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Moira Anne Stewart

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A STUDY
OF THE HOLISTIC APPROACH
IN PRIMARY CARE

by

Moira Anne Stewart

Department of Epidemiology and Preventive Medicine

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of the requirements for the degree of
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ABSTRACT

The major purpose of this research was to devise a method of identifying whole-person (holistic) care in the setting of family practice. Holistic care was defined as care which took account of the patient's physical, psychological and social problems.

Different methods of assessing patient care were reviewed and the approach chosen involved interview and questionnaire data from patients and physicians. A committee of practising family physicians contributed ideas during the development of the method.

Data were collected for the following purposes:

1. to test the feasibility of the method of identifying holistic care
2. to test empirically, the validity of the method
3. to assess predictions regarding possible determinants of holistic care
4. to assess the relationship between the degree of holistic care and patient outcomes
5. to increase understanding of two outcome measures: patients' assessments of recovery and patients' satisfaction.

The study was carried out in a small-town group practice of family physicians. The 29[illegible] patients had at least one chronic illness, were aged 25 years or over and had a current complaint at the time they entered the study. Patients were followed prospectively for three months after baseline information had been collected through an interview at the time of entry. The information included the patients' demographic characteristics, complaints, discomforts, worries, disturbances of daily living and social problems. Two measures of patient care were used: 1) physician's knowledge of the patient's problems, ascertained from a questionnaire completed by the physician at the end of the three month period, 2) physician's response to the patient's problems, ascertained from the medical records during the three months. The indicators of holistic care were based on the physician's knowledge of and response to the patient's complaints, discomforts, worries, disturbances of daily living and social problems. The information on patient outcomes was collected during an interview with the patient at the end of the three month period of study.

The collection of data for classifying the kind of care (holistic or not) was found to be feasible with one person working full-time.

Empirical support for the validity of the indicators of physician's knowledge was found. The physician's knowledge increased as the number of recent visits by the patients increased.

The results may be summarized as follows:

1. Physicians' knowledge of patients' problems did not vary according to age and education of the patients.

2. No support was found for the prediction that continuity of care and completeness of family care increased the scores on any of the indicators.

3. As the number of the patients' complaints increased, the scores on all indicators of holistic care decreased.

4. For patient-initiated visits, scores were higher for most of the indicators of physician's knowledge than for doctor-initiated visits.

5. The patients' opinions of their general progress were influenced more by the degree of recovery from physical than from psychosocial problems.

6. Patients' satisfaction with doctors in general was lower than with their own physician.

7. Physicians' knowledge of and response to patients' problems were found to be significantly associated. This suggests that, for some doctors at least, knowledge may be a valid indicator of the process of care.

8. Relationships between indicators of holistic care and patient outcomes were ambiguous. Therefore, judgement was withheld concerning the hypothesis that holistic care affects outcomes. Two reasons were rejected as explanations of this finding:

a) lack of sensitivity of the outcome measures,

b) lack of validity of the indicators of holistic care.

The following were considered possible explanations:

a) the effect of stratifying for the confounding variables,

b) lag-time between care and its effect.

Because physicians were not selected at random, these results were not generalized to all family practice.

ACKNOWLEDGEMENTS

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physician's awareness of psychological and social factors, his awareness of the value of preventive techniques and the need for the physician to use specialized knowledge and skills of others. They included the doctor-patient relationship as well as coordination of personnel and other matters pertaining to the care of patients.

Another definition, similar to Hammond and Kern's in that it included matters other than the doctor-patient relationship, was Heller's (1969). As a physician but also a patient of a comprehensive care program, he described the team approach and continuity of care as well as the alleviation of worry through reassurance.

Lewis (1971) in his review of comprehensive care restricted consideration to matters other than the doctor-patient relationship. A large number of evaluative works have not included specific activities of the doctor in their definitions of comprehensive care. Katz et al.(1968), for example, defined comprehensive care as home care by a coordinating physician and a public health nurse. Gordis and Markowitz (1971) defined comprehensive care as continuous care given by a physician, public health nurse and social worker. Kaplan et al.(1972) stressed the team approach in their definition. Alpert et al.(1970) described the comprehensive pediatric care which they were evaluating as acute and preventive services for all children in the family on a continuous basis, with night and weekend coverage, home visits and with use of a team.

In contrast to the foregoing definitions are those definitions of comprehensive or holistic care which focused on the doctor-patient relationship. A paper by Eskwith (1960) cited the following as his definition of the "holistic approach for patients with angina pectoris": establishing satisfactory rapport with the patient, assisting in job

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Chapter One

INTRODUCTION

1.1 Statement of the Purpose of the Research

The purposes of the research are summarized in a list immediately below. The list is followed by a brief description of each of the purposes.

1. to devise a method of assessing holistic care,
2. to test the feasibility of the method through a collection of data,
3. to assess predictions regarding possible determinants of the kind of care (holistic or not),
4. to assess the relationship between the kind of care and the outcomes,
5. to assess the meaning of two outcome measures:
   a) patients' assessments of recovery,
   b) patients' satisfaction.

The main purpose of this research was to devise a method of identifying whole-person care or holistic care in the setting of primary medical practice. From the outset, the goal was to assess not merely the technical aspects of care but also the social and emotional care. The approaches to measuring medical care were reviewed and the approach of choice involved interview and questionnaire data from the patients and the physicians. The approach used in the research was criticized and amended by a committee of practising Family Physicians in an attempt to enhance its validity.

The collection of data, which was undertaken as a test of the feasibility of the method, allowed the assessment of several predictions regarding the determinants of holistic care.

1. The number of recent visits was expected to be associated with the kind of care.
2. Variations in the kind of care were expected according to the patients' age and education.
3. The continuity and completeness of family care were expected to influence the kind of care.

The collection of data was designed to permit an assessment of the relationship between the kind of care and the outcomes in terms of patients' recovery and satisfaction and data concerning the outcomes were collected accordingly. However, in addition, an increased understanding of ~~the~~ two end-result measures was sought. To this end, the effect of specific dimensions of recovery (i.e. from discomfort or worry) upon a patient's subjective global assessment of recovery was investigated. Also, the differences between direct and indirect measures of a patient's satisfaction were assessed.

1.2 Trends in Health Care Research

The purpose of this section is to locate the research contained in this report in its historical context. Four characteristics of this research correspond to the aspects of health care research to be discussed. They are:

1. This research maintained, wherever possible, an approach to evaluating physician's performance which avoided judgements by peers or experts. However, it was recognised that judgements could not be avoided in the very choosing of the aspects of care to be subjected to scrutiny, even if the influence was minimized in the course of testing the methods of measurement.

2. The outcome assessments included measures of patient's recovery and patient's satisfaction.

3. The setting of the research was a rural group-practice of family physicians. All the patients were ambulatory.

4. The research assessed the care of social, emotional and physical problems of patients.

Four aspects of health care research which correspond to the characteristics mentioned above are:

1. the method of evaluation:
    a) based on judgements
    b) based on actual practice
2. indices of the outcomes of care:
    a) mortality alone
    b) the six D's
3. the setting of the evaluation:
    a) hospitals
    b) ambulatory care
4. aspects of care evaluated:
    a) physical only
    b) social, emotional and physical.

Research in the evaluation of health services has tended to reflect the preoccupations of current medical thinking. Just as epidemiological studies throughout the centuries have parallelled the changing concepts of disease and the changing proportionate mortality rates (Le Riche and Milner, 1971), health services research has reflected the fluctuating priorities of health care.

Self evaluation is not a new phenomenon in the health profession.

Two common evaluative techniques have been the normative and the empirical. Donabedian (1969) has defined the terms: normative standards are derived from the opinions or judgements of health professionals and represent the ideal to strive for, while empirical standards are derived from their actual practice and represent the reality.

The Hippocratic doctrine set down specific standards of care which included considerations not only of the physician dealing with the disease but also of the doctor-patient relationship (Hippocrates translated by Jones, 1923 a & b; Block, 1957).

Groups of physicians have continued to set standards for ideal care. Lee and Jones's work in 1933 is particularly noteworthy. Today, Falk, Schonfeld et al. (1967) carry on the tradition of developing ideal standards.

Empirical standards have been used in the planning of hospital and other health services. Two examples of "rational" or "scientific" approaches to planning were:

1. Florence Nightingale's use of hospital statistics [illegible] the 1860's (White, 1968).
2. Geoffrey Pyke's approach based on facts, in the planning of the National Health Service in the 1940's (Lampe, 1959).

While many well-known evaluations of health care have relied upon normative judgements, recent writers have criticized this approach and have emphasized the empirical standards (Donabedian, 1969; Barro, 1973; Pelligrino, 1964).

Indices of the outcomes of medical care have changed over time. Medical progress in this century has led to a dramatic decrease in deaths of young people and the current stability of mortality rates throughout the Western industrialized countries makes them insensitive indices (Sullivan, 1966). Therefore mortality rates have been supplemented by measures of morbidity, measures of social and physical function and measures of patient's satisfaction. Recent authors have contributed to conceptual and methodological progress regarding measures of outcome. Elinson (1966) described the five D's: death, disease, disability, discomfort and dissatisfaction. Sanazaro and Williamson (1968) added the sixth: social disruption. Recent methodological work has resulted in several techniques of measuring health status and patient's satisfaction.

Until recently, hospitals were the focus of attention. Now, there is more interest in ambulatory patients. Outpatient centres, community medical centres and family doctors have been evaluated.

Hand in hand with this recent development goes the view that health care includes something more than the technical skills usually evident in hospitals. Increasingly, attention is being paid to the social and emotional, as well as the physical, needs of patients. Three manifestations of such attention are:

1. Social scientists have become involved in medical curricula and have contributed to courses designed to teach "comprehensive" medicine (Bloom, 1963; Bloom, 1965; Reader and Goss, 1967; Hammond and Kern, 1959).
2. Several writers have emphasized the personal dimensions of care and stressed the need for research in this area (Starfield, 1973 ; Barro, 1973; Pelligrino, 1964, Wolfe and Badgley, 1972).
3. Recent evaluations of health care have included measures of psychosocial aspects such as patient's worries and doctor-patient communication (Hulka and Cassel, 1973; Korsch et al., 1968).

Chapter Two

REVIEW OF THE LITERATURE

The literature review covers two broad topics in health care research: assessment of the process of patient care and measurement of outcomes of care. Donabedian (1969) defined the process of care as "the activities of physicians and other health professionals in the management of patients" (page 3). He defined measures of outcome as "the evaluation of end-results in terms of health and satisfaction" (page 3).

2.1. Process of Care

The literature of this section falls into two broad categories: concepts and techniques of measurement. Firstly, I present the definitions of holistic or comprehensive care which exist in the literature. In addition, I attempt to synthesize the theoretical works which have contributed to the idea of holistic or whole-person care.

Secondly, I present the literature which deals with the measurement of health care. I pay particular attention to studies in primary care because that was the setting of the research being reported herein.

2.1.1: Concept of Holistic or Comprehensive Care

A. *Definitions of Holistic or Comprehensive Care*

As Hammond and Kern (1959) pointed out, the term "comprehensive medical care" has been defined many different ways. In their own definition they stressed the physician's attitude toward responsibility for the patient's total health. In addition to qualities such as "scientific knowledge, intellectual curiosity, conscientious attention to detail and constant stimulation of research" (page 4), they mentioned the physician's awareness of psychological and social factors, his awareness of the value of preventive techniques and the need for the physician to use specialized knowledge and skills of others. They included the doctor-patient relationship as well as coordination of personnel and other matters pertaining to the care of patients.

Another definition, similar to Hammond and Kern's in that it included matters other than the doctor-patient relationship, was Heller's (1969). As a physician but also a patient of a comprehensive care program, he described the team approach and continuity of care as well as the alleviation of worry through reassurance.

Lewis (1971) in his review of comprehensive care restricted consideration to matters other than the doctor-patient relationship. A large number of evaluative works have not included specific activities of the doctor in their definitions of comprehensive care. Katz et al.(1968), for example, defined comprehensive care as home care by a coordinating physician and a public health nurse. Gordis and Markowitz (1971) defined comprehensive care as continuous care given by a physician, public health nurse and social worker. Kaplan et al.(1972) stressed the team approach in their definition. Alpert et al.(1970) described the comprehensive pediatric care which they were evaluating as acute and preventive services for all children in the family on a continuous basis, with night and weekend coverage, home visits and with use of a team.

In contrast to the foregoing definitions are those definitions of comprehensive or holistic care which focused on the doctor-patient relationship. A paper by Eskwith (1960) cited the following as his definition of the "holistic approach for patients with angina pectoris": establishing satisfactory rapport with the patient, assisting in job placement, establishment of correct attitudes toward the job, offering reassurance, encouragement of frequent office visits, lessening family tension and prescribing tranquilizers rather than vasodilators" (page 203).

Wolfe (1963) compared a comprehensive physician to a constricted physician: the former had "a comprehensive role concept, accepting social perceptions and an open system of medical beliefs and values" (page 634). Wolfe and Badgley (1972) described the comprehensive "whole-person" approach as the antithesis of a physical, symptom-oriented approach. Brennan (1974) referred to the holistic approach as a set of values, attitudes and skills incorporated into the physician's behaviour and stressing the doctor's knowledge of himself and of human growth and development.

Clearly, the definitions have varied considerably. In addition, the terms comprehensive and holistic have not been used interchangeably. In general, writers who referred to such matters as the team approach or continuity used the term comprehensive care, whereas writers who talked about the doctor-patient relationship tended to use the term holistic care. In this light, the measure being reported in this thesis ought to be called holistic care because it deals with the doctor-patient relationship.

B. *Theoretical Works Concerning Patient-Care.*

I propose to amalgamate several aspects of patient-care in this section. First, I will present an overview of the development of the idea of the whole person, a being whose mind and body are not separate and distinot but, rather, interacting parts. Second, I will expand the view to include the physician and will present writings which emphasize the dynamic interplay between doctors and patients. Third, I will discuss works which consider the doctor and the patient within the context of their environment. Finally, I will put forward some manifestations in the medical literature of a broad view of patient care.

First, then, I will deal with the idea of the whole person and the status of this idea throughout the history of medicine. The Hippocratic writings mentioned that diseases of the mind were natural phenomena, not "divine" and therefore outside the realm of human knowledge. Such diseases were observed and treated in the same manner as were diseases of the body, recognizing the relationship between the mind and the body. The Hippocratic writings also stressed the effect of the environment on the patient. This is most strikingly revealed in the essay "On Airs, Waters, and Places". (Hippocrates edited by the Philosophical Library, 1964). As Dubos (1968) said, "The clinician admires Hippocrates for his ... penetrating concern with the patient as a complex human being integrated in his community." (page 57). During the course of the centuries from the time of Hippocrates to the Scientific Revolution of the seventeenth century, much of the spirit of Greek thought was lost. The Scientific Revolution has been described as resulting in part from the "sheer intellectual inadequacy" of "traditional science embalmed in books" (Hall, 1962, page 369). The rebirth of a science of observation was enhanced by Kepler, Galileo, Vesalius, Descartes, Bacon, Harvey and many others. The impact of the Scientific Revolution can be noticed in present-day scientific research in terms of methods and also philosophy.

It was largely the influence of the essentially mechanistic philosophy of Descartes that bequeathed to medical science the difficult problem of the relationship between the human spirit and the human body. Since the time of Descartes, many have become disenchanted with the mechanistic approach as the only approach to human problems and have reintroduced an awareness of the interplay of the mind and the body, a holistic view of man. Some, interested in psychology (Pavlov and Freud) and in physiology (Claude Bernard, W.B. Cannon), found that the study of people and disease must acknowledge the mind-body complex. Clinicians and researchers have found the concept of the whole man appealing but, still working with the restraints of reductionist thinking, they have found this holistic approach difficult to implement or assess (Dubos, 1968). Concepts dealing with the behaviour of patients have attempted to bridge the gap between the mind and the body. Some examples are: "the special position of the sick" (Sigerist, 1960), the sick role (Parsons, 1951), illness behaviour (Mechanic, 1962) and the morbid episode (Kosa and Robertson, 1969).

Discussions of patient-care have often considered not only the patient as a person but also the social system of the physician and the patient. In other words, the patient has not been visualized in isolation but as part of a dynamic interchange. Freud (1912) recognized this interplay and called one aspect of it transference. Henderson (1935) highlighted three aspects of the social system of the doctor and the patient: the most relevant here was the dynamic nature of the system. Szasz and Hollender (1956) elaborated three variations in the doctor-patient relationship. They were activity-passivity, guidance-cooperation and mutual participation. These three variations acknowledged differences from system to system and from time to time. Other writers have assumed the dynamic nature of the doctor-patient relationship (King, 1962; Zabarenko et al, 1968; Browne and Freeling, 1967). This idea became the central theme in the writings of Michael Balint (1964). On the one hand he described the processes by which the patient presented "offers" and continued to do so until the physician responded and a compromise was reached. On the other hand he outlined the way doctors responded to patients so as to communicate their own firm idea of how the patient ought to behave, called the "apostolic function" of the physician.

Awareness of sociocultural influences on both the patient and the doctor can be found in the work of Henderson (1935). Bloom (1963) stressed that the dynamic interchange between the physician and the patient ought not to be visualized as occurring in a vacuum. Each member of the doctor-patient system was influenced by his cultural ties and the relationship was affected by its social context. In the literature on utilization of health services the importance of social and cultural factors has been identified (Kosa and Robertson, 1969; Blum, 1960; Saunders, 1954; Twaddle, 1969; Zola, 1966; Koos, 1967; McKinlay, 1972; Andersen, 1968; Sheps et al, 1964; Suchman, 1966). In presenting a model for health services research Starfield (1973) took account of the following three interacting components; medical practice, behaviour of patients and the social and physical environment.

The most striking effect of the concepts discussed above on the thinking of physicians, and particularly primary care physicians, has been the attempt to classify patients using schema other than the traditional diagnosis. This trend reflected an underlying change in outlook by clinicians. As Blum (1960) explained, "Medical historians have shown that definitions and categories of illness change from century to century and that classifications depend upon the philosophy of the era as well as on the available knowledge about the human body".(page 1). Feinstein (1967) criticized the conventional classification of disease because it dealt with "morphologic form but not clinical function,....disease but not people,... clinical inference but not clinical observations". (pages 72-73). In addition, as Magraw (1958) noticed, the traditional diagnosis ignored the social and psychological aspects of the doctor-patient encounter.

Several attempts have been made to overcome the limitations of the traditional diagnosis by supplementing it with other information. Steiger and Yates (1969) proposed a classification of patients' needs. The five categories were: trusting relationship and/or skilled understanding and/or drugs and/or technologies and/or a guide to help him through the system.

Balint (1964) emphasized the need for a deeper diagnosis which would prevent the physician from orienting the patient around a now defined or "organized" illness. Browne and Freeling (1967) felt that for patients with emotional problems, such an "organized" illness could be much more difficult to heal than the original anxiety state. In the same vein, Shocket and Lisansky (1969) suggested that in addition to the traditional diagnosis, a personality diagnosis be made. These two important parts of the medical history, taken together, were called the comprehensive diagnosis. By considering both, the physician could better employ comprehensive therapy.

Both Magraw (1958) and Greco (1966) encouraged physicians to interpret the patient's presenting complaint in terms of what actually made the patient come at this time. Browne and Freeling (1967) noticed that the symptom "serves as a passport to the doctor for complaints which the patient finds difficulty in introducing" (page 4).

McWhinney's (1972) three-tiered system for classifying patients, consisted of the traditional diagnosis, patient behaviour and psychosocial problems. He underlined the importance of a vocabulary which forced clinicians to think about the important behavioural and social aspects of illness.

The challenge remains, to measure the various components of the system in such a way as to provide meaningful insights for the clinician who works in terms of the whole patient.

2.1.2. Evaluative Studies of the Process of Care

In this review I will give special emphasis to two aspects of evaluative studies. The first aspect concerns the kind of standard used to assess the adequacy of a physician's performance. The second aspect concerns the source of the data.

The terms commonly used to describe methods of evaluation are:

1. Implicit criteria. These refer to judgements made by a clinician on the basis of his own standards. His standards are not made explicit.
2. Explicit criteria. Here, comparisons are made between actual performance and a set of specific expectations usually devised by a committee of clinicians. These two criteria for evaluating care are called normative standards because they represent a comparison with an ideal, whether that ideal is made explicit or not. Efforts have been made to move away from purely normative methods of evaluation.
3. Empirical standards. In this case, performance is judged against performance of peers and can be classed as average, above or below

average.

The notion that normative and empirical standards are mutually exclusive is fallacious. In order for empirical data to be used in evaluations, judgements must be made concerning the cut-off-point for good and bad care. In my view, empirical standards and explicit standards are rather similar in that both separate the process of gathering data from that of making the judgements.

Frequently, the criteria for evaluating care are supplemented by information provided by the patient. The use of data from the patient does not exclude the necessity that judgements be made in determining what physician-responses are mandatory given certain patient-needs. Using information from the patient assures that the evaluation does not consider the doctor's actions in isolation.

Three common sources of data, aside from information from the patient are:

1. direct observation of the physician as he practices,
2. the medical records kept by the physician,
3. special questionnaires for the physician to complete.

Below is a list of evaluations of patient care. The author, the kind of standard and the source of data are shown. A discussion of the relative merits of the kinds of standards follows the list.

Author	Kind of Standard	Source of Data
Hadfield (1953)	Normative standard. Implicit criteria	Direct observation
Peterson et al. (1956)	Normative standard. Implicit criteria with guidelines	Direct observation

Authors	Kind of Standard	Source of Data
Daily and Morehead (1956)	Normative standard. Implicit criteria with guidelines	Direct observation and interview with the physician
Morehead (1967)	Normative standard. Implicit criteria	Medical records
Clute (1963)	Normative standard. Implicit criteria with guidelines of Peterson et al.	Direct observation
Jungfer and Last (1964)	Normative standard. Implicit criteria with guidelines of Peterson et al.	Direct observation
Zabarenko et al. (1968)	Normative standard. Implicit criteria	Direct observation
Brook and Appel (1973)	Normative standard. Implicit criteria and explicit criteria	Abstract from medical record. Criteria derived from clinicians who were teachers and specialists
Lee and Jones (1933)	Normative standard. Explicit criteria	Criteria derived from medical records and opinions of physicians
Le[illegible]cke (1956)	Normative standard. Explicit criteria	Criteria derived from textbooks. Data from medical records
Payne (1967)	Normative standard. Explicit criteria	Criteria derived from medical staff of hospital
Falk et al. (1967)	Normative standard. Explicit criteria	Criteria derived from 57 clinicians
Kessner and Kalk (1973a & 1973b)	Normative standard. Explicit criteria	Data from medical records
Sibly et al. (1973)	Normative standard. Explicit criteria	Data from medical records

Authors	Kind of Standard	Source of Data
Hulka & Cassel (1973) Burdette et al.(1974)	Normative Standard. Explicit criteria	Data from medical records and questionnaires
Sanazaro & Williamson (1970)	Empirical	Reports from participating physicians
Scott et al.(1960)	Empirical	Records kept by physician
Johnson (1973)	Empirical	Records kept by physician
Starfield & Scheff (1972)	Empirical	Medical records
Professional Activity Study, Myers (1957)	Empirical	Hospital records

Zabarenko et al.(1968) chose direct observation because it allowed data to be collected at the source and not several steps removed as are medical records and questionnaires. However they recognized that peer review by implicit criteria was susceptible to strong personal bias on the part of the observers.

Pelligrino (1964) has pointed out the shortcomings of normative standards with implicit criteria. He stated, "the moment one attempts to define quality, it turns out to be one's own personal brand of practice. What studies of quality usually find out is whether or not the investigator's notion of quality is being practiced. This may not be significant. A definition of quality is required which has some objective validity" (page 421).

Brook and Appel (1973) found that neither implicit nor explicit judgements of written resumes of episodes of medical care correlated significantly with outcome measures. They concluded that for implicit criteria, judges were using conventional wisdom in their assessment rather than a knowledge of the critical processes which improve a patient's health. They also found that this approach was reliable only when a group of cases was used, not just a single case. They advised, therefore, that large numbers of patients from each physician were necessary for this method to be useful.

Brook and Appel (1973) compared implicit and explicit criteria and found that the explicit criteria contained the more severe judgements:

1. for explicit criteria, 2% of 296 cases showed acceptable quality of care,
2. for implicit criteria, 23% had acceptable care.

Brook and Appel wondered whether the excessively high standards outlined by the explicit criteria reflected judgements of physicians who were teachers and specialists as opposed to non-academic physicians. They quoted an unpublished study by Payne and Lyons which found an equally low frequency of acceptable care using criteria set up by non-academics. It would appear therefore that explicit standards, those being met in only 2% of cases, have provided an unrealistic and impractical goal for physicians.

The empirical standards have "...realism and credibility. Actual practice is evidence that a given standard of care is not a visionary goal but a concrete reality that can be attained." (Donabedian, 1969 page 65). As several writers have realized, purely empirical standards do not exist. Normative judgements affect the kind of data collected even if such judgements were not the standard.

The major limitation of empirical standards, as Donabedian (1969) saw it, was that "average" practice could not necessarily be considered as the goal for physicians. The real value of empirical standards, perhaps, has been revealed in the spirit of clinical auditing. As Crombie (1971) explained, the data from several practices in conjuction with group discussions by the physicians fostered the development of realistic judgements.

Often, criteria for evaluating patient care includes an assessment of the physician's activities in relation to predetermined needs or expectations of patients. For this technique to be acceptable, the patient's expression of his needs must be considered valid. This method reflects, perhaps, a growing concern for the patient's point-of-view. Steiger and Yates (1969) devised a classification of patients' needs. Gonnella et al. (1970) founded their assessment of the quality of care on baseline data obtained by a questionnaire-history from the patient. They found that for 68 out of 133 patients, the histories recorded in the medical record were complete as judged by a history taken by questionnaire from the patient. Korsch et al. (1968), who were particularly interested in the interpersonal aspects of care, used the patients' expectations as the foundation for evaluating physicians' performance.

The issue of how best to assess the process of patient care has not been solved nor is it likely to be solved in the near future. Each method has been shown to have advantages and disadvantages. All the methods described above have been productive because the studies which used them have shed some light on a facet of the complex health care system.

2.2. Outcomes

2.2.1. Definitions and Concepts

In his paper called "Evolution of the Medical Audit", Lembcke (1967) outlined evaluations of hospital care in this century. He stated that between 1915 and the 1950's most of the effort was in the area of standardization. Hospitals were expected to meet certain specific standards in many areas from food services to staffing. Around 1915 and since 1950 more emphasis was placed on the "end-result" system of auditing. The pioneer of such efforts was Codman (1914) who felt that, like the manufacturing industry, hospitals ought to assess the quality of their output. To his mind the best indicator was whether the patient benefited or not. He carried out several studies at his institution (Codman, 1914; reported in Lembcke, 1967). The worth of such studies was not recognized at that time. In the 1950's interest in end-results reappeared.

Recent writers have defined the outcomes of medical care in various ways. Shapiro (1967) said "the term 'end result' refers to some measurable aspect of health status which is influenced by a particular element or array of these elements of medical care" (page 128). Donabedian (1969) referred to the assessment of outcomes as "the evaluation of end results in terms of health and satisfaction" (page 3). Elinson (1966) enumerated five kinds of end-result measures; death, disease, disability, discomfort and dissatisfaction. Williamson added a sixth "D", social disruption (reported in Sanazaro and Williamson, 1968). Sanazaro and Williamson (1968) set out to provide a systematic comprehensive classification of medical care. They used the critical incident technique which demanded that a large group of physicians provide six written descriptions of episodes of patient care. Three were of "effective" performance and three of "ineffective" performance; the effectiveness was judged by the reporting physician. The 6276 end-results reported by the physicians were grouped into twelve categories.

A) Six were patient end-results; longevity, physical abnormalities, psychological abnormalities, physical symptoms, psychological symptoms, function.

B) Six were process outcomes; attitudes toward physician and care, attitude toward and understanding of condition, compliance, incurring or avoiding unnecessary risks in medical care, hospitalization, cost.

It has been recognised that the terms "outcome" or "end-result" may refer to one of several variables. The following examples show that the nature of the appropriate measure of the end-result depended to a large extent on the aim of the research in question.

1. Gordis and Markowitz (1971) used these outcomes to assess comprehensive care: completeness of immunization, utilization of medical resources, morbidity, mortality.

2. The same researchers evaluated the continuity of care in terms of compliance on the part of the patients to prescriptions of penicillin (Gordis and Markowitz, 1971).

3. Starfield and Scheff (1972) assessed indicators of the process of care in terms of the level of haemoglobin of the patients.

4. Kaplan et al.(1972) evaluated the impact of comprehensive care on school attendance of the child patients.

5. Fink et al.(1969) used several measures of outcome to assess the care which included a management specialist. The outcome was completeness in implementing the management plan as reflected in scores on medication, procedures, appointments, understanding, compliance, and total effectiveness.

These five studies illustrate the wide range of outcome measures being used. Considerable confusion has resulted from the fact that, in some cases, end-results were indirectly measured using variables of the process of care (e.g. completeness of immunization, scores on medication). In cases like these, the terms process and outcome become interchangeable. Donabedian (1969) attempted to sort out the confusion. He drew a parallel between the study of organizations and the study of the health system. The study of organizations viewed the whole range of activities as steps, with each activity as an outcome for the preceding one and a precursor to the one that followed. In this context, the rigid division of the terms process of care and outcome of care became artificial and meaningless.

Two end-results of particular relevance to this report are health status and patient's satisfaction.

2.2.2. Measures of Health Status

The concept of health and its operational definitions have been elusive. The World Health Organization defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1958 page 459). The criteria for well-being have been just as difficult to define as the criteria for health (Silver, 1963). There have been several kinds of evidence of health used.

1. Clinical or physiological evidence.
2. Subjective evidence of the patient's feeling of discomfort, report of symptoms or opinions of health status.
3. The behavioural evidence of health status, the attribute of function whether it was physical, psychological or social.

Health status based on clinical evidence has been conceived in terms of the medical condition of the patients usually ascertained by an examination by a physician. Querido (1963) reported the use of a medical examination by an outside physician as a means of evaluating the work of general practitioners. A physician evaluated patients' physical condition as a measure of the effectiveness of the Family Health Maintenance Demonstration (Silver, 1963). Kelman et al.(1969) used medical records to obtain information on health status of hospitalized patients. They described as components of health status these aspects: acuteness or chronicity of pathology, level of discomfort and degree of life threat. Sullivan (1966) underlined the point that for clinical evidence to be valid it must come from a physician's examination, as was done in the studies reported immediately above. Such examinations are expensive while interviews or questionnaires with the patient would be less expensive. However, clinical evidence from patients was not considered valid.

Subjective assessments by patients of the level of their discomfort or symptoms have also been used as outcome measures. Hulka and Cassel (1972) used a measure of level of symptoms, in addition to functional capacity and medical status, as an outcome. Rating scales for individual symptoms have been used for subjective assessments. The opinion of the patient as to his feeling "better" or "worse" has also been used. Evidence from patients has been a less expensive measure of health status than the clinical evidence and therefore has advantages for large-scale surveys and large evaluative projects. However, the knowledge that discomfort has been differentially perceived by different groups of people (Zborowski, 1952; Zola, 1966), led to the suspicion that subjective assessments were affected by characteristics which were extraneous and irrelevant to an objective measure of health status (Sullivan, 1966).

Much of the recent activity in developing measures of health status has been focused on behavioural evidence or the level of a patient's function i.e. stayed in bed or not. The emphasis in these assessments has been on the social dimensions of morbidity. The development of assessments of health status based on measures of disability came in the illness and health surveys; from the one in Hagerstown Maryland in the 1920's through the Health Survey of 1935-36 and the Canadian Sickness Survey of 1951 to several in recent years (NCHS Series 1, 1964). Recent developments in measures of disability include the National Center for Health Statistics' questions which have been administered during the household interviews of the National Health Survey. These questions concerned days of bed disability, restricted activity and time lost from work or school (NCHS Series 1, 1964, NCHS Series 10, 1965).

The Activities of Daily Living (ADL) developed by Katz et al.(1963) reflected the aspect of function such as bathing, dressing, going to the toilet, transfer, continence and feeding. The ADL was devised as a measure of function of elderly and chronically ill persons. It has therefore been useful in assessments of home-care and rehabilitation programs (Katz et al., 1970).

The Indices of Social, Emotional and Physical Function developed by Sackett et al.(1974) consisted of scores from interview responses. These measures were devised and tested for reliability with a view to their use as outcome measures. They have been used in an assessment of nurse practitioners, known as the Burlington trial (Sackett et al., 1974).

Fanshel and Bush (1970) and Patrick, Bush and Chen (1973) combined the concept of function with the concept of prognosis (or expected transition to other levels of function) in their definition of "severity". Their research focused on devising a classification of function which took account of the social values of the categories. They devised three scales: 1) Physical Activity, 2) Mobility, 3) Social Activity. Working out all possible combinations of the three scales, while omitting very rare categories, they were left with 29 levels of function. They used psychological scaling techniques to ascertain which functional states were better or worse than other states. The results of their work supported the concept of function as a continuum of well-being with perceptible levels. The authors explained the usefulness of the knowledge about the relative levels of function.

The measures of functional status or disability avoided the difficulties of the clinical evidence. Cost, which has been the drawback of clinical evidence, has been relatively low for measures of functional status because questionnaire techniques have been possible. Measures of functional status have differed from subjective assessments in that they avoided ambiguity by focusing on an objective event (e.g. missing work, dressing). Both measures of functional status and subjective assessments have been suspected of being influenced by characteristics of the respondent (e.g. cultural factors, knowledge about illness, expectations of the family or boss). In Sullivan's (1966) view, the influence of the characteristics of the respondents was an integral part of the functional measure but was an artifact in the subjective assessments. It may be that for measures of functional status, the behaviour was influenced by the patient's characteristics but at the same time, the behaviour was accurately measured. However, the same is true of subjective assessments. Both functional status and subjective assessments represent an aspect of outcome different from the clinical evidence; the patient's point of view.

2.2.3. Measures of Satisfaction

With the increasing interest by medical associations and government bodies in public opinion concerning the medical profession (Pickering, 1973), the measurement of patient-satisfaction has become more common. The problem has been to find a measure of satisfaction which is relevant and discriminating. Simply to ask the question of the patient-respondent "Are you satisfied?" has consistently resulted in almost everyone replying "Yes" (Pickering, 1973; Enterline et al., 1973; Freidson, 1961).

A second concern with measures of satisfaction has been whether it was more appropriate to ask questions about doctors in general (indirect) or about the respondent's own doctor (direct) (J. Roy. Coll. Gen. Pract. Editorial, 1972; N.E.J.M. Editorial, 1973). The debate in the field of psychology concerning direct or indirect attitude tests has led to no firm conclusion as to which have been more valid (Kidder and Campbell, 1970; Kidder and Brickman, 1971; Cook and Sellitz, 1967; Campbell, 1967).

The direct question "How satisfied are you?" has been used with graded responses on scales of up to ten points. These scales were used in attempts to increase the discriminating power of the measure (Freidson, 1961; Rosenblatt and Mayer, 1972; Pickering, 1973; LeRiche et al., 1971; De Castro and Amin, 1970). Another direct approach was to ask a question about the quality of care e.g. "good, average, poor?", "like very much, a little, not at all" (Enterline et al., 1973; Cahal, 1962; Fisher, 1971; Bashchur et al., 1967). Other studies used questions about specific aspects of the care such as waiting time, the doctor's willingness to explain the illness and his friendliness (Freidson, 1961; Fisher, 1971; Korsch et al., 1968 Alpert et al., 1970; Cartwright, 1967).

Another means of increasing the discriminating power of a measure (besides increasing the number of possible responses from two to ten), has been to summate responses to multiple items in order to arrive at an overall score (Apostle and Oder, 1967; Hulka et al., 1970, Zyzanski et al., 1974). The method developed by Hulka et al., (1970) made use not only of many items contributing to an overall score, but also of the Thurstone Method of choosing and weighting the items (Thurstone, reprinted in 1970). Hulka's questionnaire contained statements of three types: 1. those regarding the professional competence of physicians, 2. their personal qualities and 3. the cost/convenience of the care. The reliability of the questionnaire has been tested (Zyzanski et al., 1974). Support was found for its discriminating power and construct validity (Hulka et al., 1971). This questionnaire approach to the measure of satisfaction was neither direct nor indirect but a combination of these two. While each item referred to doctors in general, the instructions to the respondent directed him to answer on the basis on his own personal experiences. As Hulka et al. (1971) stated "the data ... probably represent an intermediate between the 'general' (indirect) and the 'personal' (direct) response pattern" (page 671, bracketed terms are my own).

Several studies contained both direct and indirect assessments of satisfaction. All had flaws which made firm conclusions impossible.

1. Cahal (1962) used different sources of data for the direct and

indirect assessments of satisfaction.

2. Apostle and Oder (1967) asked their respondents different questions for their direct and indirect assessments.

3. Fisher (1971) used questions with different wording for his direct and indirect assessments.

The results of these studies are shown in the chart below.

	OPINION OF OWN DOCTOR: DIRECT	OPINION OF DOCTOR IN GENERAL: INDIRECT
1. Cahal (1962)	Favourable opinion. Data from a survey of patients.	Unfavourable opinion. Data from newspapers and other media reports.
2. Apostle and Oder (1967)	62.5% positive opinion. Data from a survey of a sample of households. Questions included: a) How long does the physician keep you waiting? b) In general do you feel he spends enough time with you?	55% positive opinion Data from same survey. Questions included: a) Doctors, like a lot of other people, are often selfish and interested in their own financial gain. b) When doctors are with patients they seem better than they really are.
3. Fisher (1971)	See Appendix I for more details.	
	Q1. Completeness of physician's explanation.	
	74% positive opinion	48% positive opinion
	Q2. Ease of communication between patients and physicians.	
	85% positive opinion	82% positive opinion

From this chart, there is little evidence to support the contention that general (indirect) and personal (direct) response patterns differed markedly.

Germane to this discussion is the relative sensitivity of direct and indirect measures of satisfaction as outcomes in assessments of health care. A study by Alpert et al. (1970) randomly allocated 750 low-income families into three groups 1) experimental group which received family-focused pediatric care, 2) attention control group; 3) non-attention control group. The patients' attitudes towards physicians in general (indirect) showed no difference among the three groups at the beginning of the three year period of the study and no change during the period. The patients' satisfaction with their present care (direct) was assessed at the end of the three year period. Significant differences were found among the three groups on several items. Differences showed the experimental group with the highest percentage of satisfied patients.

The emphasis placed on the concept and definition of the end-results of care by many writers has been complemented by considerable activity in the development and use of indices of health status and measures of satisfaction as criteria for the assessment of medical care.

Chapter Three

DEVELOPMENT OF THE METHOD OF IDENTIFYING THE HOLISTIC APPROACH

3.1. Steps in Achieving an Operational Definition of the Holistic Approach

For the purposes of this research, holistic care was defined as care which took account of the patient's physical, psychological and social problems. In other words, the physician viewed the patient's mind, body and environment as integral parts of his being and all these parts were taken into account in the physician's data-gathering and management.

Several different definitions of holistic care have been suggested by other writers and have been reviewed in Section 2.1.1.A.. Because there were a variety of definitions in the literature, it became most important that the meaning of the term holistic care, in the context of this research, be made clear.

Recent writers have expressed the need for evaluation of the social and psychological aspects of care to complement the evaluations which focused on the physical and technical aspects (Barro, 1973; Pelligrino, 1964; Wolfe and Badgley, 1972). While I agree with this point of view, I am convinced that a truly holistic approach to patient care would be reflected in the physical as well as the social and psychological aspects of care.

Consideration was given in this research to the patient's discomfort, worry, disturbance in daily living due to the complaint, and social problems. These aspects of a patient's visit to the physician were considered important as a result of previous research by myself using McWhinney's Classification of Patient Behaviour (McWhinney, 1972).

A summary of that research and its results is contained in Appendix II. The Classification of Patient Behaviour, in that research, called upon the physician to categorize a patient at any one visit using all his knowledge of the patient's concerns (physical, psychological and social). In the research being reported herein, specific knowledge by the physician was compared with information from the patient. However, the important dimensions - discomfort, worry, disturbance of daily living and social problems - derived from the earlier work.

Two sources of data regarding holistic care were used in the research. The first was the data-gathering stage of care by the physician and the second was the stage of management.

(1) Data gathering:

It was decided that the stage of data gathering by the physician would be assessed on the basis of his knowledge of the patient's complaints not on how he gathered the information. The alternative, an evaluation of the physician's interviewing technique, while recognized as very important, was not central to the research for this reason: the interview with the patient was only one of several possible methods of the physician obtaining information, others being phone calls or talks with relatives. The physician's knowledge of the patient was considered indicative of his interest in and skill in eliciting the patient's concerns. The importance of the knowledge and understanding on the part of the physician of the patient's presenting complaint has been pointed out by Magraw (1958). He viewed the patient's complaint as a variable of prime importance and said that it represented a confluence of the psychological, social and physical factors. A number of other writers agreed with Magraw. They recognized that the activities of data gathering ought to lead not merely to the conventional diagnosis but to a deep understanding of the patient's problems (McWhinney, 1972; Shocket and Lisansky, 1969; Greco; 1966; Balint, 1964; Browne and Freeling, 1967). Other researchers who assessed the knowledge by the physician of the patient's concerns and worries were Korsch et al. (1968) and Hulka et al.(1971).

(2) Management:

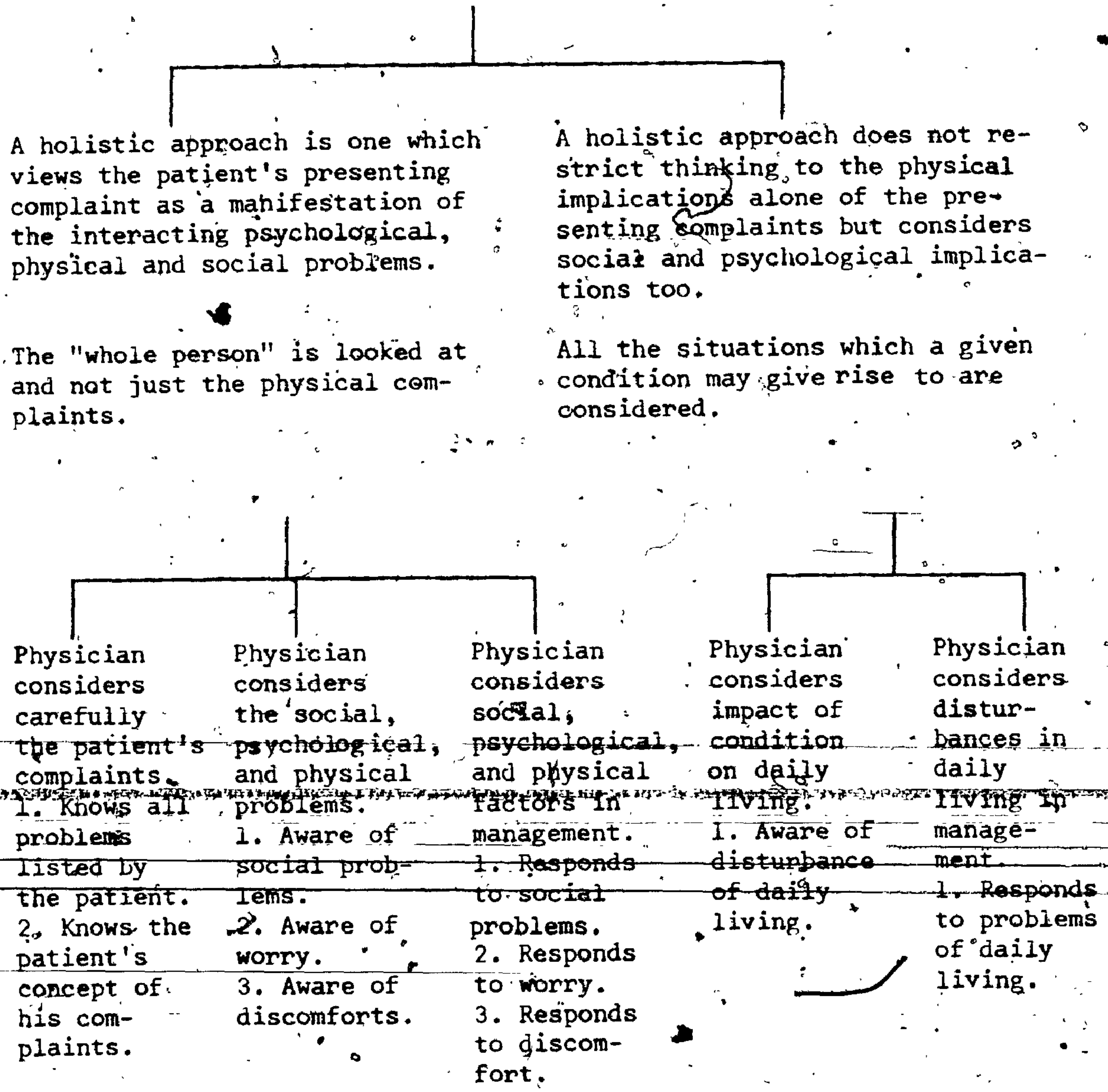
The assessment or measurement of management was difficult within the concept of holistic care. The usual methods of assessing management were considered inappropriate. For example, explicit criteria which set down specific activities which ought to be performed, have been used to evaluate care given patients with a particular disease entity (Falk et al., 1967; Kessner and Kalk, 1973a, 1973b; Sibley et al., 1973; Hulka and Cassel, 1973). An approach to evaluation by explicit criteria for care of patients with multiple and dissimilar problems has not been attempted, to my knowledge. Explicit criteria for tracer conditions was considered but rejected as an impractical method. It was not practical because, in the definition of holistic care, patient's physical, psychological and social problems were of equal importance and would all have had to be identical in any group of patients for whom criteria were to be outlined. In addition to the difficulty of finding patients who had similar, if not identical, physical, psychological and social problems, was the suspicion that agreement on the specific criteria would have been difficult to attain. Therefore an alternative to explicit criteria was sought. The method which was chosen was based on the patient's expression of his or her complaints. The assessment of the activities of management took the form of determining whether the physician did or did not respond to the complaints elicited from the patient. No effort was made to judge the adequacy of the response as this would have necessitated explicit criteria. Researchers who have used similar assessments of the activities of management (i.e. response or not by the physician to the patient's complaints) include Steiger and Yates (1969), Korsch et al.(1968) and Starfield and Scheff (1972).

The division of the measurement of holistic care into the two parts, assessment of the physician's knowledge and assessment of the physician's response, allowed the investigation of any relationship between the two. Knowledge on the part of the physician of the patient's family, work and other social problems has been emphasized as an important aspect of family practice, but the extent to which knowledge was translated into action and the relative importance of each to the patient was open to question.

A further feature of the definition of holistic care in this research, in addition to the importance of physical, psychological and social factors presented by the patient, was the consideration of the impact or implications of these factors on the daily life of the patient.

I used Pearson's (1973) procedure for operationalizing a concept. The concept of holistic care was defined more and more specifically until a series of indicators were identified. These indicators represented the operational definition of holistic care. The steps in this procedure are shown below.

A holistic approach was defined as one where the physician viewed the patient's mind, body and environment as integral parts of his being and where all these parts were taken into account in the process of defining the problem and then resolving it.



A holistic approach is one which views the patient's presenting complaint as a manifestation of the interacting psychological, physical and social problems.

The "whole person" is looked at and not just the physical complaints.

A holistic approach does not restrict thinking to the physical implications alone of the presenting complaints but considers social and psychological implications too.

All the situations which a given condition may give rise to are considered.

Physician considers carefully the patient's complaints.
1. Knows all problems listed by the patient.
2. Knows the patient's concept of his complaints.

Physician considers the social, psychological, and physical problems.
1. Aware of social problems.
2. Aware of worry.
3. Aware of discomforts.

Physician considers social, psychological, and physical factors in management.
1. Responds to social problems.
2. Responds to worry.
3. Responds to discomfort.

Physician considers impact of condition on daily living.
1. Aware of disturbance of daily living.

Physician considers disturbances in daily living in management.
1. Responds to problems of daily living.

3.2. Explanation of the Indicators of Holistic Care

Making the definition more and more specific, resulted in ten characteristics which, if observed, were taken as indicative of the holistic approach and contributed to a holistic score. Of these ten, six reflected the physician's knowledge and four concerned the physician's activites.

(1) Physician's Knowledge:

The physician's knowledge was assumed to reflect his demeanor, stance and openness with the patients. A patient was believed to identify with the physician and to select symptoms which he felt were likely to be acceptable to that physician. A holistic physician would therefore elicit more social and emotional complaints than a physician who paid attention only to physical complaints.

1. Knowledge by the physician of the total number of complaints. The first step in the physician's attempt to understand the patient's problem was taken as being his knowledge of the patient's complaints.

2. Awareness, on the part of the physician, of the way the patient understood his complaint. By knowing the complaint and being aware of how the patient viewed the complaint the physician would be able to add further insight in the process of defining the patient's problem. A physician who did not know how the patient viewed the complaint or the reason for his visiting, would not be in a position to increase the patient's understanding.

3. Awareness by the physician of the patient's social problems. This item reflected the physician's awareness of social and emotional factors which bothered the patient. In other words, this item distinguished those cases where the physician was not aware of any social problems bothering the patients, from those cases where he was aware. Cases where the physician felt a disturbance existed and where the patient denied any social problems were treated as reflecting shortcomings in the structured interview technique of the research project rather than shortcomings in the physician's awareness.

4. Awareness by the physician of the patient's worries regarding the complaints. The word "worries" implied rational or irrational anxieties, concerns and fears.

5. Awareness by the physician of the patient's perceptions of the subjective sensations of pain and discomfort relating to each of his complaints.

6. Awareness by the physician of the disturbances in daily living concomitant with and/or sequelae of the complaint.

(2) Physician's Activities:

The four characteristics which were felt to cover the physician's activities were in the realm of management or problem resolution. They were specific for the four dimensions considered important: the social problems, and the worry, discomforts and problems of daily living caused by the complaint.

7. Response to the patient's social problems.

8. Response to the patient's worry about the complaint.

9. Response to the patient's pain or discomfort.

10. Response to the patient's disturbance of daily living caused by the complaint.

3.3. Evaluation of the Indicators of Holistic Care by a Committee of Experts

A committee of family physicians was set up, chaired by Dr. Ian McWhinney. This committee consisted of physicians who were judged to have given considerable thought to the concept of holistic care and who were, to a lesser extent, familiar with the problems and limitations of research. The purpose of this committee was to express their critical opinion of the indicators of holistic care. Their judgement was sought on two fronts: 1) the degree to which the indicators reflected holistic care as defined and 2) the weightings of the indicators. These weightings would then be used for computing an overall score. It was felt that the contribution by this committee to the development of the method of identifying holistic care, would lend support for what Anastasi (1968) called "content validity".

Three men were chosen to sit on the committee of experts and all agreed to participate in evaluating the indicators of holistic care. They were Dr. Irving Vinger, Dr. Paul Newell and Dr. Michael Brennan. There were two steps to their contribution: 1) to obtain written comments from each member on the proposed indicators, 2) to obtain further opinions and ideas concerning the proposed indicators and to attach weights to the indicators at a meeting of the members.

Many of the written comments were related to the clarity of terms and the suggestions of the committee have since been incorporated in varying degrees in the present report. Several members called to question the meaning of indicator number two, the physician's awareness of the patient's concept of the complaint and this issue was resolved through more careful explanation. Some technical problems were pointed out, as well, and these have been corrected.

Two major overlapping conceptual issues were raised in the written comments and also at the meeting. The first was the comment that an important item had been missed, some indication of the physician's ability to integrate all the factors affecting a patient and respond to the patient in a way appropriate to this integrated analysis. The point was that holistic care was synergistic and not merely the sum of separate parts. The second issue raised was that the term holistic care implied more than care which included consideration of the social, psychological and physical factors even if they were dealt with in an integrated fashion. The term holistic implied an approach on the part of the physician which incorporated an understanding of human development. It implied care which viewed the patient not at a snap-shot moment in time, the visit to the physician, but rather viewed the patient's relationship with his past and his future. In addition to this question of human development, holistic care implied a set of values as well as behaviours on the part of the physician: this set would include empathy, awareness of his own person and a neutral, non-judgemental view. These two ideas (integrated approach and developmental approach) were discussed at the meeting of the committee in order to assess the possibility of handling some of these ideas in the research.

Three other suggestions which were brought up at the meeting were the possibilities of incorporating 1) the preventive approach 2) the family approach and 3) criteria for assessing the reason for a follow-up visit being arranged.

Generally, the result of the meeting of the committee of experts was to reject as impossible the addition of new indicators which would assess 1) integrated approach, 2) developmental approach, 3) preventive approach, 4) family approach, and 5) reason for follow-up. Details of the meeting appear as Appendix III. For each of these areas the major problem was thought to be in setting up standard criteria to be used in each case. In some instances, any criteria mentioned were not in a form which could be measured and were recognized as being "woolly". In other instances it was believed that each case would have to be reviewed by a clinician in order to evaluate the appropriateness of the physician's response. In almost every instance, someone on the committee pointed out that the existing proposal incorporated a good part of the concepts, particularly regarding human development and the integrated approach.

The committee of experts, essentially, thought that the attributes each of them considered necessary to their concept of holistic care (e.g. integrated approach) could not be operationalized at this point in time and therefore could not be specifically included in this research. However, they agreed that the indicators presented to them by myself adequately reflected the concept of holistic care as it had been defined in Section 3.1. of this thesis. They preferred to call the concept outlined in Section 3.1. comprehensive care rather than holistic care. They agreed that the attributes they felt represented holistic care, particularly the integrated approach and the developmental approach, while not specifically included in the indicators presented by myself, were incorporated to some extent indirectly.

Also dealt with at the meeting of the committee of experts was the matter of weighting each of the indicators in terms of their importance in the concept of holistic care. Of the four participants in this endeavour (three members and the chairman), one could not weight the items. He believed it was an impossible and meaningless task. The other three made attempts which disagreed widely (see the details in Appendix III). It appeared that any weightings included in the analysis would have to be derived empirically rather than from a committee.

3.4. Validity of the Indicators of Holistic Care

Anastasi (1968) has outlined several kinds of validity: three are of interest to this discussion. The first was content validity; the extent to which a method was considered acceptable by a group of experts. The review of the indicators of holistic care by a committee of experts has been presented in the previous section (See Section 3.3.). I suggest that their comments, on the whole, supported the validity of the indicators.

A second kind of validity was criterion validity; whereby the method under study was compared with an external, objective measure of the same concept, a criterion. Two external criteria were considered but were rejected. Therefore it was decided not to pursue an assessment of criterion validity. The two measures considered as possible criteria were: 1) peer-review using explicit standards and 2) peer-review using implicit standards.

Peer-review using explicit standards required a list of expected activities of physicians for patients presenting with a certain problem. This criterion was rendered impracticable for the present study because of the patients' unique combinations of physical, psychological and social problems. Assuming agreement could have been reached by a group of physicians regarding the content of each list of activities, the number of lists would have been so high as to be impractical. Also, peer-review has been criticized by other authors. Morehead (1967) recognized it as being very costly in terms of time and difficult because of the need to find an expert reviewer. Brook and Appel (1973) found that peer-review with explicit standards did not relate to outcomes. For these reasons, peer-review using explicit standards was rejected as a practical criterion for a test of validity.

Peer-review using implicit standards was the second alternative considered. To compare the results of the indicators in this report with the implicit criteria of a peer-reviewer would have meant comparing an untested method with an unknown external criterion; "unknown" because, as has been pointed out several times (Section 2.1.1. and Section 3.3.), many concepts of holistic care exist. Disparities between the two methods would not necessarily have indicated that the indicators were faulty or incomplete. Such differences could have meant that the expert-reviewer used irrelevant standards. Because there existed the possibility of results which could not be interpreted clearly, any attempt at assessing criterion validity was rejected.

Validity was therefore assessed using construct validity. Construct validity refers to empirical support for a method as a measure of the theoretical trait (Anastasi, 1968; Sullivan, 1966). In other words, data which reveal expected relationships with the measure are said to contribute to construct validity. Anastasi (1968) used as an example the relationship between age and an intelligence test for children. Such an assessment was based on the assumption that, for children, intelligence increases with age. Hulka et al. (1971) found associations in the expected direction between characteristics of respondents and their measure of satisfaction. They interpreted their findings as support for the construct validity of the measure. In the present study, the test of construct validity was the relationship between the indicators of holistic care and the number of recent visits by the patient to the physician. The prediction was that completeness of a physician's knowledge and response increased as the number of recent visits increased.

Chapter Four

METHODS OF DATA COLLECTION

4.1 Summary of the Methods

Setting - group practice of six family physicians.

Design - prospective, patients were followed for three months.

Physicians - a) reputation for complete records
b) moderate degree of holistic care expected

Patients - a) aged 25 or over
b) had at least one chronic condition on a list
c) were bothered by at least one complaint at the time of the preliminary visit.
d) approximately 75 patients per physician

Baseline information from the patient - interview at the beginning of the three month period of study eliciting:
a) demographic and family characteristics
b) complaints of the patient
c) worries of the patient
d) disturbances of daily living of the patient
e) social problems of the patient

Physician's knowledge - ascertained from a questionnaire completed at the end of the three months.

Physician's response - ascertained from the medical records of the three months.

Outcome information from the patient - interview at the end of the three month period of study eliciting:
a) patient's recovery

b) patient's level of activity

c) patient's satisfaction

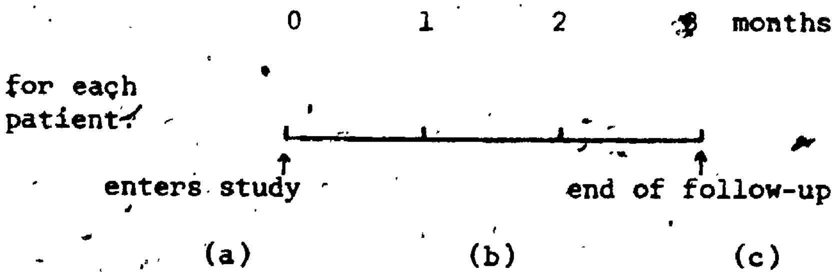
Indicators of holistic care - these were based on data of physician's knowledge of and response to patient's problems.

4.2. Setting

The setting of the collection of data was the Tavistock Family Health Centre in the town of Tavistock, Ontario. The town lies between Stratford and London and has a population of 1,400. The Tavistock Family Health Centre is a group practice of six family physicians (five full-time, one part-time). They are the only family physicians in a radius of about 10 miles around the town and they estimate that they serve close to 100% of the town's citizens. The physicians are considered by their colleagues elsewhere to be active and enthusiastic family physicians: one is a former president of the Canadian College of Family Physicians.

4.3 Design

The design was prospective in the sense that the patients entered the study (at which time their complaints and social problems were ascertained) and were followed for three months (the management activities were derived from the medical records of the three-month period).



At point (a), the patient arrived at the physician's office. The patient was interviewed in the office before seeing the physician, the interview conducted by myself or, occasionally if I was unavailable, by a nurse. The interview was designed (see Appendix IV) to ascertain 1) the complaints which the patient brought to the physician 2) the pain or discomfort of these complaints 3) worry about these complaints 4) disturbance of daily living caused by these complaints 5) social problems bothering the patient. All complaints were considered, not exclusively those complaints which were new to the physician. During the following three month period (b), the activities of the physician were recorded in the medical record for all those patients who entered the study. The activities of all visits during the three month period were included. At time (c), the end of the follow-up, three items were measured. First, the physician's knowledge of the patient's complaints, concerns and social problems was assessed by having the physician complete the questionnaire shown in Appendix V. Secondly, the patient's satisfaction with the physician and the care provided was assessed by having the patient answer a list of questions in his home. The questions used (shown in Appendix VI) were taken from a questionnaire developed recently under the auspices of the American Academy of Family Practice (Hulka et al., 1970; Zyzanski et al., 1974). Thirdly, the patient's health status was ascertained both generally and specifically regarding his complaints, concerns and social problems (Appendix VII).

4.4. Choice of Physicians

The physicians in this study met two criteria:

1) their records had to be complete and legible, because the list of

their activities was to come from their records, 2) the expected degree of holistic care had to be at least moderate in order to give the proposed method a chance of identifying some episodes of holistic care. The interest of the Tavistock physicians in the quality of their records was illustrated by the fact that they claimed to have converted around 60% of their patient-records to problem-oriented records and that one of their group had published a paper on record keeping (Weston, 1973). As to the expected degree of holistic care, it was thought that this group practised in a way consistent with the guidelines of family medicine which they teach to fourth year clinical clerks of the University of Western Ontario Medical School.

These physicians worked together and shared an interest in the quality of the medical records. It was recognized that the capacity of the study to identify variations from doctor to doctor was diminished due to the choice of a fairly homogeneous group of physicians.

Other researchers have recognised the difficulty in obtaining representative samples of physicians in studies of health care (Johnson, 1973; Cartwright, 1967; Querido, 1963). Because of high refusal rates, samples have been somewhat self-selected. In the case of the present study no attempt was made to obtain a representative sample. The main reason was that the study was a feasibility study. Since no generalizations were planned, a small group of physicians rather than a representative sample, was felt to be adequate.

4.5 Choice of Patients

In order to impose some degree of homogeneity on the group of patients in the study, it was decided to accept only those patients who

(1) were aged 25 years or over, (2) had at least one of a list of chronic conditions (listed in Appendix VIII) and (3) were bothered in some way by one of the complaints they brought to the physician at the visit when they entered the study. These criteria were decided on because, firstly, it was felt that chronic patients were more likely to have received holistic care than acute patients who visited infrequently. It was important for the test of the method that there be some expectation of holistic care in a sizable proportion of the cases (perhaps in 50% of the cases). Secondly, it was felt that each patient must have at least one of his complaints bothering him so that a response on the part of the physician was indicated. Also, the outcome measures would relate to patients with at least one baseline complaint without which no measure of improvement would be possible.

Other researchers have mentioned chronic illnesses as appropriate conditions to choose when evaluating primary care. Morehead (1967) believed that more information was expected in medical records concerning chronic illness. In addition she thought it essential to exclude self-limiting illnesses from her evaluation. Last (1973) outlined the natural history of chronic illnesses and emphasized that primary practice provided the opportunity to follow such patients for considerable periods of time.

The list of chronic conditions was drawn up with suggestions from my supervisors, members of the committee of experts and the participating physicians in Tavistock. This list deliberately excluded chronic emotional and social problems. One reason for excluding patients who had only chronic emotional and social problems was to enhance the homogeneity of the study group. In addition, the quality of the data, as subjective as the kind in this study, was felt to be threatened by the deliberate inclusion of patients suffering from conditions such as chronic depression and chronic schizophrenia.

The sampling frame, then, consisted of all patients over 25 years who had one of the listed chronic illnesses and who were bothered by a current complaint. The sample itself was defined by the date the patients visited their physician. For thirteen weeks any patients fitting the criteria who visited their doctor entered the study. The length of time for entering patients depended solely on the goal of the number of patients.

4.6. Strategy for Collecting All Eligible Patients

On the days when patients were entering the study, I checked each patient on the schedule for each physician in the study. The existence of one or more of the listed chronic conditions was established by myself, by looking at the problem list at the front of the problem-oriented medical record and, in addition, checking the notes on past visits to the physician in case the problem list was incomplete. The age of the patient was ascertained at a glance, because the birth date was displayed at the top of the problem list of the medical record. Having identified all patients who were 25 years and over and who had at least one of the chronic conditions on the list, I asked for cooperation from the patient and, if it was given, began the initial interview.

The third criterion for selecting those patients who would remain with the study throughout the follow-up period was based on information obtained at the first interview. Patients were eligible for follow-up if they had at least one current complaint which they admitted in the first interview caused them discomfort, worry or disturbance in daily living (or all three). Patients were eligible regardless of whether the complaint was new or of some duration. The third criterion for selecting patients for follow-up was based on consideration of the merits and demerits of several alternatives. These alternatives and the justification for choosing the criteria described above are contained in Appendix IX.

Before arriving at the collection procedure described above, another method was tried. It was found wanting and replaced by the above method. A description of the first method and its drawbacks is also contained in Appendix IX.

4.7, Number of Patients

Data was gathered on approximately 75 patients per physician in order to ensure that the activities of the physicians were typical of the practices and not likely to be atypical due to chance. In addition, approximately equal numbers of patients were necessary from each physician in order to eliminate from the combined data the possibility of the predominance of one physician.

Some researchers have opted for small numbers of patients for each physician in their studies on the grounds that the physician did not have time to become affected by the research (Cartwright et al., 1973). Such studies included large numbers of physicians. Brook and Appel (1974) found that their implicit method of evaluation was not a reliable estimate of a physician's performance unless a fairly large sample of patients was studied.

4.8. Development of the Patient-Questionnaire (Interview).

This questionnaire was designed to provide information regarding 1) demographic and family characteristics 2) complaints which the patient brought to the physician 3) worries concerning the complaints 4) disturbances of daily living due to the complaints 5) the social problems. The layout of the questions dealing with demographic and family characteristics came from two earlier questionnaires which are described in Appendix X. From the same earlier questionnaires came the list of social problems and the decision to use a 4-point scale of possible responses. The development of the list of social problems required extensive study over several years and included administering interviews and two trial mailings of questionnaires. The details of this work are also included in Appendix X.

The four dimensions of the patients' complaints (discomfort, worry, disturbance of daily living and social problems) were derived from McWhinney's taxonomy of patient behaviour (McWhinney, 1972) and the concept of holistic care described in Section 3.1. Several possible formats of the questionnaire were considered before the straightforward version shown in Appendix IV was chosen.

4.9. Test of Completeness of the Patient-Questionnaire

The questionnaire was tested for completeness and accuracy of the information. The questionnaire in Appendix IV was compared with the same information derived from an interview. Before the study began, a series of 8 patients who met the study criteria were given the questionnaire and later were interviewed by a medical student. The interview was semi-structured in the sense that certain questions were asked but the order of the questions and the number of supplementary questions was left up to the interviewer. Immediately after the interview, this information was compared with the form filled out by the patient.

The report written by the medical student is shown in Appendix XI. Preliminary results indicated that complete information was not forthcoming from the questionnaire method alone. An interview of half an hour, or preferably more, and in a relaxed atmosphere, succeeded in eliciting more complaints and social problems and tended to increase the completeness of the responses. On the basis of these results, the questionnaire approach was changed to an interview approach.

4.10. Potential Effect of the Research on the Doctor-Patient Encounter.

The patient was interviewed by either the nurse or myself immediately before he saw the physician. It was considered likely that such an in-depth interview had some effect on the ensuing doctor-patient encounter. The possible effects were 1) to have organized the patient's thoughts and understanding of his complaints, thus aiding the patient in his communication with the physician and thereby increasing the chance of an appropriate response by the physician, 2) to have provided for the patient an opportunity to describe his complaints and ventilate so that he felt it unnecessary to mention some or all of the factors to the physician, thereby decreasing the quality of the communication with the physician. If these possible reactions affected various age groups and education groups differently, then the expected relationship between these characteristics of the patients and the indicators of the physician's knowledge could have been either exaggerated or weakened.

In order to assess the effect of the initial interview on the doctor-patient encounter, the scores were compared of the indicators of physician's knowledge between patients who were interviewed before they saw the physician (83%) and patients who were interviewed after they saw the physician (17%). The seventeen percent were interviewed after the visit with the physician only because there was not time to interview them before the visit.

There were seven indicators of physician's knowledge and none of these seven were associated with the timing of the preliminary interview. Furthermore, there was no interaction effect with characteristics of the patients such as age or level of education.

Two conclusions are possible. The first is that the preliminary interview had no influence on the ensuing doctor-patient encounter. A second is that the two possible effects occurred equally and cancelled each other; 1) aiding the patient's communication with physician, 2) decreasing the quality of the communication. Most important for the further analysis of the data was the finding that any effects had equal influence in all age groups and levels of education, thereby eliminating the possibility of bias.

4.11. Three Month Follow-Up

The follow-up period of three months was chosen because it was felt that a period of that length would allow enough time for any physician who planned a holistic approach to institute it. It was thought that several follow-up visits ought to have been necessary for the physician to acquire enough knowledge of the current complaints and especially to break down any barriers on the part of the patient to admitting or discussing anxieties and social problems. I was confident that with the fairly long period of three months, if the physician had any intention of instituting a holistic approach, he had opportunity and time enough to fulfil his intentions.

It was difficult to decide on a three-month period of care. Others, too, have recognized that an episode of care has no easy definition (Donabedian, 1969; Last, 1973; Solon et al, 1967). What is needed, in my opinion, is information regarding the relative merits of new complaints as the beginning point of the episode as compared with old complaints. In addition, for outcome analysis to be sensitive, the time certain effects can be expected must be known. Until a great deal more information is available, decisions of what segment of care to evaluate will be somewhat arbitrary.

In fact, the length of the follow-up periods varied from 10 to 19 weeks (see Table 1). The reason for the varying follow-up periods was a practical one - the restrictions in productivity imposed by having one interviewer only. The end of the follow-up periods marked the end-point of the assessment of the physician's activities and also the time of the follow-up interview with the patient for the purpose of measuring recovery and satisfaction. In this study, the varying length of the follow-up periods did not affect the information received at follow-up.

4.12. Physician's Knowledge

At the end of the three month follow-up period, the physician was asked to complete the questionnaire shown in Appendix V. This questionnaire was designed to ascertain the physician's knowledge of the patient's complaints, concerns and social problems. This questionnaire was administered at the end of the three months because, if it had been given

TABLE 1

Distribution of the Length of the Follow-Up Periods

Length of follow-up period	N	%
10-11 weeks	68	22.7
12-13 weeks	57	19.1
14 weeks	73	24.4
15 weeks	54	18.1
16-19 weeks	47	15.7
TOTAL	299	100.0

at the beginning of the three months, it was likely to have shown an incomplete picture of the knowledge that influenced the management activities during the ensuing three months. The activities were more likely to depend on knowledge which increased as the time passed.

In addition, it was thought that by the act of filling out the questionnaire early in the episode, the physician might have been prompted to explore some of the areas of concern mentioned in the questionnaire at a subsequent encounter - an action he might not have taken if not prompted by the questionnaire. The kind of effect which I sought to diminish has been discussed by several writers (Korsch et al., 1968; Cartwright et al., 1973; Donabedian, 1969; Kelman et al., 1969) and has often been called the Hawthorne effect. Therefore, in order to avoid the constant reminder of one of the main aims of the research - to assess knowledge about the patients - the design called for physicians to complete that questionnaire at the end of the three months and they were encouraged to consult their records as an aid to filling it out.

Two other precautions were taken in order to minimize the Hawthorne effect:

1. The physicians saw their questionnaire only once. This was at a preparatory meeting held several months before the study commenced. They did not see the questionnaires again until they began completing them.

2. The physicians were not told which of their patients were in the study and which were not. They did, on occasion find out that a certain patient was being interviewed for the study but, on the whole, they were too busy to notice.

4.13. Physician's Response

The data concerning the physician's activities of management were derived from the medical records of the patients in the study. Every visit which occurred during the three-month follow-up period was included. The frequency distribution of the number of visits during follow-up is shown in Table 2. The data were transferred from the medical record to the form shown in Appendix XII. Each of the presenting complaints which bothered the patient at the initial interview was listed on the form. The kind of response made to each specific complaint was checked off on the form. The complaints, although they had been bothering the patient at the time of the preliminary interview, were both new and old. It was not practicable to distinguish, for the total group, which were new complaints and which were old complaints. Therefore, when the physician's response to the patient's complaints is referred to, what is really meant is the physician's further response after the patient entered the study.

4.14. Test of Completeness of Medical Records

The source of data for the classification of the physician's activities of management was the medical records of the patients who met the selection criteria. Some precautions were taken to ensure that the records were complete. First of all we chose physicians who were known to have an interest in good records. Also, tests of completeness of records were undertaken during the course of the study. There were three specific activities in this area.

1) A review, with the doctor, of records for randomly-chosen days in the early weeks of the study. The purpose of reviewing these records was

TABLE 2

Distribution of the Number of Patient Visits to the Physician During the Study Period

Number of Visits	N	%
1	46	15.4
2	70	23.4
3	65	21.7
4	48	16.1
5+	70	23.4
TOTAL	299	100.0

to impress upon the doctors the kinds of data which were necessary to include in the record. The record was shown to the physician, and at the same time he was shown a draft of a list of possible activities (see Appendix XII). He was asked what he had done during the visit. If any activities were mentioned which did not seem to be written in the record, the physician was asked where it had been noted. Any abbreviations were noted by myself and used routinely when analyzing future records.

2) The doctor's own medical-record audit. One was begun in March, 1973, and another began in November, 1973. The first audit was performed by the nurses. It was used as a focus for peer discussion and peer pressure to improve. The nurses answered several questions about the records of 25 consecutive patients for each doctor. The questions reflected the interest of the group in the quality of their problem-oriented records. The four questions of most interest here and the responses for charts of chronically ill patients were:

1) Was the problem sheet used? 79% YES
2) Was the problem sheet used today? 42% YES
3) Were there problem-oriented progress notes? 66% YES
4) Were problem-oriented progress notes made today? 66% YES

For the second audit, the physicians reviewed the record of one of the other physicians and rated it according to the clarity of the items of management. The three questions most relevant here and their results were:

1) Do the plans clearly reflect the physician's intentions regarding management? 80% satisfactory.
2) Do the plans clearly reflect the physician's intentions

regarding further investigation? 78% satisfactory.

3) Do the plans clearly reflect the physician's intentions regarding patient education? 30% satisfactory.

3) The test of completeness of the records of the physician was conducted by comparing the activities of the physicians, as revealed on an audio-tape recording of a visit, to the medical record made by the doctor on that visit. The physicians were not told the real reason for the tape recordings. Therefore they were not likely to have kept atypically complete records for those visits which were taped. The interview was taped, listened to by myself and all the activities noted. Eight months later, after the memory of the tapes was gone, I checked the medical records and noted the activities which were recorded. Of all the activities noted on the tapes, a numerical count of those in the record and those not in the record was kept and for each physician I was able to calculate a "percent completeness-of-record". It was also important to present the kinds of activities lacking in the record and to interpret the influence such incompleteness had on the results - i.e. on the holistic scores. This is important particularly in the light of any existing differences among the physicians with regard to the percent of completeness.

The importance of testing the completeness of medical records has been pointed out by several authors (Donabedian, 1969; Barro, 1973; Kroeger et al., 1965; Gonnella et al., 1970). Some writers remarked that information regarding family and social-psychological problems was not well recorded.

Three of the five physicians participated in the test: One would not allow audio-taping, and another taped on the centre's tape recorder and these tapes were lost. A total of 47 presenting complaints were analyzed: 9 from one physician, 18 and 20 from the others. Table 3 shows that responses noted from the tape were written in the record 93.3% of the time for discomfort, 60% of the time for worries, 100% of the time for disturbance of daily living (note, however, that there was only one case here), 66.7% for social problems. There was no evidence that any one physician was atypical except for response to worry where one physician showed less complete recording than his colleagues.

I concluded that the records adequately reflected the physician's responses to discomfort and disturbances of daily living while substantial under-reporting affected the responses to worries and social problems.

4.15. Locale of Follow-up Interview

It was decided that the follow-up interview, which was designed to elicit information regarding the patient's recovery, level of activity and satisfaction, would be conducted at the patient's home. The reason for this decision was the suspicion that the patient's willingness to give a socially unacceptable but honest response regarding his satisfaction with the care, was likely to be impeded if the interview was conducted at the physician's office.

In spite of the decision to interview all patients in their homes, some patients preferred to be interviewed in the physician's office. Rather than lose these patients to follow-up, it was decided to conduct some interviews at the physician's office. There were 73.6% of the patients interviewed at home while 26.4% were interviewed in the office. Those interviewed in the office did not show greater

TABLE 3

Completeness of Information in the Medical Records Regarding Physician's Responses to Discomfort, Worry, Disturbance of Daily Living and Social Problems - A Comparison of Tape Recorded Data and the Medical Records

	Yes in Med. Rec.		No in Med. Rec.		Total	
	N	%	N	%	N	%
Response to Discomfort						
Yes on Tape	42	93.3	3	6.7	45	100.0
No on Tape	0	0.0	2	100.0	2	100.0
Response to Worry						
Yes on Tape	9	60.0	6	40.0	15	100.0
No on Tape	4	12.5	28	87.5	32	100.0
Response to Disturbance in Daily Living						
Yes on Tape	1	100.0	0	0.0	1	100.0
No on Tape	0	0.0	46	100.0	46	100.0
Response to Social Problems						
Yes on Tape	8	66.7	4	33.3	12	100.0
No on Tape	2	100.0	0	0.0	2	100.0

satisfaction than those at home - providing no support for the above hypothesis. However, the levels of general recovery and recovery from discomfort were significantly lower for those interviewed in the office, perhaps because these patients were still ill enough to have a doctor's appointment coinciding with the follow-up interview. In order to find out if locale of follow-up was a variable confounding the relationship between the indicators of holistic care and the recovery measures, the distributions of the scores of the indicators were inspected for each locale of follow-up. These distributions were similar for each locale indicating no possibility of a confounding influence.

4.16. Measures of Health Status

There were three kinds of measures of recovery (see Appendix VII).

1. The first was the assessment of discomfort, worry or disturbance of daily living for each complaint as well as the social problems. This assessment was made at the initial interview and again at the follow-up interview to allow for a before-after comparison. It will be called the patients evaluation of specific progress.

2. The second was a global assessment of recovery. The patient was asked at the follow-up interview "Do you feel better or worse than you did three months ago ... or just about the same?" It will be called the patient's evaluation of general progress. Both of these assessments were subjective measures of recovery.

3. The third assessment was an attempt to ascertain disability. Three questions which had been used in morbidity surveys were used: first about staying in bed, second about reduced activities and third about health. This assessment of disability was ascertained at two points

in time (initial and follow-up interview) in order for the change in disability to be known. These questions were added to the initial interview after several weeks of data collection even though the group of patients for whom this information was available was therefore smaller than the total number in the study. The justification for including these variables and the reason for their late inclusion are discussed in Appendix XIII.

4.17. Measures of Satisfaction

Appendix VI shows three different types of questionnaires assessing patients' satisfaction. The first consisted of fourteen statements (developed by Hulka et al., 1970) with a preamble stating that the respondents were to think about doctors in general when replying (general questionnaire). The second questionnaire used the same fourteen statements with instructions similar to Hulka's: "We want to know what you personally think about the doctors and the care you have received" (intermediate). In the third questionnaire, the fourteen statements were worded so that the doctors providing the care were specified each time (personal).

Very early in the development of this research, it became obvious that any decision to choose one of these three approaches would have been based on opinion because, to our knowledge, no information existed which would shed light on their relative merits. Hulka, who developed the satisfaction scale, made the case for the intermediate approach. Physicians involved with the development of the study being reported here felt that Hulka's approach emphasized attitudes toward doctors in general and therefore could not be construed as a measure of satisfaction with care by a specific doctor.

Because of the lack of clarity in this area, it was decided to use all three approaches and to incorporate into the research, a comparison among them. Such a comparison, it was hoped, would provide information useful to other researchers when they come to make a decision regarding the kind of satisfaction measure to choose.

The patients who were eligible for follow-up were randomly allocated to one of three groups. Each group was administered a different kind of satisfaction questionnaire. The allocation allowed patients of each of the five physicians to be equally distributed in the three groups (i.e. random allocation stratified by physician).

The results of the three different approaches were compared as to their (1) scores, (2) discriminating power, (3) reliability and (4) validity.

4.18. Data Sources and Scoring of the Holistic Approach

The purpose of the scoring was to attach a numerical value to each three-month episode of medical care, this value representing the extent to which holistic care was undertaken. I did not plan to use the actual scores in the analyses but rather to use groups of scores, i.e. high, medium and low scores. The exact system of scoring was worked out in detail during the course of this research. There were several possibilities for scoring the holistic approach. Alternative #1: The simplest involved giving an all-or-nothing score to each of the eleven indicators of holistic care. For example, the physician either knew (score of 1) or did not know (score of zero) about the patient's complaints: he was either aware (score of one) or not aware (score of zero) of the patient's concept of the complaints. Each of the eleven indicators would have been handled in this fashion and the physician would have gained a score out of the highest possible score of eleven. The question we asked was, did this simple method realistically reflect holistic care? Two adjustments were thought to enhance the realism of the score. Alternative #2: Gradations of performance could be allowed within each item, e.g. scores of from 0% to 100% for a single item. Alternative #3: Important items could be given large scores in order to derive a weighted total score.

It was decided that gradation of performance within each of the eleven indicators was the alternative of choice. The gradation consisted of a percentage which represented the number of complaints known or responded to (depending which indicator one is referring to) divided by the total number of complaints bothering the patient. For a patient with two complaints with discomfort, the physician could earn one of three possible scores on the two indicators concerned with discomfort: knowledge of discomfort and response to discomfort. The three possible scores were: 2 out of 2 or 100%, 1 out of 2 or 50% and 0 out of 2 or 0%. For patients who had no complaints with discomfort (only complaints with worry or a disturbance of daily living) no score was calculated for the two indicators which dealth with discomfort. Therefore there was no measure of the doctor knowing or responding to problems which were not admitted by the patient. For all indicators, the starting point was the patient's baseline complaint.

The range of scores for any indicator, then, represented the completeness of the doctor's knowledge or response to the whole series of complaints of the patient: knowledge or response to all, some or none of the complaints.

It is important to note that we were able to score patients with different numbers of complaints using this scheme. Possible scores for patients with one complaint were 100% or 0%: for patients with three complaints were 100%, 66%, 33%, 0%: for patients with five complaints were 100%, 80%, 60%, 40%, 20%, 0%. However this scoring method did not overcome my suspicion that it was easier for a physician to attain a high score for a patient with only one complaint than for a patient with many complaints. "Number of complaints" was therefore placed first on the list of possible confounding variables for later investigation when analyzing the data.

As reported in Section 3.3 of this thesis, when I presented the eleven indicators to the committee of experts and asked them to weight each item, they found it impossible to do. Any weighting of the indicators, other than equal weighting giving an average score, was rejected. The average score itself was suspected of camouflaging meaningful characteristics of the physician's care and, therefore, it was decided to analyze each indicator separately.

The first seven indicators dealt with physician's knowledge of his patient. The indicators were based on a comparison of the interview with the patient and the questionnaire completed by the physician. The items of interest were the list of complaints and the level of discomfort, worry, disturbance of daily living and social problems. There were four levels to choose from: (1) none at all, (2) a little, (3) a fair amount, (4) a lot. Physicians who underestimated by more than one level were given a score of zero on knowledge of the magnitude of the problems. Physicians were not penalized for overestimating a patient's problem. The sources of data of the seven indicators of knowledge are described below.

1. Knowledge by the physician of the total number of complaints. The physician's knowledge was assessed by comparing the list of problems written by the patient on the patient-questionnaire with the list of problems for that patient written by the physician on the physician-questionnaire.

2. Awareness, on the part of the physician, of the way the patient conceives his complaint. As in item one, the patient's list was compared with the physician's list.

3. Knowledge by the physician of the existence of the patient's social problems. This involved a comparison between the patient's response to the list of social factors shown at the interview and the physician's check-mark for that patient on a similar list on the physician-questionnaire. For every problem indicated by the patient the physician had also to indicate that there was a problem. But if the physician knew of a problem which was denied by the patient, the physician's score was not diminished.

4. Knowledge by the physician of the magnitude of the patient's social problem. The comparison of the patient's social problems and the ones the physician checked-off for that patient, for this indicator, included consideration of the magnitude of the problem. If the physician came within one of the three levels of magnitude then he was said to have knowledge. If he underestimated the magnitude he was given a score of zero on knowledge.

5. Knowledge by the physician of the patient's worries regarding the complaints. Again, I compared the responses of the patient and the

physician on the question concerning worry. If the patient's and physician's concepts of worry differed, then physician's scores would be lower than would have been the case if the concepts coincided. No attempt was made to differentiate between the two reasons for low scores on this indicator, a) lack of knowledge, b) different concepts of worry.

6. Awareness, by the physician, of the patient's perceptions of pain and discomfort relating to each of his complaints. Comparison was made of the responses of the patient and the physician on the question concerning pain and discomfort.

7. Awareness, by the physician, of the disturbances of daily living caused by the complaints. I compared the responses of the patient and the physician on the question concerning disturbances of daily living.

The last four indicators of holistic care dealt with the physician's response to the patient's complaints. For every problem mentioned by the patient in the patient-questionnaire, some indication of action by the physician was sought by scanning his records for the three-month follow-up period. The nature of the actions by the physician was recorded on a data sheet like the one shown in Appendix XII. Each action was linked with a particular presenting complaint. Since it was not possible from the medical record to associate each action with the worry or disturbance of daily living because of the complaints, rules were set up to facilitate the decision as to whether or not the physician had responded to the worry or disturbance. These rules are shown in Appendix XIV. Any activity at all associated with a certain complaint was taken as a response to the discomfort of the complaint. Similarly, any activity associated in the medical record with a particular social problem was taken as a response to that problem.

Chapter Five

PREDICTIONS AND DATA ANALYSIS

5.1. Testing the Hypotheses

I used contingency coefficients to assess the strength of the associations and the χ^2 test to determine their statistical significance. The conventional level of significance, $p < .05$ was used. The χ^2 and contingency coefficient (described by Siegel, 1956) were chosen because the data fell into discrete categories. For such data the more powerful measures of association were not applicable.

To facilitate the interpretation of the tables in this report, the reader is reminded of several characteristics of the contingency coefficients:

1) No direction is implied in the coefficient. It was necessary to inspect the contingency tables to find out the direction of any relationship. To identify negative relationships to the reader, I have taken the liberty of placing a minus sign in front of the contingency coefficient.

2) Ideally, the range of a measure of association is from 0 to 1. The contingency coefficient does not attain unity when variables are perfectly correlated. For 3 x 3 tables the upper limit is 0.82.

3) Contingency coefficients from tables which do not have the same number of degrees of freedom are not comparable.

The hypotheses which were tested using the contingency coefficient and the χ^2 test follow:

1. that the number of recent visits by the patient to the doctor was associated with the indicators of physician's knowledge. It seemed

logical that the more times the physician had seen the patient recently, the more he would know about his current complaints. Because of the strong intuitive appeal of this prediction, it was chosen as a test of the construct validity of the indicators of knowledge and the results will be interpreted in this light.

2. that the indicators of physician's knowledge were related to each other. I expected that a physician who knew about one aspect of a patient's complaints would know about the other aspects as well.

3. that the indicators of physician's response were associated one to the other. While I was uncertain what to expect here, it seemed reasonable to suppose that a physician who responded to one aspect of the patient's problem was more likely to respond to the other aspects.

4. that the indicators of physician's knowledge were related to the indicators of physician's response. I wanted to test the assumption that knowledge by physicians was translated into action and therefore reflected the quality of care. In addition, I expected knowledge and response to the patient's discomfort to be correlated more strongly than knowledge and response to worries, disturbances of daily living and social problems. Medical education seems to provide the physician with an array of appropriate responses to discomfort but perhaps to a lesser extent with the skills and practice in responding to the other dimensions. Psychiatrists have noted that physicians felt uncomfortable when forced to withhold aid from a person suffering physical discomfort but not so uncomfortable in the face of an anxious patient from whom aid was also withheld.

5. that the number of complaints affected the scores of the indicators of holistic care. I expected the physicians to obtain larger

proportions of perfect scores for patients with few complaints and smaller proportions of perfect scores with more complaints.

6. that who initiated the visits affected the physician's scores on knowledge. At a meeting of the committee of experts, one participant felt that the physician's reason for arranging a follow-up visit ought to be assessed. They believed that many follow-up visits became a habit. The physician knew what he wanted to accomplish during the visit and he often failed to reevaluate the patient's needs simply because the routine was set. On the basis of these ideas, I expected lower scores on physician's knowledge for doctor-initiated visits and higher scores for patient-initiated visits.

7. that duration of care and completeness of family care were related to the scores of the indicators of holistic care. I expected that care of total families and care of long duration would show higher scores than care of partial families or of short duration. Family medicine has stressed the importance of continuity of care and of family care. To my knowledge no assessments of the effect of these attributes have been made, although several writers have mentioned such a need (Wolfe and Badgley, 1972; Last, 1965).

8. that age and education of the patient were associated with the scores on the indicators of holistic care. Bart (1968) and Korsch et al. (1968) have evidence that younger and better educated people possess a different "vocabulary of discomfort" from older and less well educated people. On the basis of their findings, I predicted that the younger and better educated patients the higher the physician's scores. However, my enthusiasum for the prediction was inhibited somewhat by a contradictory finding in an earlier study of mine (see Appendix II for the report).

9. that the five physicians showed different scores on the indicators of holistic care. Although the five physicians practiced together and were all part-time teachers of family medicine, I expected their individual interests and styles to be reflected in varying scores.

10. that the indicators of holistic care were related to the outcome measures of satisfaction and recovery. I expected better satisfaction and recovery for patients whose physicians had higher scores on the indicators. Family doctors have believed that holistic or comprehensive care made a difference to the patients. Several writers have called for studies of the relationship between the interpersonal aspects of patient-care and the outcomes (Barro, 1973; Donabedian, 1969; Gross, 1974).

5.2. Determinants of the Patient's Evaluation of General Progress

The purpose of this analysis was to discover which of four χ variables (χ_1 = recovery from discomfort, χ_2 = recovery from worry, χ_3 = recovery from disturbances of daily living, χ_4 = recovery from social problems) had the most influence on the y variable, the patient's evaluation of general progress. I sought an explanation of the meaning of patients' responses to the assessment of general progress and, as well, I wanted to know how effective each of the four was in predicting the general progress.

For this analysis I chose the linear discriminant function, defined by Snedecor and Cochrane (1973) as "the linear function of the χ that gives the smallest probability of misclassification" (page 415). The computer package SPSS was used (Nie et al., 1970). The χ variables were entered into the equation in a step-wise manner according to specified criteria. The output from the computer package which was of interest to me included:

1) the significance of the discriminant function - whether all χ variables taken together are significantly related to the y variable, the patient's evaluation of general progress.

2) the orthogonal discriminant function coefficients - the coefficient for each χ which describes the strength of its relationship with y when all the other χ's are held constant.

3) the accuracy of the discriminant function - the extent to which the function accurately predicts the true values of the y variable, general progress. The predictive accuracy is often expressed in terms of sensitivity and specificity of the equation.

Because the discriminant function analysis - SPSS - ignored cases with missing data when generating the discriminant function, only a subgroup of 108 patients who had legitimate values for χ_1 to χ_4 inclusive were analyzed. The subgroup of patients who were included in the analysis were those who had indicated they were bothered by discomfort, worry, disturbance of daily living and social problems. For all of the four dimensions these patients had some problem from which to recover. Those patients who were excluded were bothered by only one, two or three.

5.3. Comparison of the Three Measures of Satisfaction

There were three versions of the same questionnaire for measuring the patient's satisfaction: the first called personal, the second called intermediate and the third called general. To assess differences in response-patterns on the three types I used the median test. The discriminating power of the three types was estimated using the interquartile range. Their reliability wasreflected in the split-half reliability coefficient.

The median test has been described by Siegel (1956) as a procedure for assessing differences in central tendencies where scores were at least ordinal. The satisfaction questionnaire was developed by Hulka et al.(1970) and Zyzański et al.(1974) according to the Thurstone Method for equal appearing intervals (Thurstone reprinted in 1970). The scale was devised by carefully following the procedures laid down by Thurstone and in such cases further tests of scalabity are not recommended (Edwards, 1957; Scott, 1968). Therefore, I had confidence that the median test, which required at least ordinal data, was an appropriate one. The median test required that each of the three groups of patients be divided into two; those with scores above the median for all groups combined and those with scores on or below the median. The significance of the differences in the distributions was tested using the χ^2.

The discriminating power of the three questionnaires was assessed by the dispersion of scores. Any measure which could not discriminate very well would show scores grouped in a narrow range. For data which were known to be normally distributed the appropriate statistic would have been the variance. However I was not willing to assume normality because of the data from one of Hulka's studies (Hulka et al.1971). Therefore I used the interquartile range. The scores were ranked and the scores of the 25th percentile and the 75th percentile defined the limits of the range.

The reliabilities of the questionnaires were assessed by comparing scores of randomly selected halves of the questionnaire. To ensure that the whole range of scale values was represented in both halves, I ranked the scale values; then chose one from each pair with closest scale values. The correlation between the scores from the two halves was the Spearman rank correlation which was suitable for ordinal data. To this correlation I applied the Spearman-Brown correction in order to estimate the reliability of the full-length test (Guilford and Fruchter, 1973, page 415).

5.4. Relative Rates of Positive Outcomes

In order to assess the association between the indicators of physicians' response to patients' problems and patients' recovery, in addition to the χ^2 test of statistical significance, another measure was used. That measure was the relative odds ratio; the ratio of the rate of positive outcomes among those patients to whom the physicians responded and the rate among those to whom the physicians did not respond (MacMahon and Pugh, 1970). It was calculated from the following table:

Physician's Score on Response to Discomfort	Recovery	
	Better	Same or Worse
100 % response	a	b
0-99% response	c	d

Chapter Six

RESULTS

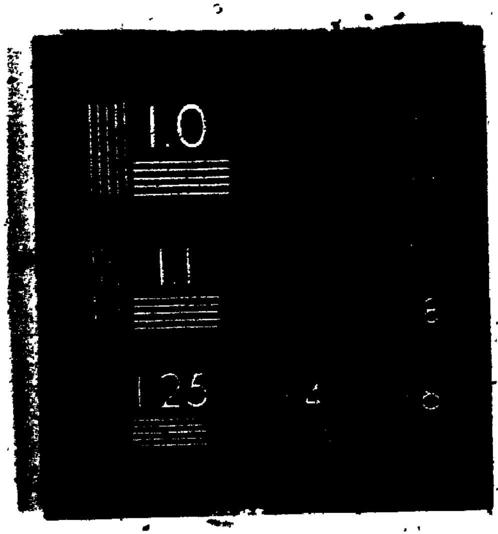
6.1. Background

Table 4 shows what happened to all 462 patients who were asked to cooperate in the study. Two hundred and ninety-nine patients were followed to the conclusion of the collection of data. An estimate of the response rate would be 299/462-44 or 72%. This is an underestimate because it assumes that all of the patients who refused or missed the initial interview were eligible and this was unlikely.

Of those patients eligible for follow-up (319), only 20 or 6.3% were lost. The reasons for loss were: 1) death after initial questionnaire, 2) changed to doctor in another town, 3) missed on advice from the doctor, 4) missed through error, 5) refused to cooperate with a follow-up interview, 6) refused permission to look at their medical record.

To get an impression of how accurately the sample of patients who were followed represented all chronic patients, I compared the 299 with those who refused or missed the initial interview. Three characteristics were assessed: 1) patient's age, 2) patient's sex, 3) the doctor. I found the patients of one doctor were overrepresented in the refusers and in the group of patients missed due to a reason given by the doctor or nurse. In addition, older patients were overrepresented in the group who were missed due to a reason. This is not surprising since senility was frequently a reason suggested by the nurse or doctor. There were no differences between the 299 in the study and those missed by accident. In conclusion, the patients who were followed and who provided the

2 OF/DE 3



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The formula for calculating the ratio which shall henceforth be called the relative rate of positive outcomes was ad/bc.

Chapter Six

RESULTS

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TABLE 4

Distribution of Patients Asked to Participate in the Study

	N	%
TOTAL NUMBER ASKED TO PARTICIPATE	462	100.0
Patients who refused the initial interview	45	9.8
Patients who missed the initial interview because of an administrative error	21	4.6
Patients who missed the initial interview because of a reason given by the doctor or nurse	33	7.1
Patients who were ineligible for follow-up	44	9.5
Patients who were lost to follow-up	20	4.3
Patients with complete information	299	64.7
Response Rate Among Eligible Patients	$\frac{299}{418}$ =	72.0

information upon which the analyses were based, were somewhat younger and less likely to have attended doctor #2 than were the patients who were not included in the analyses.

The demographic characteristics of the patients studied are shown in Table 5. Patients were more often middle-aged than younger or older, female than male, of limited education and most often born in Britain, Canada or the United States. In spite of the fact that my sampling procedure was not designed to attain a sample representative of people in rural Ontario, I was interested in the comparability of the patients and the population. I shall describe the comparison rather than present the figures in a table. I found that the 1971 rural population of Ontario over 25 years old was more often in the younger age group than middle age or older. The lower level of education in the patients of the study compared with the population was likely explained by the older age distribution. Unfortunately the Ontario figures did not include education for each age level so that age adjusted comparisons were not possible. In conclusion the middle aged and persons with limited education were overrepresented in the sample.

Table 6 shows some characteristics of patients at the time of the preliminary interview. The majority of these visits when the patient entered the study were initiated by the doctor. This suggests that adult patients of Tavistock who had chronic illnesses were being followed closely by their physicians. The largest proportion of patients had two complaints to present to the doctor. Approximately equal proportions had 0, 1, 2, 3+ social problems. The largest proportion of patients had one discomfort, worry, or disturbance of daily living. It would appear that the sampling procedure was successful in gathering

TABLE 5

Demographic Characteristics of the Patients

	N	%
Age:		
25-44	60	20.0
45-64	143	47.8
65+	96	32.1
TOTAL	299	100.0
Sex:		
Male	124	41.5
Female	175	58.5
TOTAL	299	100.0
Education:		
Grade 8 or lower	198	66.4
Grade 9-13	76	25.5
Further Education	24	8.1
TOTAL	298*	100.0
Country of Birth:		
Canada, Britain or USA	281	95.9
Other	12	4.1
TOTAL	293*	100.0

*Differences from 299 due to information unknown.

TABLE 6

Characteristics of the Patients at the Time of the Preliminary Interview

	N	%
Who initiated the visit?		
Patient	61	20.4
Doctor	238	79.6
TOTAL	299	100.0
Number of presenting complaints:		
One	92	30.8
Two	126	42.1
Three plus	81	27.1
TOTAL	299	100.0
Number of complaints with discomfort:		
Zero	31	10.4
One	146	48.8
Two	88	29.4
Three plus	34	11.4
TOTAL	299	100.0
Number of complaints with worry:		
Zero	104	34.8
One	126	42.1
Two	46	15.4
Three plus	23	7.7
TOTAL	299	100.0
Number of complaints with Disturbance in Daily Living:		
Zero	103	34.4
One	133	44.5
Two	48	16.1
Three plus	15	5.0
TOTAL	299	100.0
Number of social problems present:		
None	70	23.4
One	77	25.8
Two	63	21.1
Three plus	89	29.7
TOTAL	299	100.0

into the study patients who had multiple problems.

We see in Table 7 some of the characteristics of the patient's utilization of the physicians' services. The majority of households had all members attending the medical group and slightly less than 50% of the households had all members attending one doctor of the group. Most patients had attended the group for ten or more years. However, the largest proportion of patients had been with their current doctor only one year. This finding suggests some mobility of patients between the doctors of the group. The patients in the study tended to be frequent visitors to their doctor: only 10% had not visited recently, i.e. in the six month period preceding the initial interview. The amount of movement of patients from doctor to doctor is illustrated in the finding that 16% saw more than one physician during the three month follow-up period.

Table 8 shows the frequency of each of the 13 chronic conditions listed as criteria for entrance into the study. This table displays the frequency of each chronic condition whether the patient had that condition alone or in combination with other listed conditions. One hundred and twenty (120) patients had a single chronic condition on the list and the remaining 179 had combinations of two, three or four of the listed conditions.

The most frequent chronic condition was obesity, noted in close to half of the patients. More than three-quarters of the 124 patients with obesity had other listed chronic conditions as well.

The goal of 75 patients per physician was approximated for four physicians. These four entered 58, 68, 71, 78 patients each. The other physician, young and new to the group, had only 24 eligible patients.

TABLE 7

Characteristics of Patient's Utilization of the Medical Services

	N	%
Completeness of Family Care by the Physician		
Minority attended this physician	72	24.8
Majority attended this physician	83	28.6
All attended this physician	135	46.6
TOTAL	290*	100.0
Completeness of Family Care by the Medical Group		
Minority attended the group	4	1.4
Majority attended the group	28	9.6
All attended the group	261	89.1
TOTAL	293*	100.0
Duration of Patient Care with the Physician		
<1 year	2	0.7
1 year	98	33.4
2-4 years	69	23.5
5-9 years	68	23.2
10+ years	56	19.1
TOTAL	293*	100.0
Duration of Patient Care with the Medical Group		
1 year	29	9.9
2-4 years	19	6.5
5-9 years	46	15.7
10+ years	199	67.9
TOTAL	293*	100.0
Number of Recent Visits to the Physician**		
0	28	9.7
1	45	15.6
2	59	20.5
3	61	21.2
4	35	12.2
5+	60	20.8
TOTAL	288*	100.0
Number of Physicians seen during Follow-Up Period		
One Physician	250	83.6
More than one physician	49	16.4
TOTAL	299	100.0

* Differences from 299 due to information unknown.

** Recent visits refer to those during the six month period immediately preceding the visit when the patient entered the study.

TABLE 8

List of the Chronic Illnesses which Acted as Criteria for Entry of Patients into the Study and their Frequencies

	N	# patients with the chronic illness	% patients with the chronic illness*
Obesity	299	124	41.5%
Chronic Hypertension	299	83	27.8%
Chronic Bronchitis & Asthma	299	51	17.1%
Varicose veins	299	41	13.7%
Congestive heart failure	299	39	13.0%
Other heart ailment	299	39	13.0%
Diabetes	299	36	12.0%
Chronic Arthritis	299	35	11.7%
Chronic back pain	299	33	11.0%
Ischaemic heart disease	299	22	7.4%
Chronic ulcer	299	19	6.4%
Chronic skin condition	299	11	3.7%
Stroke	299	2	0.7%

*%'s do not add up to 100% because patients could have more than one chronic illness on the list.

In summary, the patients in this study were not representative of the population of rural Ontario, were younger than refusers and missed patients, had complex chronic problems and presenting complaints, were being followed closely by the physician and had visited the group for a long time although they tended to change doctors within the group.

6.2. The Eleven Indicators of Holistic Care

6.2.1. Distributions

The distributions of scores were not expected to be similar from one indicator to another. In particular I expected the scores on knowledge of and response to discomfort to be higher than the scores of knowledge of and response to social problems.

Table 9 shows the distributions of all eleven indicators. Under the column labelled TOTAL, the number of patients receiving a score for the indicators varies. Patients who had no discomfort, for example, could not be scored according to whether the physician had knowledge or responded. Only the 268 patients who said that they were bothered by discomfort were scored. Similarly for worries, disturbances in daily living and social problems. The percentage of perfect scores (i.e. a score of 100% was perfect) was highest in the indicator called physician's response to the patient's discomfort. The first five indicators dealing with various kinds of knowledge by the physician showed similar proportions of perfect scores, around 40-60% with perfect scores. Knowledge of the social problems showed low proportions of perfect scores relative to the other indicators of knowledge, around 23%. The indicators of the physician's response had perfect scores less than 30% of the time with the exception of the response to discomfort

TABLE 9

Distribution of Scores of the Eleven Indicators of Holistic Care.

INDICATORS	SCORES <50% N %	50-99% N %	100% N %	Total N %
1. Knowledge of Complaints	56 18.7	104 34.8	139 46.5	299 100.0
2. Awareness of Patient's Concept	72 24.1	103 34.4	124 41.5	299 100.0
3. Knowledge of Magnitude of Discomfort	74 27.6	62 23.1	132 49.3	268* 100.0
4. Knowledge of Magnitude of Worry	50 25.6	38 19.5	107 54.9	195** 100.0
5. Knowledge of Magnitude of Disturbance of Daily Living	46 23.5	28 14.3	122 62.2	196*** 100.0
6. Knowledge of Existence of Social Problems	116 50.7	60 26.2	53 23.1	229**** 100.0
7. Knowledge of Magnitude of Social Problems	118 51.5	59 25.8	52 22.7	229 100.0
8. Response to Discomfort	10 3.7	17 6.3	241 89.9	268 100.0
9. Response to Worry	116 59.5	14 7.2	65 33.3	195 100.0
10. Response to Disturbance of Daily Living	154 78.6	13 6.6	29 14.8	196 100.0
11. Response to Social Problems	153 66.8	27 11.8	49 21.4	229 100.0

*Out of 299 patients, 268 mentioned discomfort at the preliminary interview.

**Out of 299 patients, 195 mentioned worry at the preliminary interview.

***Out of 299 patients, 196 mentioned disturbance of daily living at the preliminary interview.

****Out of 299 patients, 229 mentioned social problems at the preliminary interview.

which showed the highest proportion of perfect scores. The lowest proportion of perfect scores was the physician's response to patient's disturbances of daily living.

6.2.2. Intercorrelations

Table 10 shows the intercorrelations of the indicators of physician's knowledge of the patients. They were high for knowledge of discomfort, worry and disturbance of daily living. However the correlations between knowledge of social problems and other kinds of knowledge were low. This finding, which was supported in an analysis done specifically for each doctor along with the distributions of scores in Table 9, underlines the unique nature of social problems in the context of family practice. Such problems may be viewed as different from other aspects of patients' problems by both the doctor and the patient. For the chronically ill patients of the five participating doctors, the message which was elicited from the patients in the preliminary interview with the researcher, did not get across to the doctor. Knowledge of the existence of social problems was highly correlated with knowledge of their magnitude. It would appear that whenever the physicians obtained some information regarding the social problems, it was accurate.

Table 11 shows the intercorrelations of the indicators of physician's response. For all the doctors taken together, the correlations were low. Doctor specific analyses not shown in the tables, demonstrated somewhat higher correlations than the analyses of all doctors pooled. The analyses revealed different patterns of responses for each doctor. Although the numbers were small and no firm conclusions could

TABLE 10

Correlations Among Indicators of Knowledge - All Physicians

	Knowledge of Magnitude of Worry	Knowledge of Magnitude of Disturbance of Daily Living	Knowledge of Existence of Social Problems	Knowledge of Magnitude of Social Problems
Knowledge of magnitude of discomfort	<.001* 0.48**	<.001 0.61	.06 0.20	.04 0.22
Knowledge of magnitude of worry	-	<.001 0.65	.16 0.19	.21 0.19
Knowledge of magnitude of disturbance of daily living	-	-	.88 0.09	.65 0.12
Knowledge of existence of social problems	-	-	-	<.001 0.81

*level of significance or p value
**contingency coefficient

TABLE 11

Correlation Among Indicators of Response

	Response to Worry	Response to Disturbance of Daily Living	Response to Social Problems
Response to discomfort	.62* 0.12**	.39 0.15	.28 0.16
Response to worry	-	.65 0.13	.91 0.08
Response to disturbance of daily living	-	-	.19 0.19

*level of significance or p value
**contingency coefficient

be drawn about the nature of the patterns, they varied considerably. For example: for doctor #1, response to worry was positively associated with response to social problems; for doctor #2, a negative relationship between response to discomfort and to social problems was evident; for doctor #3, responses to disturbances of daily living were correlated with responses to social problems; doctor #5 showed a positive association between response to discomfort and response to social problems. These variations suggest that the indicators of response have been sensitive enough to reveal different styles of practising family medicine.

We see in Table 12 the correlations between indicators of physician's knowledge of the patient's problems and his response to those problems. The correlations were all statistically significant. No one aspect of the patient's problems showed a correlation markedly greater than the others. I had expected that the relationship between knowledge and response would be stronger for discomfort than for the other aspects of patients' problems. There was no support for my hypothesis, indicating that the five physicians were concerned about relieving social problems as well as discomfort.

To summarize, the findings contribute to a picture of family doctors working on complex problems, having individual modes of management, showing rather different and less impressive patterns of knowledge of social problems than of other manifestations of the presenting complaints but consistently tending to translate the knowledge they did obtain into action.

6.2.3. Indicators and the Number of Complaints

We already know, from the description of the scoring procedure for

TABLE 12

Correlations between Indicators of Knowledge and Response

	Level of Statistical Significance	Contingency Coefficient
Knowledge of magnitude of discomfort and response to discomfort	<.001	0.32
Knowledge of magnitude of worry and response to worry	<.001	0.33
Knowledge of magnitude of disturbance and response to disturbance of daily living	~.01	0.25
Knowledge of magnitude of social problems and response to social problems	<.001	0.35

the indicators of holistic care, that the scores depended upon the number of complaints. Beyond this characteristic of the scoring procedure I expected the number of complaints presented by the patients to have an effect upon the scores of the indicators. I suspected that the larger the number of complaints the lower would be the scores. To evaluate this hypothesis, eleven crosstabulations were analyzed. The results are summarized in Table 13. It shows that in all eleven crosstabulations, statistically significant negative associations existed. The crosstabulations themselves revealed a striking result. Table 14 shows one of the crosstabulations as an illustration. The other crosstabulations concerning indicators of knowledge are similar. In Table 14 we see that for patients with one discomfort, the physicians were most often aware of it. For patients with two discomforts, the physicians were most often aware of one of the two (giving him a score of 50% known). For patients with three or more discomforts, the physicians were most often aware of one or none of the three. This finding suggests that either the physicians recorded and remembered only one complaint - perhaps the most pressing one - or, having elicited one complaint from the patient, the physician did not attempt to elicit any more than that one.

6.2.4. Indicators and the Characteristics of the Patients.

Having found that the number of complaints affected the distribution of scores, I had to consider the number of complaints as a potentially confounding variable. I examined the relationship between the number of complaints and each characteristic of the patients. I found only one - patients with lower education had a larger number of

TABLE 13

Correlations Between Number of Complaints and Indicators of Holistic Care

INDICATORS	Number of Complaints	Number of Discomforts	Number of Worries	Number of Disturbances	Number of Social Problems
Knowledge of complaints	<.001* -0.52**				
Awareness of patient's concept	<.001 -0.53				
Knowledge of magnitude of discomfort		<.001 -0.53			
Knowledge of magnitude of worry			<.001 -0.57		
Knowledge of magnitude of disturbance				<.001 -0.51	
Knowledge of existence of social problems					<.001 -0.48
Knowledge of magnitude of social problems					<.001 -0.49
Response to discomfort		<.001 -0.30			
Response to worry			<.001 -0.47		
Response to disturbance of daily living				<.001 -0.36	
Response to social problems					.002 -0.27

*level of significance or p value

**contingency coefficient

TABLE 14

Distribution of Scores on Knowledge of Magnitude of Discomfort Shown for Each Level of Number of Complaints

Number of Complaints with Discomfort	Knowledge of Discomfort			
	< 50% Known N %	50-99% Known N %	100% Known N %	Total N %
One	47 32.2	0 0.0	99 67.8	146 100.0
Two	11 12.5	48 54.5	29 33.0	88 100.0
Three Plus	16 47.1	14 41.2	4 11.8	34 100.0
TOTAL	74 27.6	62 23.1	132 49.3	268 100.0

disturbances of daily living -- which showed evidence of an association. For the other characteristics of patients, the number of complaints was distributed equally in each category and, therefore, stratification by number of complaints was not necessary. For education of the patients in relation to knowledge of and response to disturbances of daily living, the analyses were stratified by number of disturbances. However, no change in the trends were noticed for each stratum compared with the pooled data. Therefore, only the pooled correlations are presented.

Table 15 displays the correlations of the characteristics of the patients with the indicators of holistic care. The first characteristic shown is the patient's number of recent visits (i.e. within six months). I had expected frequent recent visits to increase the physician's knowledge. We see that this prediction was supported for three of the seven indicators of knowledge. Table 16 gives an example of the kind of trend found for one of the three indicators. On the whole the average scores increased as the number of recent visits increased. The positive associations between the number of recent visits to the physician and the indicators of the physician's knowledge of the patient provide some support for the validity of the indicators.

The next line in Table 15 shows that, as expected, patient and doctor initiated visits differed significantly with regard to scores on the indicators of physician's knowledge. No association was found with the indicators of physician's response. The nature of the relationship between who initiated the visit and the indicators of physician's knowledge is illustrated in Table 17. Physician's knowledge of patients' complaints was greater when the patient initiated his own visit. The difference was maintained for all levels of "number of

TABLE 15

Correlation of the Eleven Indicators With the Characteristics of the Patients

	Knowledge of Complaints	Awareness of Patients' Concept	Knowledge of Discomfort	Knowledge of Worries	Knowledge of Distur-bances	Knowledge of Existence of Social Problems	Knowledge of Magnitude of Social Problems	Response to Discom-fort	Response to Worries	Response to Distur-bances	Response to Social Problems
Number of Recent Visits	.11* 0.22**	.077 0.27	.91 0.13	.41 0.22	.89 0.15	.007 0.31	.007 0.31	.41 0.19	.57 0.20	.91 0.15	.33 0.22
Who Initiated the Visit	.001 0.23	.001 0.26	.003 0.20	.07 0.16	.01 0.20	.009 0.20	.03 0.17	.69 0.05	.97 0.02	.66 0.07	.26 0.11
Patients' Age	.35 0.12	.81 0.07	.95 0.05	.49 0.13	.95 0.06	.14 0.17	.15 0.16	.03 -0.19	.07 -0.21	.44 0.13	.13 0.17
Patients' Education	.81 0.07	.64 0.09	.25 0.14	.82 0.08	.24 0.16	.69 0.09	.51 0.12	.95 0.05	.13 0.18	.11 0.19	.21 0.15
Completeness of family care with the doctor	.76 0.08	.56 0.10	.79 0.08	.86 0.08	.79 0.09	.99 0.03	.96 0.05	.94 0.05	.04 0.21	.10 0.19	.36 0.13
Completeness of family care with the group	.36 0.12	.10 0.16	.36 0.12	.55 0.12	.89 0.07	.12 0.17	.11 0.17	.47 0.11	.71 0.10	.96 0.05	.007 -0.24
Duration of care with the doctor	.57 0.14	.88 0.11	.82 0.12	.44 0.19	.42 0.20	.38 0.19	.47 0.18	.55 0.16	.39 0.20	.91 0.13	.11 0.24
Duration of care with the group	.87 0.09	.71 0.08	.80 0.10	.35 0.18	.16 0.21	.94 0.08	.72 0.09	.16 0.18	.10 0.22	.47 0.16	.15 0.20

*level of significance or p value

**contingency coefficient

TABLE 16

Physician's Knowledge of Existence of Social Problems By Number of Recent Visits

Number of Recent Visits	Physician's Knowledge of Existence of Social Problems			
	<50% Known N %	50-99% Known N %	100% Known N %	Total N %
Zero	12 66.7	2 11.1	4 22.2	18 100.0
One	26 76.5	4 11.8	4 11.8	34 100.0
Two	28 59.6	9 19.1	10 21.3	47 100.0
Three	19 38.8	16 32.7	14 28.6	49 100.0
Four	6 33.3	11 45.8	5 20.8	24 100.0
Five +	18 38.3	16 3[illegible]0	13 27.7	47 100.0
TOTAL	111 50.7	58 26.5	50 22.8	219 100.0

$\chi^2 = 23.88$ on 10 d.f. $p < .008$

TABLE 17

Physician's Knowledge of Complaints by Who Initiated the Visit

	Physician Knowledge of Complaints			
Visit Initiated by:	< 50% Known N %	50-99% Known N %	100% Known N %	Total N %
Patient	4 6.6	15 24.6	42 68.9	61 100.0
Doctor	52 21.8	89 37.4	97 40.8	238 100.0
TOTAL	56 18.7	104 34.8	139 46.5	299 100.0

$\chi^2 = 16.60$ on 2 d.f. $p \leq .001$

recent visits. The finding suggests that physicians pay closer attention to patients who call for an appointment than to patients who he has called back for a follow-up visit. The physicians who made up the committee of experts felt that physicians on the whole too often lapsed into meaningless repetition in their follow-up visits. Their suspicion would seem to be supported by these findings.

Data on the patient's age and education are shown next in Table 15. None of the correlations between patient's education and the indicators were close to statistical significance. One of the indicators of physician's response showed a significant association with the patient's age. The older patients tended to receive lower scores on response to discomfort. This finding cannot be said to provide strong support for the prediction that older and less well-educated women would have difficulty communicating with the physicians, because the number of significant correlations was 1 in 22. At the 95% level of confidence one would expect 1 or 5% to be significant by chance alone. It is possible that the five physicians in this study were discerning enough to overcome any age and educational barriers to communication.

The next two rows on Table 15 deal with the level of completeness of family care with the doctor and with the centre. There were two significant associations out of 22 and they were in opposite directions. Because of the paucity of the significant associations and because one was positive and the other negative, I suggest that no support has been provided for the common assertion that treating whole families makes for better care.

Duration of the patient's care with the centre and each doctor is considered next on Table 15. No significant associations were found, lending no support for the hypothesis that continuity of care implies better care.

In summary, some support for the construct validity of several indicators of knowledge was found. The indicators were sensitive to variations in numbers of complaints and who initiated the visit. The predictions that age and education of the patients affect the scores were not upheld, although data supporting these predictions had been found in other studies. No support was indicated for predictions regarding continuity and completeness of family care - assumptions which have not, to my knowledge, been tested before.

6.2.5. Variations Among the Physicians

I predicted that the distribution of scores on the indicators would vary among the five physicians who participated in the study. Table 18 reveals that for six of the eleven indicators the distribution of scores differed significantly. The six indicators were physician's knowledge of complaints, awareness of patient's concept of the complaints, knowledge of magnitude of discomfort, knowledge of magnitude of worry, knowledge of magnitude of disturbance of daily living and response to social problems. The other five indicators showed some variation among the physicians but none was statistically significant.

As seen in Table 19, the distribution of an unweighted average score of the eleven indicators varied significantly among the five physicians.

Of all the variables related to the indicators of holistic care, three were distributed differently from doctor to doctor and therefore were confounding variables: number of complaints, number of recent

TABLE 18

Variations in Scores Among the Five Physicians

	Level of Statistical Significance	Contingency Coefficient
Knowledge of Complaints	<0.001[*]	.40
Awareness of Patient's Concept	<0.001[*]	.39
Knowledge of Magnitude of Discomfort	<0.05[*]	.25
Knowledge of Magnitude of Worry	<0.001[*]	.36
Knowledge of Magnitude of Disturbance of Daily Living	<0.05[*]	.29
Knowledge of Existence of Social Problems	0.24	.21
Knowledge of Magnitude of Social Problems	0.21	.21
Response to Discomfort	0.17	.20
Response to Worry	0.45	.20
Response to Disturbance of Daily Living	0.16	.24
Response to Social Problems	<0.001	.33

[*] The significant differences among physicians were maintained only for doctor-initiated visits and for 2+ recent visits when stratified analyses were done.

TABLE 19

Distribution of the Average Holistic Score for Each Physician

	Average Holistic Scores				
	0-49%	50-64%	65-79%	80-100%	Total
Physician	N %	N %	N %	N %	N %
1	2	10	6	6	24
	8.3	41.7	25.0	25.0	100.0
2	8	20	18	12	58
	13.8	34.5	31.0	20.7	100.0
3	33	20	9	6	68
	48.5	29.4	13.2	8.8	100.0
4	36	24	10	8	78
	46.2	30.8	12.8	10.3	100.0
5	20	21	21	9	81
	28.2	29.6	29.6	12.7	100.0
TOTAL	99	95	64	41	299
	33.1	31.7	21.4	13.7	100.0

$\chi^2 = 37.41$ on 12 d. f. p = .0001

visits and who initiated the visit. Any influence the three variables had on the relationship shown in Table 18 was removed by stratifying the crosstabulations by each of the three. Table 20 shows that the differences among physicians were maintained for all levels of number of complaints but they were greatest for patients with one complaint. Table 21 shows an interaction effect of "doctor" and "who initiated the visit" upon the scores of knowledge of the complaints. Only for doctor-initiated visits were the scores different from doctor to doctor. Table 22 shows that the differences among doctors were greatest for more frequent number of recent visits.

These findings indicate that the indicators of physician's knowledge were able to detect differences among physicians.

6.3. The Measures of Health Status

6.3.1. Distributions

Several assessments of health status were used in this study. The most general was called the patient's evaluation of general progress. The patient answered the question "Do you feel better, the same or worse than you did three months ago?". The distribution of the responses is shown in Table 23.

Another measure of recovery was the degree of change in the status of the patient's discomfort, worry, disturbance in daily living and social problems. The patient's level of discomfort as described to the interviewer at the preliminary interview was compared with the level of discomfort described in the follow-up interview. The net changes over all discomforts were averaged in the variable called patient's evaluation of recovery from discomfort (See Appendix XV for details).

TABLE 20

Distribution of Scores of Knowledge of the Complaints for Each Doctor Stratified by Number of Complaints

	Scores					
	0-99%		100%		Total	
	N	%	N	%	N	%
Number of Complaints = one						
Doctor 1	0	0.0	13	100.0	13	100.0
Doctor 2	1	4.5	21	95.5	22	100.0
Doctor 3	7	50.0	7	50.0	14	100.0
Doctor 4	8	36.4	14	63.6	22	100.0
Doctor 5	2	9.5	19	90.5	21	100.0
TOTAL	18	19.6	74	80.4	92	100.0
Number of Complaints = two						
Doctor 1	3	37.5	5	62.5	8	100.0
Doctor 2	7	31.8	15	68.2	22	100.0
Doctor 3	26	76.5	8	23.5	34	100.0
Doctor 4	23	79.3	6	20.7	29	100.0
Doctor 5	13	39.4	20	60.6	33	100.0
TOTAL	72	57.1	54	42.9	126	100.0
Number of Complaints = three +						
Doctor 1	2	66.7	1	33.3	3	100.0
Doctor 2	10	71.4	4	28.6	14	100.0
Doctor 3	18	90.0	2	10.0	20	100.0
Doctor 4	25	92.6	2	7.4	27	100.0
Doctor 5	15	88.2	2	11.8	17	100.0
TOTAL	70	86.4	11	13.6	81	100.0

TABLE 21

Distribution of Scores of Knowledge of Complaints Shown For Each Doctor Stratified by Who Initiated the Visit

	Scores on Knowledge					
Patient Initiated the Visit	0-99%		100%		Total	
	N	%	N	%	N	%
Doctor 1	3	30.0	7	70.0	10	100.0
Doctor 2	1	12.5	7	87.5	8	100.0
Doctor 3	6	40.0	9	60.0	15	100.0
Doctor 4	5	38.5	8	61.5	13	100.0
Doctor 5	4	26.7	11	73.3	15	100.0
TOTAL	19	31.1	42	68.9	61	100.0
Doctor Initiated the Visit						
Doctor 1	2	14.3	12	85.7	14	100.0
Doctor 2	17	34.0	33	66.0	50	100.0
Doctor 3	45	84.9	8	15.1	53	100.0
Doctor 4	51	78.5	14	21.5	65	100.0
Doctor 5	26	46.4	30	53.6	56	100.0
TOTAL	141	59.2	97	40.8	238	100.0

TABLE 22

Distribution of Scores on Knowledge of Complaints Shown for Each Doctor Stratified by Number of Recent Visits

	Scores on Knowledge					
Number of Recent Visits	0-99%		100%		Total	
≤1	N	%	N	%	N	%
Doctor 1	2	13.3	13	86.7	15	100.0
Doctor 2	3	42.9	4	57.1	7	100.0
Doctor 3	11	55.0	9	45.0	20	100.0
Doctor 4	4	50.0	4	50.0	8	100.0
Doctor 5	11	47.8	12	52.2	23	100.0
TOTAL	31	42.5	42	57.5	73	100.0
Number of Recent Visits 2-3						
Doctor 1	2	25.0	6	75.0	8	100.0
Doctor 2	12	42.9	16	57.1	28	100.0
Doctor 3	21	75.0	7	25.0	28	100.0
Doctor 4	23	69.7	10	30.3	33	100.0
Doctor 5	9	39.1	14	60.9	23	100.0
TOTAL	67	55.8	53	44.2	120	100.0
Number of Recent Visits 4+						
Doctor 1	1	100.0	0	0.0	1	100.0
Doctor 2	3	13.6	19	86.4	22	100.0
Doctor 3	16	100.0	0	0.0	16	100.0
Doctor 4	28	80.0	7	20.0	35	100.0
Doctor 5	8	38.1	13	61.9	21	100.0
TOTAL	56	58.9	39	41.1	95	100.0

TABLE 23

Distribution of the Patients' Evaluation of General Progress

General Recovery	N	%
Better	168	52.2
Same	110	36.8
Worse	21	7.0
TOTAL	299	100.0

The distributions of the specific recoveries from discomforts, worries, disturbances of daily living and social problems are shown in Table 24. The net changes were grouped into four categories. These measures of specific progress were calculated only for the patients who had a discomfort, worry, disturbance of daily living or social problem at the preliminary interview. Therefore the total numbers in each distribution in Table 24 vary. Over the four aspects of the patients problems, the range of percentages of patients who felt better was 65 to 78 (See the Table 24).

Another method was also used for coding the change in answers to questions regarding the four aspects of the problems. If, for example, all discomforts improved over the three month period then the patient was placed in a category called "completely improved" (See Appendix XVI for details). The percents of patients who were completely improved are displayed in Table 25. We see that complete improvement ranged from 31% for social problems to 68% for worries.

Health status was also assessed using measures of level of activity. There were 54 patients for whom this information was not available. For the remaining patients we see in Table 26 the distributions of changes between preliminary and the follow-up interviews in the patient's being bedridden, being inactive and feeling unhealthy.

6.3.2. Determinants of the Patient's Evaluation of General Progress

The patient's evaluation as to whether he felt better, the same or worse was a non-specific assessment. Whether or not this general assessment was based upon changes in the four specific areas was therefore examined. Table 27 shows that for three of the four aspects -

TABLE 24

Distribution of the Patients' Evaluation of Specific Progress

	N	%	
Recovery from Discomfort			
Worse	36	13.4	
Same	58	21.6	
Little better	119	44.4	64.9
A lot better	55	20.5	
TOTAL	268	100.0	
Recovery from Worry			
Worse	17	8.7	
Same	26	13.3	
Little better	85	43.6	78.0
A lot better	67	34.4	
TOTAL	195	100.0	
Recovery from Disturbances in Daily Living			
Worse	13	6.6	
Same	43	21.9	
Little better	74	37.8	71.5
A lot better	66	33.7	
TOTAL	196	100.0	
Recovery from Social Problems			
Worse	33	14.4	
Same	45	19.7	
Little better	104	45.4	65.9
A lot better	47	20.5	
TOTAL	229	100.0	

TABLE 25

Percentage Patients with Complete Improvement

	N	% Completely Improved
Discomforts	268	44.0
Worries	195	68.7
Disturbances in Daily Living	196	61.2
Social Problems	229	31.0

TABLE 26

Distributions of Changes in Level of Activity During the Period of Observation

	N	%
Bedridden - Comparison of Preliminary and Follow-up		
Yes → No	26	47.3
Yes → Yes	7	12.7
No → Yes	22	40.0
TOTAL	55	100.0
Inactive - Comparison		
Yes → No	41	49.4
Yes → Yes	15	18.1
No → Yes	27	32.5
TOTAL	83	100.0
Unhealthy - Comparison		
Yes → No	55	31.1
Yes → Yes	74	41.8
No → Yes	48	27.1
TOTAL	177	100.0

TABLE 27

Distributions of Patients who Felt "Better" on the Assessment of General Progress for Each Level of Specific Progress

Assessment of Specific Progress	Total Number	Assessment of General Progress Patients who felt better N	%
Recovery from Discomfort*			
Worse	36	11	30.6
Same	58	24	41.4
Little better	119	74	62.2
A lot better	55	39	70.9
TOTAL	268	148	55.2
Recovery from Worry*			
Worse	17	7	41.2
Same	26	10	38.5
Little better	85	49	57.6
A lot better	67	47	70.1
TOTAL	195	113	59.9
Recovery from Disturbances*			
Worse	13	3	23.1
Same	43	19	44.2
Little better	74	42	56.8
A lot better	66	50	75.8
TOTAL	196	114	58.2
Recovery from Social Problems			
Worse	33	19	57.6
Same	45	26	57.8
Little better	104	55	52.9
A lot better	47	30	63.8
TOTAL	229	130	56.8

*Each of these variables is associated with the general recovery at the 0.05 level of significance. Tests used χ^2 method.

discomfort, worry and disturbance of daily living - the proportion of patients indicating that they felt "better" increased as the specific assessment went from worse to a lot better.

In order to assess the independent contribution of each of the four aspects of patients' problems to the patient's concept of "feeling better", a discriminant function analysis was undertaken. This analysis was restricted to the 108 patients who had discomforts, worries, disturbances of daily living and social problems. Table 28 shows the order in which the variables were entered into the equation and their discriminant function coefficients. These coefficients represent the amount of change in Y (patient's evaluation of general progress) on the average for a unit of change in each of the four X variables while all others X's remain constant: in other words the coefficients represent the independent contribution of each X variable to the evaluation of general progress. Table 28 shows that recovery from discomforts and from disturbances of daily living were most important to the patient in his general assessment, while recovery from worries and social problems were less important.

The discriminant function was almost 80% accurate in identifying those patients who "felt better". However, it was less accurate in identifying those who did not feel better. Even so, both measures of accuracy were higher than one would expect in the absence of any predictive power of the equation.

This analysis indicates that the four aspects of patients' problems predicted with some accuracy the patients' evaluation of general progress. There were indications that of the four, the important ones - the ones which affected the patients' responses to the general

TABLE 28

Results of Discriminant Function Analysis

Variable	Orthogonal Discriminant Function Coefficient
1st - Recovery from Discomfort	0.564
2nd - Recovery from Disturbance of Daily Living	0.516
3rd - Recovery from Worry	0.340
4th - Recovery from Social Problems	0.199

The Predictive Power of the Discriminant Function

Assessment of General Progress	Predicted from the Equation		
	Better	Other	Total
Better	49	14	63
Other	21	24	45
TOTAL	70	38	108

Sensitivity or Accuracy in identifying those "feeling better" = 49/63 = 77.78%. In the absence of predictive power the percentage would be 58.3.

Specificity or Accuracy in identifying those not"feeling better" = 24/45 = 53.33%. In the absence of predictive power the percentage would be 41.6.

assessment - were recovery from discomfort and recovery from disturbances in daily living. I consider discomfort and disturbances to be physical manifestations of problems, while I think worry and social problems can best be described as psychosocial manifestations. If we accept this distinction, we can see that the physical aspects were the ones of most importance to the patient's concept of "feeling better." Two interpretations are possible: 1) patients did not interpret "feeling better" in a holistic way, as I have defined the term, 2) the setting of the research and the wording of the questionnaire led the patient to base his evaluation of general progress on the medical aspects of the problems.

6.4. Measures of Satisfaction

6.4.1. Distributions

Table 29 shows the distributions of the two measures of satisfaction: (1) the satisfaction with personal qualities of the physician, a measure whose high scores indicated satisfaction and whose results showed a positively skewed distribution, (2) the degree to which the doctor helped the patient. The 277 patients who said they got "better" or felt "the same" were asked to what degree they felt the doctor had helped them. About one-third of the patients felt the doctor had helped at each level: strongly helped, mildly helped, not at all.

Figure one shows the distribution of scores on satisfaction with the personal qualities of the physician compared with the scores from the study of households in Raleigh N.C. by Hulka et al.(1971). The distributions were both positively skewed. Caution must be used when comparing these two studies for four reasons:

TABLE 29

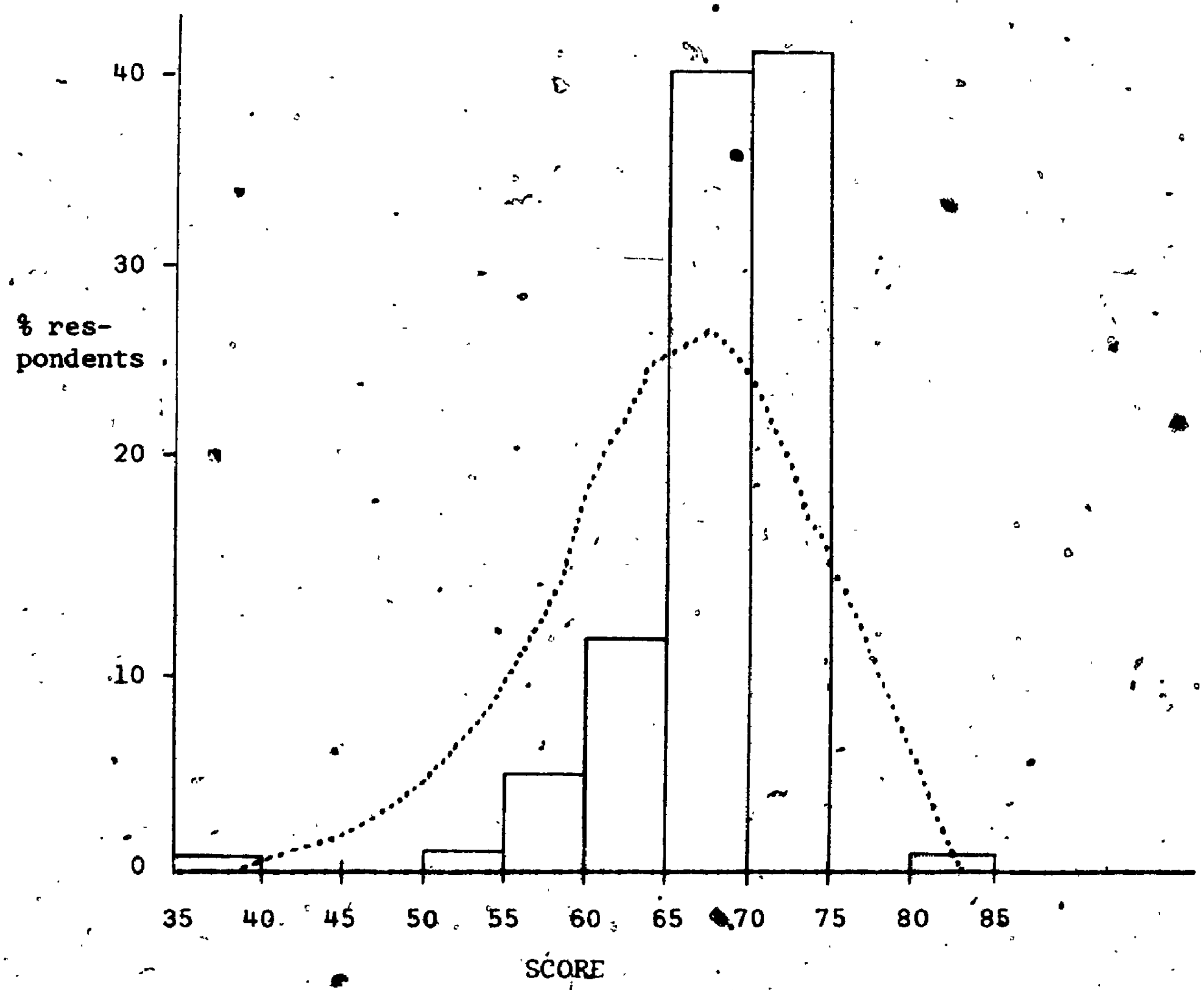
Distributions of the Measures of Satisfaction

Scale of Satisfaction with Personal Qualities	N	%
30-39	1	0.3
40-44	0	0.0
45-49	0	0.0
50-54	2	0.7
55-59	13	4.3
60-64	36	12.0
65-69	121	40.5
70-74	125	41.8
75-79	0	0.0
80-90	1	0.3
TOTAL	299	100.0
Patient's perception of degree to which the doctor helped		
Strong	77	27.8
Mild	107	38.6
Not at all	93	33.6
TOTAL	277*	100.0

*Only patients who felt "better" or the "same" were analyzed.

FIGURE ONE

Histogram of Satisfaction Scores for all Doctors Together Compared with Scores From a Study of the Community of Raleigh, N.C.



Bars = scores from Tavistock study

.... = scores from study in Raleigh, N.C. by Hulka et al.(1971).

1) My study used three types of questionnaires, Hulka only one type.

2) Hulka's questionnaire then contained six items, mine used twelve.

3) Hulka's was a household sample, mine used patients.

4) Hulka's was used as a self-administered questionnaire, mine was incorporated into an interview.

6.4.2. Satisfaction and Other Measures of Outcome

Tables 30 and 31 show the relationships of the three types of questionnaires with several outcomes measures. In Table 30, we see a slight tendency for patients who strongly felt the doctor had helped to have higher percentages of high scores on all three questionnaires than patients who replied "mild" or "not at all". However, the relationships were not statistically significant. There were no significant associations between any of the three questionnaires and general recovery (Table 30) or any measure of specific recovery (Table 31).

6.4.3. Differences in Scores for the Three Types of Questionnaires Regarding Satisfaction

Although the three types of questionnaires measuring patients' satisfaction have already been described, I will briefly review them again. The first type, the personal questionnaire, had a preamble asking patients to think of their own physician while each item in the questionnaire referred to their own physician as well. The intermediate questionnaire had a preamble asking patients to think of their own physician but each item referred to doctors in general. The general questionnaire asked patients to think of doctors in general when responding to the items which also asked about doctors in general.

TABLE 30

Relationship Between Each of the Three Types of Satisfaction Questionnaires and some Other Measures of Outcome

Percentages shown are the ones with high scores on the Satisfaction Questionnaires

Type of Satisfaction Questionnaire	Patient's Perception of the Degree to Which the Doctor Helped					
	Strong		Mild		Not at all	
	N	%	N	%	N	%
Personal	28	60.7	39	59.0	30	53.3
Intermediate	26	50.0	36	47.2	31	45.2
General	23	39.1	32	21.9	32	25.0

	Assessment of General Progress			
	Better		Same or Worse	
	N	%	N	%
Personal	61	63.9	39	46.2
Intermediate	56	48.2	46	43.5
General	51	25.5	46	32.6

TABLE 31

Relationship Between Each of the Three Types of Satisfaction Questionnaires and the Assessment of Specific Recovery

Percentages shown are the ones with high scores on the Satisfaction Questionnaires

Type of Satisfaction Questionnaire	Recovery from Discomforts			
	Better		Same or Worse	
	N	%	N	%
Personal	34	55.8	59	57.6
Intermediate	32	56.1	58	44.8
General	28	21.4	57	36.8
	Recovery from Worries			
	Better		Same or Worse	
	N	%	N	%
Personal	19	47.4	49	59.2
Intermediate	13	61.5	53	45.3
General	11	9.1	50	34.0
	Recovery from Disturbances in Daily Living			
	Better		Same or Worse	
	N	%	N	%
Personal	17	70.6	48	50.0
Intermediate	21	81.0	48	43.8
General	18	27.8	44	31.8
	Recovery from Social Problems			
	Better		Same or Worse	
	N	%	N	%
Personal	27	55.6	55	54.5
Intermediate	23	39.1	54	50.0
General	28	25.0	42	26.2

On the basis of the literature, I predicted that in the event of differences, the trend would be high scores on the personal questionnaire and low scores on the general questionnaire with the intermediate questionnaire falling in between. We see in Table 32 that the prediction was supported, as the null hypothesis was rejected at a 99% level of confidence using the median test.

6.4.4. Comparability of the Three Groups of Patients Receiving the Three Types of Satisfaction Questionnaires

As previously stated, the 299 patients were assigned to one of the three types of questionnaires using random allocation stratified by doctor. The purpose of the random allocation was to ensure that the three groups were comparable on variables which might have affected satisfaction. However, as a further precaution the three groups were compared according to eighteen variables and the groups were found to be comparable. See Table 33 for several variables chosen as examples.

6.4.5. Discriminating Power of the Three Types of Satisfaction Questionnaires

The interquartile range was taken as an indicator of the discriminating power of the three questionnaires. Table 34 shows that the interquartile range was largest for the general questionnaire (8.6), smaller for the intermediate (4.6) and smallest for the personal questionnaire (3.2). The upper limit of the range was similar for all three types but the lower limit was lowest for the general questionnaire.

TABLE 32

Differences Among the Three Types of Questionnaires Regarding Satisfaction with Personal Qualities

Three types of Questionnaires	Satisfaction Scores					
	Low		High		Total	
	N	%	N	%	N	%
Personal	43	43.0	57	57.0	100	100.0
Intermediate	55	53.9	47	46.1	102	100.0
General	69	71.1	28	28.9	97	100.0
TOTAL	167	55.9	132	44.1	299	100.0

Median test, $\chi^2 = 16.04$ on 2 d.f. $p < .001$

TABLE 33

Comparability of the Three Groups of Patients: Age, Sex, Education and Initiation of the Visit for Groups with the Three Types of Satisfaction Questionnaires

Type of Satisfaction Questionnaire	Age 25-44 %	45-54 %	55-64 %	65-74 %	75+ %	Total %
Personal	24.0	20.0	21.0	22.0	13.0	100.0
Intermediate	16.7	17.6	30.4	21.6	13.7	100.0
General	19.5	23.7	30.9	13.4	12.4	99.9

Sex

	Male %	Female %	Total %
Personal	41.0	59.0	100.0
Intermediate	47.1	52.9	100.0
General	36.1	63.9	100.0

Education

	Grade 8 %	Grade 9-13 %	Further Ed. %	Total %
Personal	67.0	27.0	6.0	100.0
Intermediate	61.8	29.4	8.8	100.0
General	70.8	19.8	9.4	100.0

Initiation of the Visit

	Patient Initiated %	Doctor Initiated %	Total %
Personal	24.0	76.0	100.0
Intermediate	16.7	83.3	100.0
General	20.6	79.4	100.0

TABLE 34

Discriminating Power and Reliability of the Three Types of Satisfaction Questionnaires

	Discriminating Power Dispersion	Reliability Split - Half
Type of Questionnaire	Interquartile Range	Spearman-Brown Coefficient
Personal	3.2	0.08
Intermediate	4.6	0.23
General	8.6	0.54

6.4.6. Reliability of the Three Types of Satisfaction Questionnaires

The twelve items contained in the questionnaires were divided at random into two groups after setting up pairs of items with similar scale values. The correlation between scores for each of the two subsets of six items was taken as an indication of the consistency or reliability of the questionnaire. The reliability of the intermediate version of the questionnaire had been assessed by Zyzanski et al.(1974) and found to be adequate. The split-half reliability coefficient was found to be 0.74 in their study with 426 patients. The reason for repeating the split-half reliability estimate was to see whether the three types of questionnaires showed markedly different reliabilities. The results in Table 34 show that for all three questionnaires the reliability coefficients were low, although highest for the general questionnaire where the coefficient was 0.54.

I investigated another aspect of reliability, the degree of influence of extraneous factors on the three types of questionnaires. As seen in Table 35, the influence of the locale of the follow-up interview and patient's education was not marked for any of the three questionnaires.

6.4.7. Summary

The scores on the satisfaction questionnaires had a similar distribution to Hulka's. They related weakly with the patient's opinion of whether the doctor helped. They differed significantly among the three types of questionnaires. Of the three types, the general questionnaire showed the largest interquartile range and the highest reliability coefficient. None of the three was affected by extraneous

TABLE 35

Influence of Extraneous Factors on the Three Types of Satisfaction Questionnaires

Percentages shown are the percentages with high scores on the Satisfaction Questionnaires

Types of Questionnaire	Locale of Follow-Up Interview: Home or Hospital N	%	Office N	%
Personal	75	57.3	25	56.0
Intermediate	70	41.4	32	56.2
General	75	30.7	22	22.7

	Education of the Patient: ≤ Grade 8 N	%	Grade 9 plus N	%
Personal	67	53.7	33	63.6
Intermediate	63	47.6	39	43.6
General	68	27.9	28	32.1

variables.

One explanation for the differences among the three in terms of scores, ranges and reliabilities could be that the patients were more likely to have an all-or-nothing response pattern on the general questionnaire, while on the personal questionnaire the patients responded on the basis of the content of each item.

6.5 Indicators of Holistic Care in Relation to Outcomes

The results of the correlations between the indicators and the measures of satisfaction are shown in Table 36. No significant associations were found between any indicator and either the patient's satisfaction with the personal qualities of the physician or his opinion of the level of the doctor's help.

In Table 37 we see the associations between the indicators and the measures of recovery. The correlations which were statistically significant are surrounded by boxes. However, when the effect of confounding variables was removed, all these associations were affected.

1. For the relationship between physicians' knowledge of the magnitude of social problems and patients' evaluation of general progress, the confounding variable was the number of recent visits. When the effect of this variable was removed through a stratified analysis, the negative relationship between knowledge and general progress was lost.
2. For the relationships between the indicators of physicians' knowledge and the measure of complete improvement, the confounding variable was number of complaints. When its effect was removed, the negative associations between the indicators of knowledge and the measure of complete improvement were lost.

TABLE 36

Indicators of Holistic Care in Relation to Patient's Satisfaction

	Satisfaction	Opinion of Level of Doctor's Help
Knowledge of the Complaints	.19* 0.10**	.97 0.04
Awareness of the Patients' Concept	.26 0.09	.28 0.13
Knowledge of Discomfort	.53 0.06	.75 0.09
Knowledge of Worries	.75 0.05	.43 0.14
Knowledge of Disturbances of Daily Living	.76 0.05	.53 0.13
Knowledge of Existence of Social Problems	.32 0.10	.29 0.15
Knowledge of Magnitude of Social Problems	.46 0.08	.38 0.14
Response to Discomfort	.21 0.11	.09 0.18
Response to Worries	.08 -0.16	.55 0.13
Response to Disturbance of Daily Living	.46 0.09	.74 0.10
Response to Social Problems	.81 0.04	.36 0.14

* Level of significance or p value

** Contingency coefficient

TABLE 37

Indicators of Holistic Care in Relation to Measures of Recovery

	Patients' Evaluation of General Progress	Measure of Complete Improvement	Patients' Evaluation of Specific Progress	Level of Activity
Knowledge of the Complaints	.55[a] 0.06[b]	.033** -0.20	.05*** 0.21	.20 0.14
Awareness of the Patients' Concept	.23 0.10	.003** -0.20	.01*** 0.24	.07 0.17
Knowledge of Discomfort	.87 0.03	.004** -0.20	.02*** 0.23	.10 0.17
Knowledge of Worries	.20 0.13	.55 0.08	.06 0.24	.43 0.12
Knowledge of Disturbances of Daily Living	.40 0.09	.37 0.10	.73 0.14	.96 0.03
Knowledge of Existence of Social Problems	.08 -0.05	.17 0.12	.15 0.20	.04**** -0.21
Knowledge of Magnitude of Social Problems	.04* -0.16	.24 0.11	.13 0.20	.05**** -0.20
Response to Discomfort	.73 0.05	.90 0.03	.82 0.10	.19 0.15
Response to Worries	.86 0.04	.10 0.15	.89 0.11	.61 0.09
Response to Disturbances of Daily Living	.22 0.12	.85 0.04	.44 0.17	.57 0.09
Response to Social Problems	.99 0.01	.52 0.07	.68 0.13	.37 0.12

*This association was lost when analysis stratified by number of recent visits.

**These negative associations were lost when analyses stratified by number of complaints.

***The significant associations were restricted to that group with patient-initiated visits.

****These associations were lost when analyses stratified by number of social problems.

a ~~Level of significance or p value.~~

b Contingency Coefficient

3. For the relationships between the indicators of physicians' knowledge and the patients' evaluation of specific progress, the confounding variable was who initiated the visit. When the analyses were stratified by who initiated the visit, the significant positive associations between physicians' knowledge and patients' specific progress were evident only for the group whose visits were patient-initiated.

4. For the relationship between physician's knowledge of social problems and the patients' level of activity, the confounding variable was the number of social problems. When the effect of this variable was removed through a stratified analysis, the negative relationship between knowledge and level of activity was lost.

The sampling procedure provided a group of patients who were heterogeneous with respect to the nature and duration of their complaints. Therefore, in an effort to ascertain whether true relationships between the indicators and the outcomes were obscured by such heterogeneity, I undertook two further analyses.

(1) An analysis specific for kind of presenting complaint was carried out.. However, these groups were still not completely homogeneous because, while the patients had one presenting complaint in common, they sometimes differed in the nature of their other complaints. In any case, the numbers were too small to allow further subgroupings of patients. Twelve groups of patients with one complaint in common had sufficient numbers ($n>30$) to allow specific analysis. The results of the relationships between the indicators of physician's response and the patient's evaluation of general progress are shown in Table 38. Results showing ~~the~~ patient's evaluation of specific progress are presented in Table 39. The strength of the associations is revealed in the

TABLE 38

Relative Rates of Positive Outcomes: Physician's Response and the Assessment of General Progress Specific for Nature of Presenting Complaint

Presenting Complaint	Response to Discomfort	Response to Worry	Response to Disturbance in Daily Living	Response to Social Problems
Allergic, Metabolic	-	0.83	0.61	0.75
Obesity	-	3.50	0.32	3.00
Mental (Nerves)	2.73	3.67	-	0.98
Sense Organs	1.50	0.58	0.38	0.76
Heart	1.32	2.33	4.89*	0.66
Hypertension	1.73	2.57	2.22	1.43
Acute Respiratory	3.25	0.58	0.26	0.39
Digestive System	8.40*	0.47	-	1.29
G-U System	1.70	0.72	2.18	2.00
Arthritis	1.32	1.67	0.42	0.50
Rheumatic Pains	0.58	0.40	1.00	3.11
Symptoms, Ill-defined	-	0.67	0.54	2.75

*$p < 0.05$

TABLE 39

Relative Rates of Positive Outcomes: Physician's Response and the Assessment of Specific Progress Shown for Nature of Presenting Complaint

Presenting Complaint	Response to Discomfort	Response to Worry	Response to Disturbance in Daily Living	Response to Social Problems
Allergic, Metabolic	-	2.22	0.27	-
Obesity	2.85	1.59	1.00	1.60
Mental (Nerves)	2.33	-	6.00	0.92
Sense Organs	0.22	-	2.00	0.55
Heart	0.98	0.70	1.38	2.22
Hypertension	-	-	0,71	1.27
Acute Respiratory	4.67	-	0.80	0.62
Digestive System	2.80	0.67	-	0.54
G-U System	0.42	3.33	0.42	0.20
Arthritis	1.17	1.67	0.79	1.14
Rheumatic Pains	2.67	-	0.57	3.11
Symptoms, Ill-defined	-	1.35	1.30	1.50

relative odds ratio - the ratio of the rate of positive outcomes among those patients to whom physicians responded and the rate among those to whom the physicians did not respond. Overall, the ratios were low. Fewer than one-half were greater than 2.

(2) A comparison was made between the new complaints of patients who had initiated their own visit and the long-term complaints presented at follow-up visits. I hypothesized that of those whose physicians had low response scores, higher percents of the patients would feel "better" than "worse" for the long-term complaints compared to the new complaints. I expected that previous responses by the physicians might affect recovery of these long-term complaints but, of course, no previous responses by physicians were possible for the new complaints. The results on Table 40 show very small differences in the percents and often in the direction opposite to the one expected.

Therefore, on the basis of these two checks on the effects of heterogeneity of the patients in the study upon the relationships between the physicians' response and outcomes, I found no evidence indicating obscured associations.

TABLE 40

Comparison of Frequencies of Patients who Felt "Better" and who Had Doctor's Response for New and Old Complaints Controlled for Number of Complaints

Percentages shown are of patients who felt "better"
and who had no known doctor's response.

	Number of Complaints	New		Old	
		N	%	N	%
Assessment of Specific Progress					
Response to Discomfort:	1	1	100.0	9	44.4
" " "	2+	4	75.0	13	69.2
Response to Worry:	1	16	81.3	52	69.2
" " "	2+	0	-	46	80.4
Response to Disturbances of Daily Living:	1	23	65.2	86	66.3
" " " " " "	2+	0	-	47	80.9
Response to Social Problems:	1	16	43.8	39	53.8
" " " "	2+	23	78.3	101	72.3
Assessment of General Progress					
Response to Discomfort:	1	1	0.0	9	55.6
" " "	2+	4	50.0	13	46.2
Response to Worry:	1	16	75.0	52	53.8
" " "	2+	0	-	46	54.3
Response to Disturbances of Daily Living:	1	23	60.9	86	53.5
" " " " "	2+	0	-	47	53.2
Response to Social Problems:	1	16	81.3	39	43.6
" " " "	2+	23	65.2	101	56.4
Level of Activity					
Response to Discomfort:	1	0	-	2	0.0
" " "	2+	4	75.0	3	66.7
Response to Worry:	1	7	71.4	28	46.4
" " "	2+	0	-	31	41.9
Response to Disturbances of Daily Living:	1	9	55.6	50	54.0
" " " " " "	2+	0	-	26	34.6
Response to Social Problems:	1	7	42.9	17	52.9
" " " "	2+	18	55.6	64	48.4

Chapter Seven

DISCUSSION AND RECOMMENDATIONS

7.1. Progress and Outcome Measures

The unique feature of this study - the aspect which held most promise for an original contribution to the field of research in health care - was its consideration of two facets of the process of care. I examined the relationship between physician's knowledge of the patient's problems and his response and investigated both of their associations with patient-outcomes. Although knowledge and management have previously been studied separately as indicators of the process of care or in relation to measures of outcome, the two had not been examined together. I found that knowledge and response were significantly associated and this suggests to me that a case can be made for regarding the doctor's knowledge as a valid indicator of the process of care.

Many recent writers (Donabedian, 1969; Barro, 1973; Gross, 1974) have stressed the need to associate the measures of the process of care with measures of outcome. Only then, they say, can measures of process be considered valid assessments of the quality of care. Because no relationships were found in this study between physician's response to patient's problems and measures of outcome and since the relationships between physician's knowledge and outcomes were ambiguous due to the possible confounding effects of other factors, I am forced to reserve judgement concerning the validity of physician's knowledge and physician's response as indicators of quality. There are several reasons which may explain the failure to refute the rather heretical null hypothesis (i.e. that whole-person care makes no difference to the patient). These are:

1) sensitivity of the outcome measures

2) accuracy and validity of the indicators of holistic care as measures of the process of care

3) confounding effect of other factors

4) lag-time between care and the effect.

7.1.1. Sensitivity of the Outcome Measures

The difficulties inherent in measures of end results which are "soft" (i.e. recovery) rather than "hard" (i.e. mortality) have been discussed in the Review of the Literature. Sackett et al.(1974) mentioned the herculean task of assessing multidimensional functional state which the World Health Organization defines as health. They concluded, however, that their measures of physical function were sensitive to short-term fluctuations and that clinically important changes in health were unlikely to have been undetected. Their conclusion was based on comparison of before and after measurements and a calculation of the changes which occurred. Their measure and those used in this study contained two items in common: 1) usual daily activities, 2) bed disability. They found that between 75% and 87% of patients who were impaired at the start were unimpaired at the end. The comparable figure in my study was around 80%. Of all those impaired at the end, 70% - 80% were unimpaired at the start in the study of Sackett et al. (1974). Comparable percentages from my research were 50% - 70%. Sackett et al took the high proportion of changes as evidence of the sensitivity of the measures. The figures from my study show a similar degree of sensitivity.

Therefore while I recognize the imperfections in the measurements of recovery status, I am convinced that the measures used in this study were sensitive to changes in the patient's status.

7.1.2. Accuracy and Validity of the Indicators of Holistic Care

The discussion of validity will draw on three sources of evidence:

1) checks of completeness of the methods of measurement
2) the test of construct validity
3) comparison of my results with other measures of knowledge and response.

For the indicators of knowledge, completeness of the information elicited from the patients was enhanced by the use of an interview with the patients.

The indicators of the physicians' knowledge of the patients' problems were found to be associated with the number of recent visits by the patients and this finding provided support for their validity (i.e. construct validity).

In addition, the results of other studies, although not wholly comparable to the present study, showed similar degrees of knowledge about patients' problems. Querido (1963) reported a study of a random sample of 125 families (401 individuals) from the list of general practitioners. All family members were given routine medical examinations and an interview to elicit psychosocial problems. Of the total number of physical disorders found, 44% were known to the physician. Of the serious disorders 95% were known and the non-serious disorders 52% were known. Of the 61 families with psychosocial problems that were related to somatic disorders, the physicians knew of the problems in 50%.

Williamson et al. (1964) reported a study of a random sample of persons 65 years and over, from the lists of three general practices. The subjects were given a full clinical examination and an interview by a psychiatrist. Men were found to have 297 disabilities of which 43% were known to family doctors; women, 373 of which 41% were known. The more severe the disability, the more likely it was to be known. The psychiatric findings indicated 54 cases of neurosis or depression of which 67% were known; 55 cases of dementia of which 87% were known.

Hull (1972) took a slightly different approach. The seven physicians in his study classified new consultations into four categories ranging from "patients known not at all" to "patients known very well". He found that the percentage of patients whose history, family and social background were known, in the opinion of the physician, ranged from 26% for one doctor through 88% for another.

In spite of the methodological differences between these studies and mine, the results were similar. Like Querido (1963), I found that physician's knowledge of serious physical disorders was greater than their knowledge of social problems. Williamson et al. (1964) considered the disabilities and psychiatric conditions of elderly patients and found physicians' knowledge to be much the same for both but rather low overall. Hull (1972) found marked differences among physicians, as did the present study.

Turning now to the indicators of physician's response, we remember that a test was carried out of the completeness of information in the medical record which was the source of data for all indicators of response. The completeness of the recording varied according to what aspect of the patients' problem was being considered (i.e. discomfort, worry, disturbance of daily living or social problem). The completeness of the records for responses to worries and social problems was low and if the recording practices were different for different groups of patients, any real associations between the characteristics of the patient and the scores on responses would have been obscured. An alternative method of assessing the physicians' responses, which might be considered in future research, has been shown to have drawbacks as well. Physicians who were asked to check-off a list of possible activities tended to check more activities than they actually carried out (Kelman et al., 1969).

A second possible reason for the failure of the indicators of physicians' response to show any effect upon outcomes might have been the necessity to limit them to response/no response dichotomies. The alternative of scoring a physician according to explicit criteria of good management was considered and rejected simply because of practical considerations: such criteria could not have been set up for all the diverse sets of possible presenting complaints. However, the rather gross measure used in this study perhaps lacked sensitivity.

In spite of these possible shortcomings, the indicators showed response patterns of physicians which were generally similar to those found by other researchers. For example, the findings of a study of physicians' activities by Scott et al. (1960), while not directly comparable to mine, are generally similar. They found, for example, that prescribing took place at 38% of the consultations, advice to continue medication at 17% and examination with the patient undressed at 52%. Reassurance and explanation of the illness each occurred 18% of the time. Discussion of the patient's social environment took place 11%

of the time, referral to nurse 14% and to the social worker 3%. Problems at work were discussed at 4% of the consultations and personal problems at 3%. If we equate prescribing and examining with response to discomfort, reassurance and explanation with response to worry, discussion of environment and referral to nurse or social-worker with response to disturbances of daily living and discussion of work or personal problems with response to social problems, then we see a similar pattern in the results of Scott et al. and the present study. Both showed most frequent responses for discomforts, next most frequent for worries and, finally, lower frequencies of responses for disturbances of daily living and social problems. Steiger and Yates (1969) found that for long-term patients (i.e. re-visitors) the great majority needed drugs and one-third needed care which was supportive, understanding and educational. Their other categories of need were not so common as these two. In my study, around 90% of patients needed some attention to discomfort and around 66% needed attention to worries, disturbances and social problems.

In conclusion, the evidence supports the indicators of physicians' knowledge of their patients' problems as valid measures of the process of care. The completeness of the medical record was doubtful and this finding suggests that the measures of response were not entirely accurate although the frequencies of physician's activities were similar to those from other studies.

7.1.3. Confounding Effect of Other Factors

The confounding variables which affected the relationships between physicians' knowledge and the patients' recovery were: number of recent visits, number of complaints, who initiated the visit and number of social problems. All significant relationships were lost when analyses were stratified by the confounding variables except that the positive association was maintained for the group with patient-initiated visits.

It is possible that within each level of the confounding variables the range of scores on physicians' knowledge was reduced thereby minimizing the possible effect of knowledge upon patients' recovery in the stratified analyses. This phenomenon, in conjunction with the reduction in the sample size when the crosstabulations were stratified by a confounding variable, could have been responsible for the loss of statistically significant associations between physicians' knowledge of patients' problems and the patients' recovery.

7.1.4. Lag-time Between Care and Effect

Another explanation of the finding that the indicators of holistic care were not related to patient outcomes concerns the lag-time between the care and the effect on the patient. The lag-time for some aspects of care is known. For example, most drugs have a specified time of onset of effects. In studies assessing the efficacy of a drug, the measurement of the effect should be made after this known time of onset of effect. Furthermore, the duration of action of drugs is usually known and any research must avoid an assessment of the effect after the effect has already worn off. When we are assessing the efficacy of holistic care, we find that the information analogous to the time of onset and duration of effect is unknown. The three month follow-up period used in this study might have been unsuitable. The effect of physician's response to the patient's problems may in some cases have taken longer than three months to appear and in other cases may have worn off by the end of three months. If there were many such cases a relation between care and outcome would be obscured. Prospective studies of patients receiving similar care are needed - studies which would allow repeated and frequent assessments of outcomes and therefore reveal the time of onset and the duration of effect.

7.2. Some Variations in the Scores on Physician's Knowledge

The indicators of physician's knowledge did not vary according to the age and education of the patients as had been predicted. Bart (1968) and Korsch et al. (1968) had presented evidence which supported the prediction that younger and better educated women were more apt to present their worries and social problems than older and less well educated women. My previous study (shown in Appendix II) found no differences in age and education of women who presented with signal behaviour and women who presented their psychosocial problems frankly. Several reasons why the present study showed no differences in scores among patients of different education and age groups are:

1) age range and education range were somewhat restricted,

2) the prediction may apply only to women, whereas the present study included men and women,

3) the physicians were discerning enough to interpret correctly communication from patients of varying age groups and levels of education.

Although there has been no clear evidence from other studies that continuity of care and completeness of family care results in higher quality care, a strong belief in their importance seems widespread. Wolfe and Badgley (1972) and Last (1965) expressed a need for information regarding the effects of the extent of family care and of continuity of care. I found no support for the prediction that these characteristics affected the physician's knowledge and therefore reserve judgement on their importance. It could be that the physicians at Tavistock maintain a level of family and continuous care well above any threshold where differences might be found. The frequency distributions could be considered as support for this view because the majority of patients enjoyed total family care and care exceeding one year from their doctor.

The number of complaints was consistently and negatively related to the scores on all indicators of holistic care. The tables showed that, having identified and responded to one complaint, in half the cases the five physicians did not question the patient further: they were content. Since the physicians in this study were not selected randomly to represent all family physicians, I cannot generalize this finding. However, I can point out that the five participating physicians carried out a low-volume practice. In addition, they were well versed in the writings of Balint (1964) and McWhinney (1972) regarding the importance of listening to the patient's complaints and of watching for underlying psychosocial problems. They had also converted 60% of their records to the problem-oriented approach to help keep track of patients with multiple problems. Therefore, I would submit that these physicians were more likely than most practising family doctors to have the time and the inclination to hear and record all the patient's problems. It would be safe to suggest that the tendency to elicit only one complaint which shows with the participating physicians could be at least as pronounced for other physicians.

This finding suggests to me a way of assessing the impact of the problem-oriented record upon the process of care as represented by my indicators of physician's knowledge. It may be that physicians who do not use the problem-oriented record would show a greater tendency to focus on a single problem than would physicians who consistently used the problem-oriented approach.

For patient-initiated visits, there were higher scores on most of the indicators of physician's knowledge than for doctor-initiated visits. At first I thought that the high proportion of doctor-initiated visits (80%) among the chronically ill patients in this study indicated "good care". However, the evidence seems to contradict this. It appears, at least for the five participating physicians, that the patients who initiated their own visit, rather than visiting for regular follow-up, received more attention from the physician. One explanation for this finding, I think, is that when physicians call patients back for a follow-up visit, they know what they want to achieve and are probably inclined to structure the questions around their own concerns. Perhaps questions such as "What is bothering you most today? What else is troubling you?" seem unnecessary to these physicians under the conditions of follow-up visits.

7.3. Satisfaction Measures

I found that the general questionnaire gave low scores on satisfaction, the intermediate gave higher scores and the personal questionnaire gave the highest scores. There are two explanations for these differences. (1) Bias affects both the general and the personal questionnaire. The bias which may affect the general questionnaire could be

5) Reason for follow-up

V: Follow-up which becomes a habit might be encouraging the patient's dependence on the doctor. If no reason other than habit can be given physician is not giving holistic care.

McW: Have to have a lot of baseline data in order to assess adequacy of the reason given by the physician. He will always be able to think up some reason. This data cannot be systematically acquired within the framework of the proposed study.

6) Weighting of the items:

V: Family item highest - very important.

Problem identification items taken together less than the family item. Equal weights for each of items 2-10 which he calls problem identification items. Item one less than 2-10 individually.

McW: Items 3-10, five points each because of redundancy.

Items 1-2, ten points each.

B: Items 7-10 must be equal.

Item 1 must be weighted heavily.

Item 2 must be less than one.

N: Cannot see doing it meaningfully except that since item one is crucial it should be given more weight.

-Comment - Patients' concept of pain and worry may be different from doctor's and this might be a problem to the research.

comparing physicians, a study of a large group of physicians is recommended. Variations in the kinds of care with the characteristics of physicians could be of interest to medical educators.

2) Considering the possible inappropriateness of any follow-up period in studies of process and outcome of care, I suggest we learn more about the timing of effects. In my opinion, what is necessary are prospective studies with repeated outcome measures to reveal how soon and for how long a doctor's action affects the patient.

3) The present study found that, for about half the patients, the physician knew about one complaint regardless of the number elicited during my interview with the patient. This finding suggests a useful test of the impact of the problem-oriented approach to record-keeping upon physician's knowledge of multiple complaints. I suggest a comparison between the indicators of knowledge of two groups of physicians: a) ones who conscientiously use the problem-oriented record, b) ones who do not use such a record.

4) The present study found that patients responded differently to questions about their own doctor compared to doctors in general. One explanation was that different biases affect the personal and general responses in such a way as to exaggerate the differences between the two response patterns. I suggest that a psychological experiment could shed some light on this matter. Groups of subjects could be assessed before and after they had been exposed to potentially biasing stimuli.

APPENDIX I

Questions From a Paper by Fisher (1971)

From Fisher (1971) two nearly identical questions were asked about the personal physician (direct) and the doctors in general (indirect). They were:

	DIRECT	INDIRECT
Question 1	∼74% favourable response "Condition fully explained"	∼48% favourable response "Most doctors usually don't tell you enough about your sickness."
Question 2	∼85% favourable response "Communicate easily with doctor."	∼82% favourable response "Most doctors give you a chance to tell them exactly what your trouble is."

The interpretation of these results must be made with caution for two reasons: 1) Fisher did not show the number of respondents (N) for his questions regarding doctors in general. Where he showed N's for other questions in the paper they varied by around 15%. Therefore, one cannot be certain that the same group of patients is being compared. 2) It must be noted that the first pair of questions shown above contained one statement which was worded positively (direct) and one worded negatively (indirect). Comparison of questions which differ in this manner is not entirely valid.

APPENDIX II.

A Summary of Earlier Research:

How Illness Presents, A Study of Patient Behaviour

Stewart, M.A., McWhinney, I.R., Buck, C.W.

Purpose of the Research:

The first purpose of this research was to assess the reliability of a classification of patient behaviour. Our second purpose was to apply the classification to a sample of patients from five practices. We wanted to test our predictions regarding relationships between patient behaviour and certain characteristics of patients and physicians.

Description of the Classification of Patient Behaviour:

A classification of patient behaviour was presented by McWhinney in 1972. The classification was intended for use by physicians alongside the classification of the patient's illness. The purpose of the taxonomy was to provide the physician with a framework in which to describe his assessment of the reason for the visit. It was felt that the taxonomy would order physicians' thoughts on the behavioural aspects of a patient's visit just as the diagnostic process orders thoughts on the pathology of signs and symptoms. It was expected that the use of the taxonomy by physicians would help them to understand their patients and thereby pave the way for better management.

The seven categories of the taxonomy of patient behaviour were as follows:

1. Limit of Tolerance.

The symptoms are causing pain, discomfort or disability which has become intolerable. This large category covers many straight-forward episodes of illness from an attack of influenza to a fractured femur. The capacity of a symptom to cause distress will depend on many variables, including the patient's cultural background and occupation. Episodes in this category are not confined to physical symptoms. Depression, anxiety or other psychological symptoms may be causing sufficient distress, disability or loss of function to justify a visit to the physician.

2. Limit of Anxiety

The patient visits not because his symptoms are causing distress but because of their implications. The patient or a relative fears the consequences of his symptoms. Since they depend on a person's knowledge and beliefs about illness, episodes in this category are heavily influenced by social and cultural factors and since the patient's knowledge cannot be assumed to be as great as the physician's, some of these episodes might be considered by the physician to be "unnecessary" in a medical sense, but necessary from the patient's point of view.

3. Signal Behaviour

In these cases the presenting illness or symptom is used as a "ticket of admission" to the doctor so that some underlying problem can be presented. Four kinds of presenting illness can fall into this category:

(a) attendance for a minor illness.

(b) attendance for a chronic illness without any apparent change in its severity.

(c) attendance for unorganized symptoms without organic pathology.

(d) delayed recovery from an illness or injury without any apparent reason for the delay.

4. Administrative

This category would include attendances which fall into none of the first three categories and whose sole purpose is administrative (e.g. provision of a certificate of illness for an employer).

5. Opportunity

The patient mentions a symptom purely because the opportunity has arisen (e.g. a mother bringing baby for a well-baby check, mentions a sympton of her own).

6. No Illness

Attendances for preventive purposes, such an antenatal or well-baby care.

7. Lanthanic*

The doctor discovers a condition of which the patient is unaware.

Test of Reliability:

During the spring of 1971, two of the authors visited eight co-operating physicians in their offices. Separately, we viewed consultations between patient and physician - some by sitting in the consultation room and some by viewing through a one-way window. Each investigator was completely familiar with the meaning of the classification of patient behaviour and explained it to the cooperating physician. The investigator and the physician individually classified the complaints presented by each patient. The reliability of the classification schema was estimated by comparing the assessment of the investigator and the physician. There was agreement in approximately 75% of the cases.

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*We are grateful to Dr. A.R. Feinstein for providing us with this term.

Given our particular interest in the category of signal behaviour and our belief that this category was a difficult one to identify and manage, we decided to do an additional test of the capacity of physicians to detect this behaviour. We wrote eight resumés of visits to physicians, four representing signal behaviour and four representing other categories of patient behaviour. Eleven physicians classified each resumé and their designation agreed with the intent of the resume 75% of the time.

On the basis of these findings we concluded that no more than 25% error could be expected for any category. We decided that with more vigorous explanation of the classification schema, future studies might achieve agreement even higher than 75%.

Method of the Study:

In order to obtain an estimate of the relative frequency of the categories of patient behaviour, we had physicians classify the visits of their patients during a six month period. These were visits of a sample of women, 20 years and over, whose names were obtained from a list of randomly selected family files in five teaching practices in London, Ontario. The five physicians classified the visits some months after the visit had taken place. The physicians used their medical records as an aide-memoire and none expressed any difficulty in classifying after-the-fact.

There were 219 women in the sample obtained. One hundred and twenty-three women, or 56.2% had visited the physician at least once during the six months under study. These women accounted for 389 visits during the study period.

Results:

Each of the 389 visits was classified by the physician and the distribution of presenting behaviour is shown below.

Frequency Distribution of the Categories of Patient Behaviour

	Number	Percent
Limit of Tolerance	139	35.7
a) Symptom	83	21.3
b) Psychosocial Problem	56	14.4
Limit of Anxiety	99	25.4
a) Symptom	72	18.5
b) Psychosocial	27	6.9
Signal Behaviour	54	13.9
Administrative	5	1.3
Opportunity	2	0.5
No Illness	86	22.1
Lanthanic	4	1.0
TOTAL	389	100.0

Four groupings were made of these categories for comparison purposes: 1) all physical symptoms whether limit of tolerance or anxiety 2) all psychosocial problems which were presented frankly whether limit of tolerance or anxiety 3) signal behaviour 4) no illness. The distribution of these four groups differed significantly from one doctor to another. Some physicians showed high proportions of the "no illness" category. Some physicians had high proportions of visits with problems of living.

If we discount any differences among the doctors in their classification of patients visits (and there was no evidence in the reliability tests of differences among the five participating physicians), we must conclude either that physicians build up different kinds of practices, or that subjective differences enter into the classification of their own patients.

The distributions of the four groups of patient behaviour 1) symptoms 2) frank psychosocial problems 3) signal behaviour 4) no illness, were found to differ for patient-initiated visits and doctor-initiated visits. Patient-initiated visits were characterized by more symptoms and more signals. This findings leads us to recommend that physicians pay close attention to the patient-initiated visits in order not to miss the message or signal from one-quarter of these patients.

We turn now to a consideration of only the signals and the frank psychosocial presentations, omitting all other reasons for visiting. Of the visits which were designated as presenting minor or self-limiting illnesses, the signals formed the majority. On the other hand, visits where the conditions presented were moderate or severe, the majority were frank presentations of psychosocial problems. This finding leads us to conclude that minor illnesses are more often the mask for the signaler.

We predicted differences among the five physicians in the ratio of signal behaviour to frank presentations of psychosocial problems. We expected two particular physicians to have much higher proportions of frank presentations compared to the other three physicians. We regarded these two physicians as particularly interested in psychosocial problems. We considered them to be accepting of problems of living. We felt that they communicated to their patients their willingness to listen to non-physical problems. Our expectations were born out by the data.

Given our contention that signal behaviour is difficult to assess and manage, we are encouraged to note that some physicians can decrease the frequency of this complex behaviour by encouraging frank discussion of psychosocial problems.

In order to relate patient behaviour to background characteristics of the patients we changed our analysis from one based on visits to one based on patients. Of the 123 women who had visited the physician at least once during the study-period 61 had presented a signal and/or a frank psychosocial problem. There were no differences between high and low social classes as to whether they presented their problems of living frankly or as signals. In addition, there were no significant differences among educational levels or among age levels.

Mechanic (1972) has reviewed studies which showed social and cultural influences upon response to symptoms and upon vocabularies of discomfort. Bart (1968) presented data which suggested that women who were less well educated and of lower socio-economic groups expressed psychologic distress through "signals". She said that such patients have a different vocabulary of discomfort from those patients we call "frank" presenters. Korsch et al. (1968) found that mothers of higher education were more likely to express their anxieties frankly to the doctor. Our data did not support these previous findings and we suggest that while social and cultural attributes of the patient may be important influences upon the presenting behaviour, they may not be as important as other factors such as the manner of the doctor himself.

Discussion:

While it could be argued that our findings were affected by the 25% error shown in the reliability test, we emphasize that none of the five physicians showed a tendency to systematic error. Any errors were most likely to be distributed equally over the categories of patient behaviour and in the same way for all five physicians.

Since we felt that the reliability test showed a need for a more intensive explanation of the taxonomy of patient behaviour, we were able to expose the five cooperating physicians to additional explanations of the taxonomy before they began classifying the visits of their patients. We therefore have every reason to believe that the distributions and comparisons were based on a reliability of greater than 75%.

One of the purposes of the taxonomy of patient behaviour put forward by McWhinney (1972), was to aid physicians when they confront presenting complaints which do not fall neatly into a diagnostic category. We found that the proportion of visits for reasons other than symptoms or preventive purposes was slightly greater than one third. This is a substantial part of a practice. This finding underlines the importance of skills in identifying and handling these personal problems.

Several recommendations can be made on the basis of our findings. Physicians would be wise to look at patient-initiated visits, especially those for minor illnesses in a new light. These visits are very likely to be masks, fronts or signals of other problems which the patient finds difficult to express. Furthermore, there was some evidence to suggest that the physician himself, and his interest in psychosocial problems, influences the patient's presentation. A physician who is open and willing to listen to problems of living seems to encourage the frank presentation of psychosocial problems and thereby decrease the proportion of complicated signals.

APPENDIX III

Details of the Meeting of the Committee of Experts

Present: M. Stewart, D.J. Wanklin, Dr. I.R. McWhinney, Dr. Michael Brennan, Dr. Paul Newell. (Dr. I. Vinger was absent but his comments are included).*

1) Integrated approach:

N: Concept too woolly. Ought not to incorporate.

B: Concept has to do with the thought process of problem definition. Much of this is already covered in the method proposed but it would be even better to interview the physician right after the patient's visit. The concept also includes the physician's recognition of the process of the visit and his analysis of problem definition. Criteria would have to be set up for these aspects.

V: Concept could be assessed by assuming that a one-faceted approach was not integrated. An open-ended discussion from the physician was suggested as an alternative to the questionnaire methods proposed. A check-list would be needed by the evaluator e.g. social problems mentioned, relationship of social problem to complaint was mentioned.

2) Developmental approach:

N: Understanding and knowledge are assessed in the proposed method and he feels comfortable with this. The limitation is that only one

---

*One member was unable to attend the meeting. His comments were made to M. Stewart before the meeting but are now included in these minutes.

point in time is considered and not the time continuum.

B: Does not feel the proposed method includes the concept. Criteria difficult to set up.

3) Preventive approach:

McW: Would be meaningless in this study because of the heterogeneous patients and the lack of systematic data regarding risk factors. A subject for another study perhaps.

W: Difficult in that the unit of knowledge is an illness episode.

B: More easily measured in new patients by such criteria as: a) assessing risks b) educating the patient to the risks c) follow-up of these patients d) advise given patients.

V: Such criteria were suggested (none relate to one episode) a) active attempt to get patients records b) C.A. during the past year.

4) Family Approach:

V: Concept essential to prepare the family for changes. Physician must be aware of what is going on in the family and how the family interacts before an accute episode arises. He suggests that it can be essential that the physician talk to or attempt to talk to all members of a family.

McW: The physician knowledge of existing family problems and his response is being assessed and that is enough.

N: Questions the universal appropriateness of a family approach. He feels that one would have to assess each situation individually.

B: Concept is an attitude and is reflected in physicians willingness to take incomplete families and in his knowledge and awareness.

5) Reason for follow-up

V: Follow-up which becomes a habit might be encouraging the patient's dependence on the doctor. If no reason other than habit can be given physician is not giving holistic care.

McW: Have to have a lot of baseline data in order to assess adequacy of the reason given by the physician. He will always be able to think up some reason. This data cannot be systematically acquired within the framework of the proposed study.

6) Weighting of the items:

V: Family item highest - very important.

Problem identification items taken together less than the family item. Equal weights for each of items 2-10 which he calls problem identification items. Item one less than 2-10 individually.

McW: Items 3-10, five points each because of redundancy.

Items 1-2, ten points each.

B: Items 7-10 must be equal.

Item 1 must be weighted heavily.

Item 2 must be less than one.

N: Cannot see doing it meaningfully except that since item one is crucial it should be given more weight.

-Comment - Patients' concept of pain and worry may be different from doctor's and this might be a problem to the research.

APPENDIX IV

Preliminary Interview With the Patient

NAME (Surname) ______________ First Name ______________

ADDRESS ______________ Telephone No. ______________

____

AGE ________ SEX ________ TODAY'S DATE ______________

EDUCATION: Check one of the following:

Grade 8 or lower ________;

Grade - 13 ________;

1 or more years further training ________.

YOUR OWN COUNTRY OF BIRTH ________

YOUR PARENTS' COUNTRY OF BIRTH

Mother's ______________

Father's ______________

WAS THIS VISIT SUGGESTED BY: YOURSELF ________

THE DOCTOR ________

NAME OF TODAY'S DOCTOR ______________

HOW LONG HAVE YOU BEEN SEEING TODAY'S DOCTOR? ______________

LIST ALL MEMBERS OF YOUR IMMEDIATE FAMILY INCLUDING YOURSELF (i.e. parents, husband or wife, children)

				Does this person use the doctor mentioned above?		Does this person use the Tavistock Medical Group?	
Number	Relationship to Head	First Name	Check (✓) if living with you now	Yes	No	Yes	No
1							
2							
3							
4							
5							

IN YOUR OWN WORDS WHAT PROBLEMS BROUGHT YOU TO THE DOCTOR TODAY?

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________

HOW MUCH PAIN OR DISCOMFORT DOES EACH OF THESE PROBLEMS CAUSE?

	A Lot	A Fair Amount	A Small Amount	Not at All
1.	____	____	____	____
2.	____	____	____	____
3.	____	____	____	____
4.	____	____	____	____
5.	____	____	____	____

HOW WORRIED HAVE YOU BEEN ABOUT EACH OF THESE PROBLEMS?

	A Lot	A Fair Amount	A Small Amount	Not at All
1.	____	____	____	____
2.	____	____	____	____
3.	____	____	____	____
4.	____	____	____	____
5.	____	____	____	____

HOW MUCH TROUBLE DO THESE PROBLEMS CAUSE YOU IN YOUR DAILY LIVING?

	A Lot	A Fair Amount	A Small Amount	Not Any
1.	____	____	____	____
2.	____	____	____	____
3.	____	____	____	____
4.	____	____	____	____
5.	____	____	____	____

1. Within the past two weeks, did you stay in bed all OR part of a day because you were not feeling well?

   Yes _____ No _____ Don't Know _____

2. Were there other days within the past two weeks when you were not able to do your usual activities because you were not feeling well?

   Yes _____ No _____ Don't Know _____

3. (Apart from this) within the past two weeks were there times when you felt there was something wrong with your health?

   Yes _____ No _____ Don't Know _____

The following is a list of fairly common problems that people have. DO YOU HAVE ANY OF THESE PROBLEMS NOW? IF SO, HOW MUCH ARE THEY BOTHERING YOU?

	PROBLEM?		BOTHERED?			
	Yes	No	A Lot	A Fair Amount	A small Amount	Not at All
1. Illness or injury of a family member	____	____	____	____	____	____
2. Problem (other than illness or injury) of an elderly member in your family	____	____	____	____	____	____
3. Death of a friend or family member	____	____	____	____	____	____

	PROBLEM?		BOTHERED?			
	Yes	No	A Lot	A Fair Amount	A small Amount	Not at All
4. Separation from friend or family member						
5. Had to give up something valuable or useful (i.e. job, car, house)						
6. Problem with neighbors or friends (i.e. not getting along, misunderstanding)						
7. Problem with child or children (i.e. discipline, not getting along)						
8. Problem with husband or wife (i.e. not helping out, not getting along)						
9. Problem with boss (i.e. not getting along)						
10. Other problem at work						
11. Being too busy						
12. Being bored with life						
13. Problem with money						
14. Being lonely						
15. Any other personal problem						

What is it? ______________________________

OF ALL THE PROBLEMS YOU MENTIONED ON THIS PAGE OR ON THE LAST PAGE, WHICH IS THE WORST?

____

APPENDIX V

Questionnaire For Doctor

NAME OF PATIENT ______________________ DATE TODAY ______________

HOW MUCH OF A PROBLEM DOES THIS PATIENT HAVE IN EACH OF THE FOLLOWING AREAS?

	Large Problem	Medium Problem	Small Problem	No Problem	Would the patient deny this problem? Put ✓ if yes
1. Illness or injury of of family member					
2. Problem (other than illness or injury) in an elderly member in your family					
3. Death of a friend or family member					
4. Separation from friend or family member					
5. Had to give up something valuable or useful (i.e. job, car, house)					
6. Problem with neighbours or friends (i.e. not getting along, misunderstanding)					
7. Problem with child or children (i.e. discipline, not getting along)					
8. Problem with husband or wife (i.e. not helping out, not getting along)					

	Large Problem	Medium Problem	Small Problem	No Problem	Would this patient deny this problem? Put ✓ if yes
9. Problem with boss (i.e. not getting along)	___	___	___	___	___
10. Other problem at work	___	___	___	___	___
11. Being too busy	___	___	___	___	___
12. Being bored with life	___	___	___	___	___
13. Problem with money	___	___	___	___	___
14. Being lonely	___	___	___	___	___
15. Any other personal problem	___	___	___	___	___

Specify ______________________________

LIST THE COMPLAINTS AND PROBLEMS WHICH THIS PATIENT HAS BROUGHT TO YOU FROM ______________ TO ______________. (COMPLAINTS AND PROBLEMS SHOULD BE AS CLOSE TO THE PATIENT'S WORDS AS POSSIBLE.)

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________

HOW MUCH PAIN OR DISCOMFORT DID THIS PATIENT HAVE WHEN HE/SHE BROUGHT THE PROBLEM TO YOU?

	A Lot	A Fair Amount	A Small Amount	Not at All
1.	___	___	___	___
2.	___	___	___	___
3.	___	___	___	___
4.	___	___	___	___
5.	___	___	___	___

HOW WORRIED WAS THIS PATIENT WHEN HE/SHE BROUGHT THIS PROBLEM TO YOU?

	A Lot	A Fair Amount	A Small Amount	Not at All
1.	___	___	___	___
2.	___	___	___	___
3.	___	___	___	___
4.	___	___	___	___
5.	___	___	___	___

HOW MUCH TROUBLE WERE THESE PROBLEMS CAUSING THIS PATIENT IN DAILY LIVING WHEN HE/SHE BROUGHT THE PROBLEM TO YOU?

	A Lot	A Fair Amount	A Small Amount	Not at All
1.	___	___	___	___
2.	___	___	___	___
3.	___	___	___	___
4.	___	___	___	___
5.	___	___	___	___

IN THE EVENT THAT EACH OF THE FOLLOWING TREATMENTS WERE FELT TO BE DESIRABLE, WOULD THIS PATIENT BE SUITABLE (i.e. MOTIVATED, RELIABLE OR COMPLIANT) FOR SUCH MANAGEMENT?

	Yes	No	If not, why not
a) Drug therapy			
b) Physical therapy (e.g. physio, diet)			
c) Psychotherapy			
d) Social intervention			

APPENDIX VI

Questionnaires For Assessing Patients' Satisfaction

GENERAL:

We want to know what you think about doctors in general. This questionnaire contains some statements, each of which say something different about doctors in general.

We want to know for each statement whether you agree (think it is true) or disagree (think it is not true). There are no right or wrong answers: we just want to know what you think.

The information is confidential and will not be seen by any doctors nor anyone else but me.

	Agree	Disagree	
1.	___	___	You cannot expect any one doctor to be perfect.
2.	___	___	Doctors make you feel like everything will be all right.
3.	___	___	A doctor's job is to make people feel better.
4.	___	___	Too many doctors think you cannot understand the medical explanation of your illness, so they do not bother explaining.
5.	___	___	Doctors act like they are doing you a favour by treating you.
6.	___	___	A lot of doctors do not care whether or not they hurt you during the examination.
7.	___	___	Many doctors treat the disease but have no feeling for the patient.
8.	___	___	Doctors should be a little more friendly than they are.
9.	___	___	Most doctors let you talk out your problems.
10.	___	___	Doctors do their best to keep you from worrying.
11.	___	___	Doctors are devoted to their patients.
12.	___	___	With so many patients to see, doctors cannot get to know them all.

	Agree	Disagree	
13.	___	___	Most doctors have no feelings for their patients.
14.	___	___	Most doctors take a real interest in their patients.

INTERMEDIATE:

We want to know what you personally think about the doctors and the care you have received at Tavistock. This questionnaire contains some statements, each of which say something different about doctors in general.

We want to know for each statement whether you agree (think it is true) or disagree (think it is not true). There are no right or wrong answers: we just want to know what you think.

The information is confidential and will not be seen by the doctors nor anyone but me.

	Agree	Disagree	
1.	___	___	You cannot expect any one doctor to be perfect.
2.	___	___	Doctors make you feel like everything will be all right.
3.	___	___	A doctor's job is to make people feel better.
4.	___	___	Too many doctors think you cannot understand the medical explanation of your illness, so they do not bother explaining.
5.	___	___	Doctors act like they are doing you a favour by treating you.
6.	___	___	A lot of doctors do not care whether or not they hurt you during the examination.
7.	___	___	Many doctors treat the disease but have no feeling for the patient.
8.	___	___	Doctors should be a little more friendly than they are
9.	___	___	Most doctors let you talk out your problems.
10.	___	___	Doctors do their best to keep you from worrying.

	Agree	Disagree	
11.	___	___	Doctors are devoted to their patients.
12.	___	___	With so many patients to see, doctors cannot get to know them all.
13.	___	___	Most doctors have no feeling for their patients.
14.	___	___	Most doctors take a real interest in their patients.

PERSONAL:

We want to know what you personally think about the doctors of the Tavistock group who you have seen in the past few months and what you think about the care they have given you. This questionnaire contains statements, each of which say something different about your doctors.

We want to know for each statement whether you agree (think it is true) or disagree (think it is not true). There are no right or wrong answers: we just want to know what you think.

The information is confidential and will not be seen by anyone but me. The doctors will not see your answers.

	Agree	Disagree	
1.	___	___	You cannot expect the Tavistock doctors to be perfect.
2.	___	___	The Tavistock doctors make you feel like everything will be all right.
3.	___	___	The job of the Tavistock doctors is to make people feel better.
4.	___	___	The Tavistock doctors think you cannot understand the medical explanation of your illness, so they do not bother explaining.
5.	___	___	The Tavistock doctors act like they are doing you a favour by treating you.
6.	___	___	The Tavistock doctors do not care whether or not they hurt you during the examination.
7.	___	___	The Tavistock doctors treat the disease but have no feeling for the patient.

	Agree	Disagree	
8.	___	___	The Tavistock doctors should be a little more friendly than they are.
9.	___	___	The Tavistock doctors let you talk out your problems.
10.	___	___	The Tavistock doctors do their best to keep you from worrying.
11.	___	___	The Tavistock doctors are devoted to their patients.
12.	___	___	With so many patients [illegible] see, the Tavistock doctors cannot get to know them all.
13.	___	___	The Tavistock doctors have no feeling for their patients.
14.	___	___	The Tavistock doctors take a real interest in their patients.

APPENDIX VII

Follow-Up Interview With The Patient

THESE WERE THE PROBLEMS YOU BROUGHT TO THE DOCTOR THREE MONTHS AGO.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________

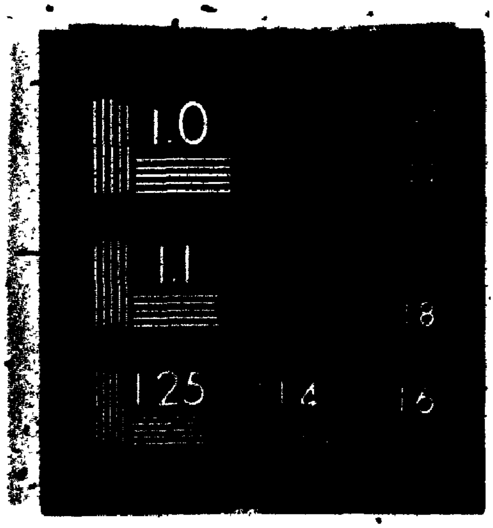
HOW MUCH PAIN OR DISCOMFORT DOES EACH OF THESE PROBLEMS CAUSE NOW?

	A Lot	A Fair Amount	A Small Amount	Not at All
1.	___	___	___	___
2.	___	___	___	___
3.	___	___	___	___
4.	___	___	___	___
5.	___	___	___	___

HOW WORRIED HAVE YOU BEEN ABOUT EACH OF THESE PROBLEMS NOW?

	A Lot	A Fair Amount	A Small Amount	Not at All
1.	___	___	___	___
2.	___	___	___	___
3.	___	___	___	___
4.	___	___	___	___
5.	___	___	___	___

3 OF/DE 3



HOW MUCH TROUBLE DO THESE PROBLEMS CAUSE YOU IN YOUR DAILY LIVING NOW?

	A Lot	A Fair Amount	A Small Amount	Not at All
1.	___	___	___	___
2.	___	___	___	___
3.	___	___	___	___
4.	___	___	___	___
5.	___	___	___	___

1. Within the past 2 weeks, did you stay in bed all OR part of a day because you were not feeling well?

   Yes ______ No ______ Don't Know ______

2. Were there other days within the past 2 weeks when you were not able to do your usual activities because you were not feeling well?

   Yes ______ No ______ Don't Know ______

3. (Apart from this) within the past 2 weeks were there times when you felt there was something wrong with your health?

   Yes ______ No ______ Don't Know ______

DO YOU HAVE ANY OF THESE PROBLEMS NOW? IF SO, HOW MUCH ARE THEY BOTHERING YOU NOW?

		PROBLEM?		BOTHERED?			
		Yes	No	A Lot	A Fair Amount	A Small Amount	Not at All
1.	Illness or injury of a family member						
2.	Problem (other than illness or injury) of an elderly member in your family						
3.	Death of a friend or family member						
4.	Separation from friend or family member						
5.	Had to give up something valuable or useful (i.e. job, car, house)						
7.	Problem with child or children (i.e. discipline, not getting along)						
8.	Problem with husband or wife (i.e. not helping out, not getting along)						
9.	Problem with boss (i.e. not getting along)						
10.	Other problem at work						
11.	Being too busy						
12.	Being bored with life						
13.	Problem with money						
14.	Being lonely						
15.	Any other personal Problem						

What is it? ____________________

LIST ANY OTHER PROBLEMS YOU HAVE WHICH ARE NOT MENTIONED ON PAGE 1 OR ON THIS PAGE.

1. ____
2. ____
3. ____
4. ____
5. ____

ON THE WHOLE DO YOU FEEL BETTER OR WORSE THAN YOU DID THREE MONTHS AGO?

BETTER ______ SAME ______ WORSE ______

If better, what has helped you most to feel better?

____
____
____

Can you think of some things the doctor did which helped you feel better?

YES ______ NO ______

If YES, list these things he did

1. ________________________
2. ________________________
3. ________________________

If worse, what has caused you to feel worse?

____
____
____

Can you think of some things the doctor did or did not do which may have caused you to feel worse?

YES ______ NO ______

If YES, list these things

1. ________________________
2. ________________________
3. ________________________

APPENDIX VIII

Criteria for Entrance Into the Study

1. Patients ≥ 25 years
2. With one of the following illnesses:
    - hypertension
    - arthritis
    - diabetes
    - ischaemic heart disease
    - congestive heart failure
    - other heart ailment
    - stroke
    - chronic peptic ulcer
    - chronic bronchitis, chronic asthma
    - chronic skin condition (neurodermatitis, psoriasis)
    - chronic back pain
    - obesity
    - varicose veins

APPENDIX IX

Discussion of Alternative Criteria for Eligibility of Patients for Follow-up

Alternatives:

As I saw it at the time there were three ways of selecting patients to be followed-up. I will discuss each one and explain the reason for choosing the one I used.

1. Patients who initiated the visit themselves.

The rationale behind this criterion was that a new problem which was serious enough to warrant the patient initiating a visit ~~to the~~ physician marked a logical beginning for an episode of medical care. There were two flaws in this criterion. First, in the practice in Tavistock less than 30% of the patients with chronic illnesses initiated their own visits. We found that most were waiting until a scheduled follow-up appointment to mention any new problems to the doctor. Given the constraints of time allowed for the collection of data, the number of patients generated by this criterion was not adequate. Second, most patients who initiated a visit because of a new problem were expected to have several old or recurring problems currently bothering them. Therefore the rationale of the logical beginning point of the episode of medical care applied to only one of several current problems. My concern lay with the whole complex of presenting complaints at any one time rather than with any one particular complaint. I therefore rejected the criterion that the patient must have initiated the visit. However I kept in mind the possibility of doing a special analysis on the subsample who did initiate a visit for new problems for the purpose of comparing the results with these from the total group.

2. Patients with a new problem or a flare-up of an old problem as the reason for coming to the doctor.

The rationale for this criterion was the same as for patient-initiated visits i.e. a logical beginning of an episode of care and it had the same draw-back i.e. that only some of the whole complex of presenting complaints were new or flare-ups. Furthermore only around 40% of the chronic patients who were given the initial interview fell into this category and for the time available this percentage did not yield enough cases.

3. Patients with a problem currently bothering them, whether the problem was new or old to the physician.

The existence of some discomfort, worry or disturbance of daily living at the preliminary interview was chosen as the criterion for follow-up for several reasons:

First: By this criterion patients without current distress from their presenting complaints were excluded because I had decided that the existence of a problem was to be the baseline from which to judge the knowledge and response on the part of the physician. Also the group of patients chosen had some problem to recover from and therefore allowed meaningful outcome assessments.

Second: By this criterion, all current problems were given equal status; no single kind was isolated for special consideration. This criterion implied the expectation that physicians pay attention to all current complaints.

Third: Around 70% of the patients who had chronic illnesses and who visited the doctor fell into this group allowing adequate numbers within the time constraints of the data collection.

Initial Strategy and its flaws:

During the first week of entering patients into the study and carrying out the preliminary interview, alternative number 2 was being used. Patients with chronic illnesses were asked for their cooperation only if they replied in the affirmative to the question of the nurse "Do you have any new problems for the doctor today/or any flare-ups since last visit?". It became apparent that patients were being missed because they were reluctant to admit their problems to the nurse. Rather than risk further losses I decided to approach all patients who had one of the listed chronic conditions. The decision to change from criterion 2 to criterion 3 took place later after I had reevaluated the needs of the study.

APPENDIX X

Development of A Questionnaire Method of Eliciting Psychosocial Problems

Introduction

The measurement of a patient's psychosocial status has received a great deal of attention recently. It is not surprising that psychosocial information is considered important for both practitioners and researchers of health care delivery. Psychosocial status of patients has been related to some crucial variables. Rahe et al. (1967) found a relationship between stress and the occurrence and severity of medically attended illness. Hinkle's study (1958) indicated that the amount of self-reported illness was influenced by the extent to which a person perceived his environment as stressful . Thurlow (1971) found that the subjective events are significantly related to the number of medically attended illnesses. Nuckolls' study (1972) suggested that the outcome of pregnancy, designed as "complicated" as opposed to "normal", was associated with social stresses. In addition, evidence was found which related life stress to delayed recovery (Imboden et al.1959) and to incomplete recovery (Querido, 1959-1960).

One difficulty which confronted investigators such as the ones mentioned above was the measurement of psychosocial status. The question of what constituted a psychosocial problem was answered in a variety of ways. Two of these concepts are to be considered in this paper; stressful life events and subjective reaction to stressful events or situations.

The concept of psychosocial status as reflected in stressful events has received widespread attention. The Schedule of Recent Experience is probably the most frequently used measure of psychosocial status and has even been described in a popular book by Alvin Toffler. The schedule is a self-administered questionnaire which lists forty-three life events each of which is associated with some adaptive or coping behaviour on the part of the respondent. The emphasis in this technique is on the change from the existing state of adjustment and not on psychological meaning, emotional or social desirability (Holmes and Rahe, 1967).

The measurement of life events, however, ignores the possibility that people react differently to similar events and situations. Hinkle et al.(1958) found that whereas the objective events were not associated with self-reported illness, the subjective reaction was. Therefore the subjective reaction to life events was considered crucial and ways of measuring this reaction have been sought. Coates (1969) viewed the relative paucity of investigations into subjective responses to life events as unfortunate. "The investigative literature on "crises' has frequently not distinguished between the precipitating event and the individual's mode of response. The resolution of this problem has awaited a taxonomy of life events which would be studied independently from events identified as stressful." (page 472)

Hinkle's opinion was that lengthy interviews were the method of choice for ascertaining a person's reaction to life events. The present investigation was undertaken for the purpose of providing a questionnaire technique which could ascertain, simply and reliably, the subjective reaction to life events. It was felt that such a questionnaire could prove to be a practical tool and therefore encourage study into the subjective aspects of psychosocial status.

Setting

This research was carried out in three teaching family medical centres in London and Galt. Each centre consists of four physicians in a group practice with public health nurses and social workers as part of the team. The first two versions of the questionnaire were developed during 1971 and 1972.

Development of the Questionnaire

An attempt was made to have the questionnaire cover the 15 important topics which had come to light during ten long, open-ended interviews with patients known to the social worker to have a variety of psychosocial problems. The list of topics included not only life events (e.g. illness in the family, death of a loved one) but also ongoing situations like relationships with spouse and children. There were two kinds of information available from the questionnaire. The first kind merely ascertained whether or not a certain event had occurred during the specified time period. For the second kind of question the patient could check one of four boxes indicating a range from positive to negative response. These questions were designed to tap the personal reaction to any of the events or situations mentioned above. After the first draft of the questionnaire had been drawn up as a result of the ten interviews, a committee of three (a family physician, an epidemiologist and a sociologist) reviewed the questions and assessed their content validity. Some questions were deleted and some were added at this stage. In addition, six of the ten patients who had been interviewed were willing to try the questionnaire. Revisions were made on the basis of their comments and criticisms. Further revisions were made after a trial mailing in which 95 questionnaires were mailed to patients and 62 or 63.2% were returned with comments.

Three versions of the questionnaire have been developed:

1. The longest questionnaire contained 108 questions concerning patients' subjective reaction to 15 events or ongoing situations. A reliability test compared the questionnaire data with an interview with 26 patients. For the 108 questions concerning subjective reaction, the reliability was low. For the 15 events the reliability was adequate. A validity test compared the questionnaire with the items on the Schedule of Recent Experience (Holmes and Rahe, 1967). This test showed that the questionnaire had sensitivity but lacked specificity.
2. The shorter questionnaire contained 43 questions concerning patients' subjective reaction to 15 events or ongoing situations. This questionnaire was derived from the longest questionnaire. For each of the 15 events or situations, the questions were grouped into factors, using factor analysis. Then one question was chosen to represent each factor. Agreement between the longest and the shorter questionnaires was around 80%.
3. The shortest version of the questionnaire was the one used in the study reported in this thesis. It was developed at the request of the participating physicians. They thought that the other short version was still too long. The shortest questionnaire simply listed the 15 event or situations. The respondent was asked "Are you bothered by something in this area". The respondent then identified his subjective reaction on a four point scale: no bother, a little, a fair amount, a lot. To

obtain complete information using this short form, an interview with the respondent was found to be necessary (See Appendix XI).

APPENDIX XI

Completeness of Information From the Preliminary Questionnaire for the Patient

A test of the completeness of information from the preliminary questionnaire was undertaken in August 1973, before the study began. This test was carried out by a medical student in two teaching family medical centres in London, Ontario.

The patients were selected, in advance to their visit to the doctor, according to the criteria for entrance into the study. They were invited to come to the office early in order to fill out the questionnaire and participate in the interview.

Six men and two women agreed to take part in the test. They were left alone to complete the questionnaire and later interviewed by the medical student. On the basis of these interviews the medical student concluded:

1. the questionnaire did not elicit as many problems as the interview.
2. the questions regarding relative distress (i.e. bothered a lot, a fair amount, a little) were answered with little thought and the interview provoked more thoughtful responses.
3. the questionnaire was inferior to the interview.

On the basis of these conclusions, the questionnaire was replaced by an interview for eliciting baseline information from the patients.

APPENDIX XII

Data Form - Doctor's Activities of Management of the Patient's Complaints

PATIENT ID ______________

Time Period ______________ to ______________ = ______________ weeks

Visits ______________

Doctors seen	1 ______________	# Times	______________
	2 ______________		______________
	3 ______________		______________
	4 ______________		______________
	5 ______________		______________

List of Complaints:

1. ______________	6. ______________
2. ______________	7. ______________
3. ______________	8. ______________
4. ______________	9. ______________
5. ______________	10. ______________

List of activities:

1. Discuss cause & nature ______________
2. Talking & listening ______________
3. Psychotherapy ______________
4. Family Therapy ______________
5. Family group talking ______________
6. Reassurance ______________
7. Advice ______________
8. Diagnostic procedure ______________
9. Therapeutic procedure ______________
10. Ordered diagnostic proc. ______________
11. Drug prescription ______________
12. Medication (non-pres.) ______________
13. Form or letter ______________
14. Hospitalization ______________
15. Placement in nursing home ______________
16. Ref. for physiotherapy ______________
17. Ref. to chiropractor ______________
18. Ref. to psychiatrist ______________
19. Ref. to eye specialist ______________
20. Ref. to orthopedic surgeon ______________
21. Ref. to gynecologist ______________
22. Ref. to other specialist ______________
23. Ref. to psychologist ______________
24. Ref. to social worker ______________

25. Ref. to p.h.n. ______________________________
26. Ref. to family counselling ______________________________
27. Ref. to speech therapist ______________________________
28. Ref. to cancer clinic ______________________________
29. Follow-up visit arranged ______________________________

APPENDIX XIII

Justification for Including the Disability Variable

Recovery measures, to be meaningful, had to be collected both "before" (at the preliminary interview) and "after" (at the follow-up interview). Initially a questionnaire technique was planned and in the interest of its simplicity, the rather difficult questions regarding disability were not included. When the questionnaire approach was replaced by an interview, any impediment to their inclusion was removed. The most important addition to the preliminary interview was thought to be a measure of outcome which was more objective than the status of symptoms or the subjective global assessment.

Unfortunately, the inclusion of the three questions regarding disability came after the beginning of the data collection. Therefore the patients who entered the study during the first two weeks were not given these questions. The subsample which had data collected both "before" and "after" was defined by a time period two weeks shorter than the time period which defined the total sample of patients entering the study.

APPENDIX XIV

Rules for Identifying Doctor's Response to Worry and Disturbance of Daily Living

A physician was said to have responded to the patient's worry if:

1) any activity was specifically associated in the medical record with the patient's worry.

2) reassurance was an activity for the specific complaint

3) discussion of the cause and nature of the illness was an activity for the specific complaint.

A physician was said to have responded to the patient's disturbance of daily living if:

1) any activity was specifically associated in the medical record with the patient's disturbance of daily living.

2) referral to a social worker was an activity for the specific complaint.

3) referral to a public health nurse was an activity for the specific complaint.

APPENDIX XV

Coding of the Patient's Evaluation of Specific Progress

For each patient, information was gathered at two points in time 1) the preliminary interview 2) the follow-up interview. At each interview each patient was asked how great was the discomfort of each presenting complaint 1) no discomfort 2) small 3) fair 4) a lot. Each patient was also asked how great was the worry, disturbance in daily living and social problem.

Let us continue the explanation using the questions about the patient's discomfort as our example (bearing in mind that the worry, disturbance and social problem are coded in the same way).

For each presenting complaint, difference between the levels of discomfort at the 1st and 2nd interviews was coded as shown below. Any complaint which caused no discomfort at the first interview was automatically coded as "nine" or "inapplicable" because the study focused only on patients who were bothered by a complaint at the first interview.

Coding of the difference between levels of discomfort for each presenting complaint:

CODE	1st Interview	Follow-up Interview	
9	no discomfort	no discomfort	
9	no discomfort	small discomfort	
9	no discomfort	fair discomfort	
9	no discomfort	a lot of discomfort	
1	small discomfort	a lot of discomfort	(i.e. -2)
2	small discomfort	fair discomfort	(i.e. -1)
2	fair discomfort	a lot of discomfort	(i.e. -1)
3	small discomfort	small discomfort	(i.e. 0)
3	fair discomfort	fair discomfort	(i.e. 0)
3	a lot of discomfort	a lot of discomfort	(i.e. 0)
4	small discomfort	no discomfort	(i.e. +1)
4	fair discomfort	small discomfort	(i.e. +1)
4	a lot of discomfort	fair discomfort	(i.e. +1)
5	fair discomfort	no discomfort	(i.e. +2)
5	a lot of discomfort	small discomfort	(i.e. +2)
6	a lot of discomfort	no discomfort	(i.e. +3)

For patients with two or more complaints with discomfort at the first interview the codes shown above were averaged giving an average recovery.

The distribution of the variable called specific progress is shown below for patients with one or more complaints with discomfort. The four categories used in all the analyses are shown. These categories were predetermined to correspond with the following labels: 1) patient got worse 2) patient stayed the same 3) patient improved a little i.e. change of up to one level on the average ($\leq$+1) 4) patient improved a lot i.e. a change of more than one level on the average ($>$+1).

Patient's Evaluation of Specific Progress

	Code	Absolute Frequency	Adjusted Frequency (Percent)
	1.00	1	.4
	1.50	1	.4
WORSE	2.00	21	7.8
	2.50	8	3.0
	2.67	3	1.1
	2.75	2	.7
SAME	3.00	58	21.6
	3.33	7	2.6
	3.40	1	.4
LITTLE BETTER	3.50	27	10.1
	3.60	1	.4
	3.67	2	.7
	3.75	1	.4
	4.00	80	29.9
	4.25	1	.4
	4.33	2	.7
LOT BETTER	4.50	8	3.0
	4.67	2	.7
	5.00	31	11.6
	5.50	1	.4
	6.00	10	3.7
	9.00	31	
TOTAL		299	100.0

APPENDIX XVI

Coding of the Variable Called "Complete Improvement"

As with the patient's evaluation of specific progress, the variable called "complete improvement" derives from the comparison of the level of discomfort, worry, disturbance of daily living and social problems from the first interview with the second interview. However the calculations made on the basis of the codes are quite different from those of the variable "specific progress". The codes are shown below:

CODE	1st Interview	Follow-up Interview	
9	no discomfort	no discomfort	
9	no discomfort	small discomfort	
9	no discomfort	fair discomfort	
9	no discomfort	a lot of discomfort	
1	small discomfort	a lot of discomfort	(i.e. -2)
2	small discomfort	fair discomfort	(i.e. -1)
2	fair discomfort	a lot of discomfort	(i.e. -1)
3	small discomfort	small discomfort	(i.e. 0)
3	fair discomfort	fair discomfort	(i.e. 0)
3	a lot of discomfort	a lot of discomfort	(i.e. 0)
4	small discomfort	no discomfort	(i.e. +1)
4	fair discomfort	small discomfort	(i.e. +1)
4	a lot of discomfort	fair discomfort	(i.e. +1)
5	fair discomfort	no discomfort	(i.e. +2)
5	a lot of discomfort	small discomfort	(i.e. +2)
6	a lot of discomfort	no discomfort	(i.e. +3)

For patients with only one complaint with discomfort, complete improvement was, as one would expect, any code above "3" excepting "9". For patients with more than one complaint with discomfort, complete improvement was defined as the situation where all of the existing discomforts got better. That is, every complaint must have had a code of "4" or "5" or "6" for the patient to be classified as completely improved. The result was two categories of patients, those completely improved and all other patients.

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