appendix J: Histogram of respondent family income in dollars by group practice from a study on patient satisfaction with ambulatory care

APPENDIX K

KRUSKAL-WALLIS 1-WAY ANOVA OF PATIENT SATISFACTION WITH ART OF CARE* BY AGE OF RESPONDENT FROM A STUDY ON AMBULATORY CARE GROUP PRACTICE

Category Label	Results			Total Cases	H Value	Degrees of Freedom	Significance Level (\underline{p})
Age in Years	20-40	41-65	66 or More	94	6.99	2	0.03
Number	37	39	18				
Mean Ranks	39.62	49.23	59.94				

* Content factor measuring conduct of providers by responses to questions 2, 5, 15, 20, 26, and 27 of the new patient satisfaction survey (Davies 1981).

NOTE: Critical value of \underline{H} must be 5.99 ($p < 0.05$) to be significant Sidney Siegel. Non Parametric Statistics for The Behavioral Sciences. (New York: McGraw Hill Book Co., 1956:249)

APPENDIX L

KRUSKAL-WALLIS 1-WAY ANOVA OF PATIENT SATISFACTION WITH ART OF CARE*
 BY EDUCATION OF RESPONDENT FROM A STUDY
 ON AMBULATORY CARE GROUP PRACTICE

Category Label	Results				Total Cases	H Value	Degrees of Freedom	Significance Level (<u>p</u>)
Education	0-8	9-12	13-16	17-20				
Number	11	26	41	14	92	8.078	3	0.044
Mean Ranks	61.14	53.08	41.77	36.64				

* Content factor measuring conduct of providers by responses to questions 2, 5, 15, 20, 26, and 27 of the new patient satisfaction survey (cf. appendix B)

NOTE: Critical Value of H must be 7.82 ($p < 0.05$) to be significant Sidney Siegel. Non Parametric Statistics for the Behavioral Sciences. (New York: McGraw Hill Book Co., 1956:249)

APPENDIX M

KRUSKAL-WALLIS 1-WAY ANOVA OF PATIENT SATISFACTION WITH ART OF CARE* BY INCOME OF RESPONDENT FROM A STUDY ON AMBULATORY CARE GROUP PRACTICE

Category Label	Results			Total Cases	H Value	Degrees of Freedom	Significance Level (<u>p</u>)
Income	0-\$8,999	\$9,000	\$30,000	89	8.438	2	0.015
Number	17	29	43				
Mean Ranks	58.88	47.43	37.87				

* Content factor measuring conduct of providers by responses to questions 2, 5, 15, 20, 26, and 27 of the new patient satisfaction survey (cf. appendix B)

NOTE: Critical Value of H must be 7.82 to be significant at ($p < 0.02$) Sidney Siegel. Non Parametric Statistics for the Behavioral Sciences. (New York: McGraw Hill Book Co., 1956:249)

APPENDIX N

MANN-WHITNEY U - WILCOXON RANK SUM W TEST
OF TOTAL BY SEX FROM A STUDY ON PATIENT
SATISFACTION WITH AMBULATORY CARE GROUP PRACTICE

Female		Male	
Mean Rank	Number	Mean Rank	Number
48.06	54	46.75	40
U	W	Corrected for ties Z	2-tailed P
1050.0	1870.0	-0.2295	0.8184

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