# THE ROLE OF INFORMATION IN MEDICAL CONSULTATION

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## ABSTRACT

The main aim of this thesis is to develop a rational view of medical consultation, based on communication as a system of information exchange. The information-processing model provides a framework which is consistent with the existing literature and generates a guiding orientation for the research to follow.

A community field study investigates doctor behaviours which facilitate information flow and attempts to differentiate between good and bad consultations on the basis of such behaviours. Results suggest that information exchange is central to consultation from the patients' point of view and patients' affective perceptions of doctor characteristics are mediated by the information-exchange behaviours. The performance, perceptions and experience of both doctors and patients, within consultation, are also explored using subjective rating scales and general questionnaires. The importance which patients attach to information-exchange behaviours is again evident and strong associations are found between functional information exchange and outcomes of satisfaction, intended compliance, the relationship and perception of the doctor's response. Many differences between doctor and patient perspectives are revealed, providing some insight to the communication difficulties that are experienced.

The results of a survey of British medical schools suggest that more commitment to communication skills is needed, together with meaningful evaluation of skills at all stages of medical education. The impact of patient education, according to the principles of the information-processing model, is also explored in a small scale intervention using a leaflet to encourage more effective input from patients. Results show that when patients organize their information and are encouraged to present it clearly, the communication between doctor and patient is improved.

This suggests that the model is useful from the point of view of both doctors and patients and leads to the concluding study - an evaluation of the model by a selection of doctors. Their judgements are sought in terms of the value, application and educational potential of the information-processing model. Evaluations are generally positive, despite the physicians' tendency to deprecate theoretical initiatives. The information-processing model is considered to have considerable utility in the teaching and guidance of medical consultation.

# INTRODUCTION

A thorough review of the doctor-patient literature prompted the development of the information-processing model of medical consultation. It is clear that despite the obvious value of the theoretical developments of the past four decades, they have failed to adequately address both the structure and process of consultation within a single framework. The information-processing model is designed to be both integrative and comprehensive, to build on existing knowledge and to develop new understanding. It adopts a holistic approach to the theory of consultation in order to develop a rational framework consistent with existing literature and provide a way of going beyond it.

The rationale for the model together with a full description follow in chapter one. The information-processing model provided the structural framework around which to organize the literature review of chapter two. It also engendered the guiding concept for the thesis - that information exchange is the basis of clinical practice and two-way transmission of information is central to the process of medical consultation.

The literature review is comprehensive but not exhaustive since the available literature is truly enormous. However, care has been taken to include both important research findings and studies which illustrate aspects of the information-processing model. The review itself reveals a number of omissions such as consideration of what patients want from doctors; patient views of the shortcomings of the service provided; detailed comparison of the consultation experience of both doctor and patient; and investigation of actual perceptions which may prejudice effective communication. It is the patients' own views which are predominantly lacking as the literature abounds with objective measures and clinical opinions about what does and should occur in consultation.

To paraphrase Kuhn (1970), now is the time for a revolution in thought because the medical establishment is depending too heavily on assumptions and techniques which no longer explain the observed realities of patient discontent. There is little information about what constitutes good and bad experiences or what differentiates one from the other from the patients' point of view.

There is a need for both description of the significance of information exchange in the practice of medicine and empirical investigation of the experiences of patients and their doctors. While scientific objectivity is eminently desirable, indeed it is indispensable in statements of causality, there is a place for subjective assessment in studying medical consultation, particularly by the people the process is designed to serve.

This is especially true in evaluating information exchange for how can one objectively assess how informative a statement is or how much information is sufficient? The best one can do is operationally define an utterance as informative or not and then measure quantity. Unfortunately, this kind of approach does not make allowance for individual differences yet it is individuals who get sick and individuals who consult doctors.

Asking people to make their own judgments of experiences such as medical consultation may be a perfectly reasonable and valid way of performing a check on personal reality. Certainly, the method has face validity as patients must be the final judges of the impression the doctor made and how they felt they were being treated. Indeed, who else is competent to judge if a patient thinks he is being taken seriously or if his information needs are met? Furthermore, it is not enough that a doctor acts as concerned, interested and caring, he must be perceived as being so by those he treats.

A central theme to this thesis is the notion of patients as autonomous people who seek to construct meaningful accounts of their problems; people who seek to draw on the doctor's knowledge and expertise when their own health knowledge is inadequate. Consideration of the patient's perspective will require a reorientation away from the practitioner view of consultation as a clinical performance to a wider perspective which includes the patient as part of the health care team. The scope and complexity of the task requires innovation in study design and a reconceptualization of the features and functions of clinical practice. In the studies which follow, patients will be viewed as the consumers of medical health services while doctors can be seen as fulfilling the role of providers of the required services. This reflects the current ethos of the NHS practitioner service contracts in Britain and the 'user pays' system of fee for service operating in the U.S.A.

The starting point for investigation of consumer demand and experience is a community field study to establish empirically patient requirements for information-exchange behaviours. It also tests the assumption that information exchange is an important process component of medical consultation. Specifically, this study looks at what people think doctors should be doing in terms of information exchange and whether they are succeeding in these areas. The focus is on behaviours which enhance or facilitate information flow in consultation and these factors are also investigated with respect to differentiating between good and bad consultations.

The research then moves to the consultation itself with a study designed to assess the performance, perceptions and experience of participants. Despite the long held belief that 'the doctor knows best', it has become clear that patients are becoming increasingly sophisticated and knowledgeable and are clearly capable of making value judgements about the services they receive. The consultation investigation reported in chapters four to six, relies on subjective judgements by both patient and doctor regarding the content of communication and more specifically the quality of the information transacted during the interchange. Several possible barriers to the free exchange of information are investigated such as attitudes to informing and reluctance to question the doctor. Associations between functional information exchange and the consultation outcomes of satisfaction, intended compliance and change in concern are also investigated.

Good communication is fundamental to good clinical practice and is, therefore, a legitimate and necessary part of basic medical education. Chapter seven presents a qualitative study which surveys British medical schools to critically review both the acknowledgement of the importance of effective communication and the provision of appropriate training. The commitment to quality communication must begin at the level of basic training and continue well into active service. It is not enough to perfect the process of communication without paying attention to the content and it is necessary to undertake meaningful evaluation of the attainment of skills. If there is a negative impact from poor communication in medical consultation it is inevitably the patient who suffers most.

One of the essential features of the information-processing model is the dual responsibility of both doctors and patients for making the consultation work. Patients may well desire active participation but is it entirely the doctor's job to ensure this happens? Chapter eight describes a small scale intervention in which patients are encouraged to provide clear, comprehensive information to the doctor. This is aimed at clarifying the opening of the consultation and handing patients the responsibility for outlining their reasons for attending and their current health needs. By promoting the patient to partnership in setting the agenda and providing the doctor with a clear, unambiguous account of what is required, the consultation will be potentially more effective and satisfying for both parties. The intervention is designed to actively facilitate information flow within the consultation by opening up channels right from the start.

The final chapter discusses evaluation of the model from the doctors' point of view. To be effective the model has to be accepted by doctors as well as patients; implementation depends on both parties viewing consultation as a forum for information exchange. Since the model was constructed with the patients' point of view in mind, some check must be made that it doesn't violate any deeply held professional convictions among physicians. As Barbara Korsch noted in 1989, patients have long valued communication in consultation but resistance to the notion that communication skills are critical to good doctoring has come from the medical side of the equation. While sole commitment to the traditional medical model has decreased over the years, medicine is still far from a consensus with regard to patients as partners in the process of consultation.

It is the author's sincere hope that the studies of doctor-patient communication contained in this thesis are not merely academic. Where choices have had to be made between scientific 'purity' and real world situations, the latter has been the focus of choice. Despite the difficulties of working in the field and the associated threats to research design, it is hoped that investigating real world situations will give the work relevance and encourage change for the better at grass roots level.

# CHAPTER 1

# DEVELOPMENT OF AN INFORMATION-PROCESSING MODEL OF MEDICAL CONSULTATION*

## INTRODUCTION

Doctor-patient communication is an issue central to the provision of effective health care. It is a complex phenomenon (Pendleton, 1983) which has attracted a great deal of interest over the past 30 years. Consequently, there now exists a large body of literature which covers many aspects of the interaction between doctor and patient. It is apparent from the research conducted to date, that where the nature of the relationship between doctor and patient has come under scrutiny it has all too often been found wanting.

There have been reports of widespread dissatisfaction among patients with the quality of the doctor-patient relationship itself (Cartwright, 1964; Lebow, 1974; Locker & Dunt, 1978). Several writers have expressed concern for the human dimension of the doctor-patient relationship (Cassel, 1982; Donnelly, 1988; Spiro, 1987), and improvement in interpersonal communication within the consultation has become a major aim for patient organisations such as the Patients' Association and Medical Advisory Service. Doctors

* The contents of this chapter have previously been presented in abbreviated form to the British Psychological Society, Annual Conference, Scarborough, in a paper by Lesley Frederikson; April, 1992.

themselves are concerned about communication and it has been reported that nearly 25% of consultations in general practice pose doctors with communication difficulties (Pendleton, 1979).

Despite the abundant evidence that the interaction between doctor and patient is fraught with difficulties, there is no widely accepted model or theory to allow adequate integration of the many studies. There is considerable variation in the approach, definitions, methodology, focus and aims, yet the findings are surprisingly similar: "Something is wrong in the process of medical consultation and something should be done to improve it!" Unfortunately, studies to date have tended to concentrate on what is measurable regardless of what is central (Stewart & Roter, 1989b). This has resulted in a collection of views which are both diverse and generally atheoretical in nature. Thus, the instigator of change finds it hard to know where to start or what to do, within the practical confines of the five minute consultation, in order to make any real difference.

There is clearly a need for a more rational view of medical consultation; one which incorporates previous findings and also provides a more theoretical understanding of the process of consultation (Stiles, 1989). The overall aim of this thesis is to develop such an integrative structure and within it express and affirm the doctor-patient relationship as a system of mutual information exchange. The specific objective for this chapter is define the structure and to outline its essential features. This will provide a general orientation for the study of medical consultation and the significance of patient and physician behaviour.

Figure 1.1 presents a schematic flow diagram which places medical consultation within the context of other health care options, including self help and alternative practitioners. It is assumed that patients consult medical doctors when their own health knowledge, and that of their lay reference group, is inadequate for dealing with their problems, or they need a treatment which is only available through a doctor (MacIntyre & Oldman, 1977). The concept of health understanding has been explored by Pendleton (1983) and he explains it as a composite of a person's attitudes and beliefs about health, illness and medical treatment. Zola (1972) has stressed the importance of people's social environment and points out that lay referrals and support systems play a significant role in health care decisions.

The decision to see a doctor implies that the physician possesses specialist expertise unavailable to the patient from any other source; thus the consultation places the patient at a point of access to specialist knowledge. In this context the consultation can clearly be viewed as a process of information exchange between medical expert and client (Tuckett, Boulton, Olson & Williams, 1985).

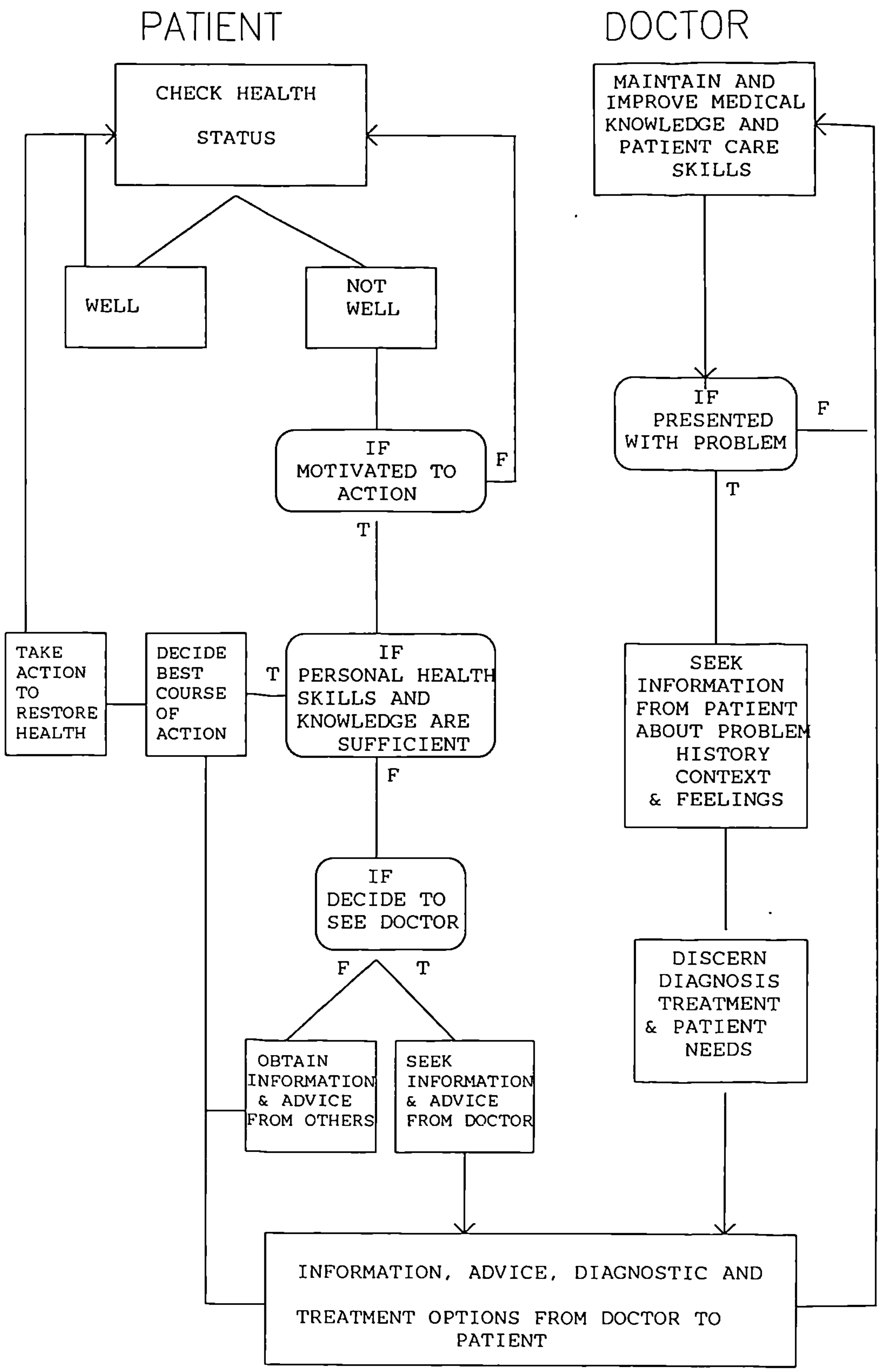


Figure 1.1. Schematic flow diagram of doctor and patient contextual actions with respect to consultation and the role of information.

There can be no doubt that the communication of information is an issue of central importance to the interaction between doctor and patient. Furthermore, information is a recurring feature of the literature on doctor-patient communication; one of the few common factors among the many diverse approaches. Indeed, the Little Oxford Dictionary defines communication as the 'imparting or exchange of information', while information is 'that which is told'.

Clearly, the flow of information within consultation is important for both participants, and the process relies heavily upon what each 'tells' the other. Pendleton, Brouwer and Jaspars (1983) report that doctors do have problems in communicating with patients and that 79% of their problems involve the transmission of information. Research has also shown that experienced medical practitioners may fail to accurately diagnose medical problems or may not even notice them at all due to inadequate communication of information between the patient and themselves (Maguire, 1984; Marks, Goldberg & Hillier, 1979).

From the patient's perspective, it is often the doctor's communication of information which poses a problem (Waitzkin & Stoeckle, 1972). Certainly, observational studies have indicated that patients are more dissatisfied with their doctor's performance in imparting information than with any other aspect of medical care (Cartwright, 1967; Kincey, Bradshaw & Ley, 1975; Cartwright & Anderson, 1981).

Tuckett et al. (1985) discuss an approach to sharing ideas in medical consultation and outline five general arguments for its priority among the tasks of a physician:

1) The recognition that attending to the provision of information, reassurance and understanding are intrinsic and important parts of therapy.
2) Recognition that the patient's cooperation in carrying out advice cannot be taken for granted and information may be necessary for persuasion.
3) Recognition that the outcome of medical treatment is a multi-dimensional and subjective matter, thus the patient's view is relevant.
4) Recognition that individuals selectively seek help with symptoms that they experience and seek the knowledge to deal with them.
5) Recognition that patients are, in a sense, consumers of medical service and require information and autonomy in decision making.

What sets out to be a commentary on 'sharing ideas' becomes, increasingly, a treatise on information exchange and the problems and limitations surrounding the giving of information.

From the forgoing, it is concluded that information exchange is central to medical consultation, it is what the process is all about and information is itself the primary feature of the doctor-patient interaction. This preliminary conclusion gives rise to the main theme of the proposed model - that functional information exchange is the basis of good clinical practice. All other aspects of medical care flow from this central tenet.

To conceptualize consultation as a procedure of information flow or exchange provides a dynamic and functional perspective for aiding analysis (Wasserman & Inui, 1983). At the level of content of communication, the information exchange is essentially denotative and is transmitted linguistically (Bateson, 1972). At the level of the relationship, information flow extends to the social and affective, with linguistic communication supplemented by paralinguistic and kinesic transmission. Although it is recognised that information flow can include that generated by non-verbal means such as expression, posture and gesture, much of the work of the consultation is oriented by what the doctor asks and hears and by what the patient reports. As Mishler (1984) notes, diagnosis is achieved through the interpretation and organisation of observations, predominantly guided by the talk between doctor and patient.

## DESCRIPTION OF THE INFORMATION-PROCESSING MODEL

The model depicted in figure 1.2 is intended to integrate the best features from a number of existing models. It incorporates the input-process-outcome structure of Pendleton (1983) and takes account of the personal, social and psychological attributes of both doctor and patient (Balint, 1968; Engel, 1977). From these arise the raw material of the consultation and the influences that will shape the process of the interaction.

The model takes account of the different ways consultation can be approached. The doctor may adopt an authoritarian approach, believe that the patient has a responsibility for his/her own health, or consider illness prevention to be an important part of health care. Similarly the patient may desire a negotiated plan, defer to the doctor's knowledge and healing power, or need social support in a time of stress. These are all seen as input variables that need to be considered and incorporated within the concept of information exchange.

Outcomes are the products or consequences of the process, with both immediate and long term effects (Beckman, Kaplan & Frankel, 1989). In a sense, they also feed back into the process through the ongoing cycle of medical care (Inui & Carter, 1985), thus, can modify or consolidate attitudes and expectations.

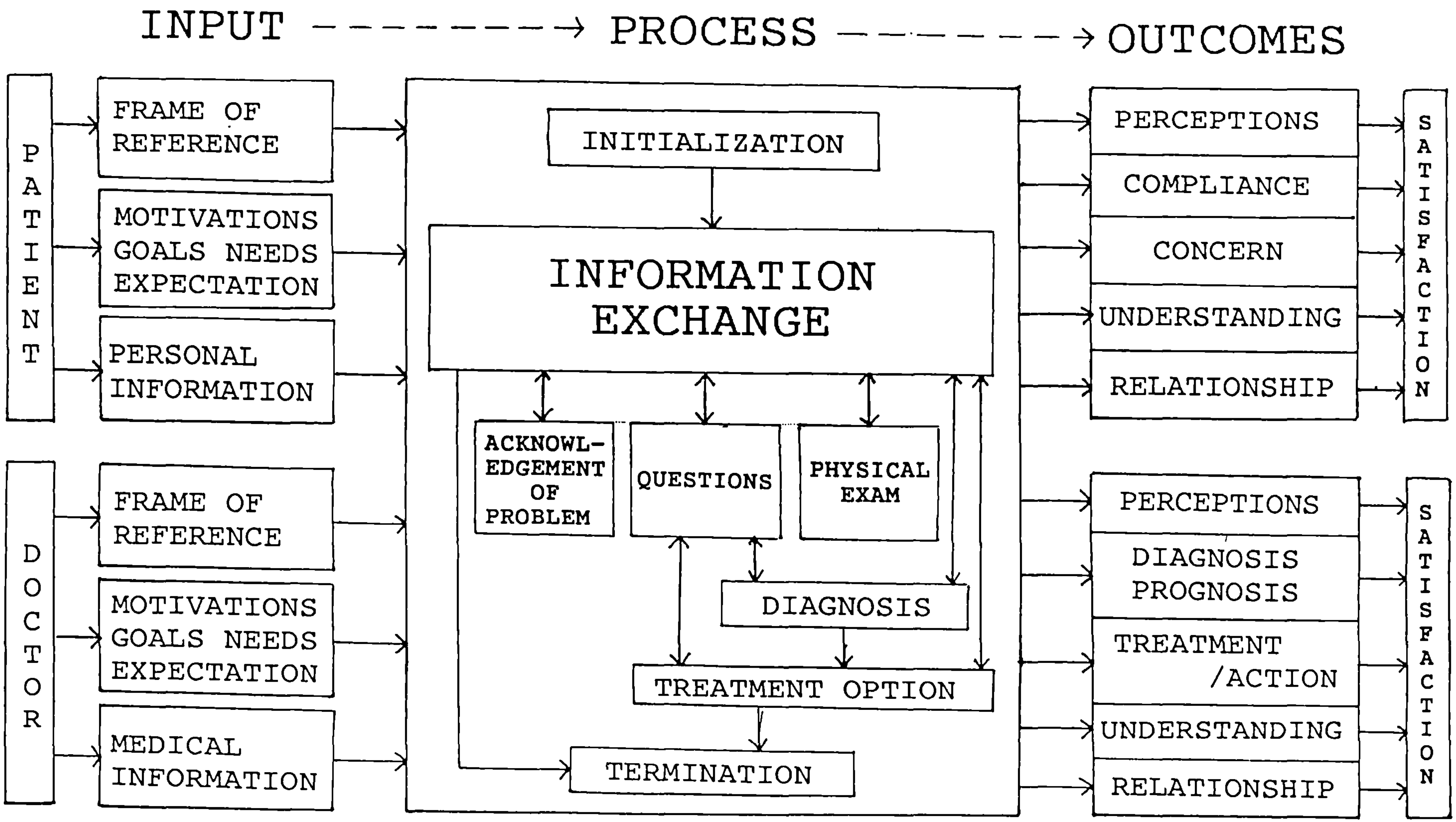


Figure 1.2. Information-processing model of medical consultation.

Input

Both doctor and patient bring to the interaction information which is material to the success of the consultation. The doctor has at his disposal a specialised body of knowledge pertaining to disease, dysfunction and care of the sick. This medical information is largely scientific knowledge, which by its nature is generalised and the doctor is aware that disease occurring within his patients may have a different presentation, course and outcome depending on differences in individuals and their bodies (Cassel, 1986). The patient brings information about his condition, the symptoms, what he feels like and the impact illness is making on his life. He also knows about his environment, culture and lifestyle, all of which can contribute to the state of his body. As the relationship develops, they can begin to share information about each other.

The most obvious mutual goal of the consultation is the restoration of health and function (Parsons, 1951; Finn, 1986), and this is dependent on accurate diagnosis and treatment. The patient's ability to provide information to the doctor affects the accuracy of the history taken during the consultation (Waitzkin & Stoeckle, 1972), and this has an impact on the subsequent diagnosis and treatment.

A major patient goal is increased health understanding (Reader, Pratt & Mudd, 1957; Balint, 1968; Reynolds, 1978); the preferred source of health information, for many people, is their doctor (Keown, 1980) as such information is medically mandated (Strong, 1977). Another patient goal is reduction in anxiety, (Briscoe, 1987; Lydeard & Jones, 1989) and once again information is the means by which anxiety can be addressed. Doctors are expected to know what is the best thing to do in the face of any illness; information reduces uncertainty and uncertainty is a characteristic of illness which gives rise to anxiety (Reynolds, 1978).

Pendleton (1983) proposes that important aims for doctors are to be able to influence the patient's attitudes and behaviour, to elicit information from the patient and to provide information to enable patient understanding. Korsch and Negrete (1972) showed quite plainly that the extent to which mothers follow medical advice for their children depends on how well the doctor fulfills their expectations for information and explanation about the illness. Obviously, to achieve the goals of patient co-operation and effective information flow, the doctor would need to utilise communication skills in establishing a two-way process of information exchange.

When considering input to the consultation some attention must also be given to the participants' 'frame of reference' (Parsons, 1951). Both patient and doctor must be seen in the context of their personal, demographic and social environments. It has been consistently said that the process of becoming a doctor, via institutionalised training in medicine, itself produces a conceptual shift in the way students (and therefore doctors) view disease, suffering and the management of patients (Becker, Greer, Hughes & Strauss, 1961; Groopman, 1987; Donnelly, 1986).

In many ways the concerns, orientation and emphasis of doctors, with respect to medical consultation, vary from those of patients. This has led to the suggestion that the two parties, in fact, work to different agendas in the consultation (Levenstein, McCracken, McWhinney, Stewart & Brown, 1986). Differences are especially pronounced in the areas of what is considered common knowledge and what merits explanation, it has been further noted that there are differences in the definitions and terms utilised by doctors and patients (Miller, 1978; Pendleton, 1983).

In each of the general areas of input represented on the model (information; motivations, goals, needs and expectations; and personal frame of reference), there is potential for conflict between the participants.

<u>Process</u>

Central to the model (figure 1.2), as in real life situations, is the process of consultation. The process itself is bounded by the social conventions of opening and closing the interaction (initialization and termination). These include the greeting and seating of participants and initiatives to conclude the process at a necessary or appropriate time (Stiles, Putnam, James & Wolf, 1979; Carter, Inui, Kukull & Haigh, 1982). Between these two markers, the process represented is essentially one of information exchange which extends to acknowledgement of the problem, specific questioning and physical examination as and when called for by individual cases. The structure of the model is deliberately recursive, driven by the information exchange and presents a flexible, need driven, participative approach rather than a rigid phase passage one. The idea of standard consultations, with set stages, is far too simplistic for dealing with the complexities of the doctor-patient interaction.

Intrinsic to the concept of information exchange is the notion of information processing by the participants. This subsumes the perception, selection and understanding of informative items; a tremendous amount of processing is necessary before any information which is available in a consultation can be utilised by the people who receive it (Engel & Blackwell, 1982). Information processing can be disrupted at any stage and many units of information may drop out of the system altogether.

The study by Korsch and Negrete in 1972 showed that this does, in fact, happen within medical consultations and can have a serious impact on outcomes. Some of the patients studied were so preoccupied with their own dominant concerns that they failed to attend fully to the doctor and later reported that the doctor had failed to conduct an adequate examination. Considering the doctor to have been inadequate in this respect caused the patients to feel dissatisfied and raised problems with respect to compliance. Analysis of recordings of the consultations revealed that, in fact, the physician examinations were clinically adequate, yet they still had failed to satisfy the patients. This example shows that patient perception of a physician response may differ from a doctor's view and underlines the importance of information which would allow the doctor to understand patient needs. The issue of understanding is the basis of many communication problems and a common complaint which patients make of doctors is that they don't listen and they don't understand (Paget, 1983; Budd, 1989; Locker & Dunt, 1978).

The process depicted in the model readily incorporates the patient-centred ideology of Levenstein et al. (1986) and Middleton (1989), with the information exchange involving exploration of doctor and patient agendas. The formulation allows for both doctor and patient to ask specific questions and to explain their relevance and reasoning. The physical examination could be initiated by the doctor or by the patient offering the affected part for scrutiny. Similarly, diagnostic proposals could be offered by the patient - "I am worried that it is my heart", or by the doctor - "No, your heart seems fine, blood pressure is normal; I think it is probably indigestion". Treatment options can also be generated by either party, with patients expressing a desire for certain drugs or procedures and doctors making their own recommendations.

The flexibility of the proposed model ensures that it can accommodate a wide variety of styles including the more doctor-centred ones identified by Byrne and Long (1976). The model also includes outcomes for both parties which can be used as measures of 'success' for individual styles. In this way, a prescription for mutuality and negotiation can be tested by measuring change in outcomes as the style moves from doctor-centred to patient-centred.

Outcomes

The results or consequences of the process of consultation are generally termed outcomes. Those depicted in the model are derived from the literature and include the two most commonly studied patient outcomes - compliance and satisfaction. Also included are concern and health understanding (Pendleton, 1983), the relationship (Stankaitus, 1987; Siegler, 1982) and perceptions of the doctor's response (Wasserman, Inui, Barriatua, Carter & Lippincott, 1984; DiMatteo, Prince & Taranta, 1979).

Satisfaction as a distinct outcome has been studied extensively; relationships to a number of input, process and outcome variables have been reported. This research has revealed the complexity of factors contributing to satisfaction but since methods and definitions vary from study to study it has been difficult to interpret the dynamics involved. Locker and Dunt (1978) noted that patients usually report being satisfied with medical care overall but when asked about specific items satisfaction varies. Zyzanski, Hulka and Cassel (1974) propose a composite scale for measuring satisfaction in an attempt to rationalise its composite nature. Building on this idea, the theoretical model (figure 1.2) represents satisfaction as a cumulative outcome, a result of the process of consultation but mediated in some way by all the other outcomes. It is important to note that in the context of the information-processing model, satisfaction is viewed as a bipolar continuum with dissatisfaction at the negative end.

Intuitively, it is accepted that there must be some kind of weighting formula which determines the overall level of satisfaction and this is suggested in the literature (Stimson & Webb, 1975; Locker & Dunt, 1978) but the relative contributions can only be guessed at. Clearly, a negative rating on any of the constituent outcome measures would diminish overall satisfaction; the yielding of a negative level of satisfaction would be interpreted in terms of dissatisfaction.

The results of a study by Reader, Pratt and Mudd (1957) showed that information was important to patients with 66% requiring information to allay fears that they had a serious disease and 72% wanting information to increase understanding of their condition. Brody and Miller (1986), writing some 30 years later, report that almost all of the patients in their study were concerned that their problem was serious and might lead to even more serious problems later on. Reduction in concern was a significant outcome of consultation and the patient's rating of the discussion of health-related concerns and change in concern were the two best predictors of symptom status one week later.

It has been suggested that a patient's confidence in the doctor's diagnosis will be greater when it accounts for all the points of information that the patient already knows (Strong, 1977). The doctor demonstrates competence by seeming to take the patient's information into account and fit it into some suitably scientific framework. This concept clearly ties in with the idea of so called 'good' doctors who appear to take the patient's input seriously and respond appropriately. It also suggests that an important outcome for the patient is his or her perception of the doctor's response.

The consultation has outcomes for the doctor too, although these have been less well defined and studied than for patients (Pendleton, 1983). Doctor-based outcomes are seen as being, in the main, vocation based. The satisfaction arising from each individual consultation will contribute to the global level of job satisfaction but there is no doubt that the information a patient provides has an effect on how well the doctor can do his job. Similarly, patient responses and the doctor-patient relationship will contribute to doctor satisfaction (Melville, 1979; Roberts, 1986).

Two of the tasks of a consultation are to make an accurate diagnosis and prescribe appropriate treatment (Schofield & Arntson, 1989). Thus, eventual diagnosis and treatment choice are products of the consultation and are outcomes related to the doctor's satisfaction (Melville, 1980). Cartwright and O'Brien (1976) noted that doctor satisfaction was more likely to occur when the conversation time was less than five minutes and the patient asked no more than one question.

The concept of doctor outcomes was extended beyond satisfaction by Pendleton (1983) who acknowledged some must exist but labelled them as unknown. Specific doctor outcomes included in the information-processing model are reflections of patient outcomes but are oriented toward the physician's tasks and aims.

## CONCLUSION

The information-processing model is intended to provide a useful structure for viewing and identifying where problems occur within doctor-patient communication. As noted earlier, there is potential for conflict at the level of the input variables. Differing orientations, perspectives, social norms and belief systems can give rise to problems within the interaction making clear communication difficult (Freidson, 1970; Suchman, 1972; Cartwright & O'Brien, 1976; Good & Good, 1981; Hunt, Jordan & Irwin, 1989; Middleton, 1989).

Within the existing literature a number of communication problems have already been identified; the model provides a map for locating where in the process these problems occur. The area of information exchange is a good example - this relies on doctor and patient providing the information needed by the other but also implies acceptance of information into the system. Thus, there are two categories of information-exchange problem; firstly, withholding of information by doctor or patient (Barsky, 1981; Tuckett, Boulton, Olson & Williams, 1985; Quint, 1972; McIntosh, 1974; Boreham & Gibson, 1978; Keown, 1980; Pendleton, Brouwer & Jaspars, 1983) and secondly, the resisting or blocking of information input (Maguire, 1984; Byrne & Long, 1976; Maguire & Rutter, 1976; Rosser & Maguire, 1982).

Further problems have been identified in the area of questions within consultation. Criticism has been made of doctors for relying too heavily on closed questioning (Fletcher, 1980a; Roter, Hall & Katz, 1987; Hall, Roter & Katz, 1987; Coulthard & Ashby, 1975; Woolliscroft, 1988) and being unreceptive toward patient initiated questions (Roter, 1977; Frankel, 1986; West, 1983; Boreham & Gibson, 1978; Stiles, Putnam & Jacob, 1984;). There is also evidence that acknowledgement of problems within consultation is not always straightforward or even complete (West, 1976; Frankel & Beckman, 1989).

Lastly, difficulties can occur with respect to diagnosis and treatment with either doctor or patient failing to disclose options they are considering (Reynolds, 1978; Mason, 1991; Tuckett, Boulton, Olson & Williams, 1985) or lacking commitment to options proposed by the other (Atkinson, 1977; Tuckett, Boulton, Olson & Williams, 1985; Hunt, Jordan & Irwin, 1989). In many cases the problems identified have also been associated with poor outcomes.

An example of conflicts arising from differing perceptions of events is provided by Klein (1973). He reports a case where a mother dropped her nine month old daughter on the floor and then rushed her to the nearest doctor's surgery because the baby was crying and in 'obvious' pain. The mother was seen but left after an examination was apparently refused. The baby was then taken to another doctor who examined the child and informed the mother that there was nothing wrong. The case was reported to the District Executive Council and in explanation it was submitted that a visual and aural examination had been conducted in the first instance. It had been noted that the child was crying lustily, had no loss of consciousness, had normal colour and her limbs were moving in the normal way. In addition there had been no obvious bruising, swelling or bleeding on her head or face or from her mouth. What the first doctor did not notice or respond to was the worried mother, guilty about dropping her child and desperately needing reassurance that no damage had been done. If he had simply bothered to explain his observations to the mother she may well have been more satisfied.

Regarding diagnosis and treatment, West (1976) describes the actions of a mother whose 14 year old daughter was diagnosed as epileptic. Medication was prescribed and taken for a short period during which the girl experienced no symptoms. The mother then simply stopped giving the medication to her daughter who still remained symptom free. For the next five years the mother regularly went to the GP for repeat prescriptions for medication, thus keeping up the appearance of compliance with a regimen she obviously felt was inappropriate.

Besides aiding the understanding of problems, the information-processing model also provides a structural framework for the integration of previous recommendations for effective consultation. The concept of information exchange encompasses a range of physical, social, psychological, affective and communicative variables all relevant to the interaction (Engel, 1977; Balint, 1968; Pendleton, 1983). The description and structure of consultation readily incorporate patient centred consulting (Byrne & Long, 1976; Levenstein, McCracken, McWhinney, Stewart & Brown, 1986; Middleton, 1989), but promotes the needs of the doctor as well.

An important feature of the model is its utility in mapping any kind of consultation since the structure allows for both repetition and omission of actions. This is especially useful since it is relatively common for patients to present multiple problems in general practice consultations (Bull, Roger, Smith & Mayer, 1987; Pendleton, 1983). Similarly, visits for simple and straightforward reasons such as vaccinations or repeat prescriptions can be incorporated within the model. Information about the desire for a prescription, say, initializes the process. Further information exchange or questioning may (or may not) occur as a decision is reached about providing the prescription or perhaps changing the drug or the dosage.

The tasks of the consultation as outlined by Pendleton, Schofield, Tate & Havelock (1984) fit neatly into the concept of information exchange and suggest a useful means of measuring the quality of the information flow. In this way the model provides a structural framework to enhance the valuable contribution already made to teaching consultation skills using these tasks. The social skills approach, with its emphasis on learned behaviours to improve communication, can also be integrated within the proposed model. The process orientation of skilled performance is retained by the model and the cognitive aspects are enhanced by acknowledging that attention must be paid to the content of communication as well as the style. The two themes are complimentary and the model provides the structure to guide the learning and use of interpersonal skills in the doctor-patient encounter.

The structure of the information-processing model suggests that there will also be value in educating patients to engage in effective information exchange and to take responsibility for some part of the process. The difficulties doctors face are often compounded when patients do not provide appropriate or timely information (Byrne & Long, 1976; Stewart, McWhinney & Buck, 1979; Browne & Freeling, 1976).

It is the educational potential of the model, together with the means for measuring success that raises the information-processing model above a mere synthesis and gives rise to the testable aspects of the model. It is proposed that if:

1) Patients had a clear idea of consultation as an

information-processing, decision-making forum for the doctor and themselves and

2) They explicitly state why they have come, what they want from the process and how they view the problem and potential outcomes and

3) They provide all the relevant information for the process

and if

4) Doctors openly accept and encourage patient input and

5) They respond in congruent terms and

6) They explain their methods and actions, share views on what can be considered and what can be ruled out and

7) Admit the limitations of medical science

Then the information flow would be truly effective, the process would be more successful and the outcomes would be more appropriate for both parties.

Furthermore, if information flow is, in fact, central to the doctor-patient interaction then the presence or absence of actions to facilitate or enhance information exchange in consultation should provide a means of differentiating good experiences from bad ones.

In applying the model, it is clear that a number of specific mandates exist including mutual awareness of and responsiveness to the information needs of the other party in consultation. It is important that information input be explicit and the process work toward merged perspectives regarding the aims and objectives of the interaction. Patients must take responsibility for outlining motivations, needs and aims and accept the limitations to the doctor's craft. Furthermore, the model implies doctors must give respect to patients as people and recognise their problems in terms of impact and meaning as well as dysfunction.

Doctors' attempts at information flow are often inadequate, particularly in the exposition - the explanation of diagnosis and plan for action - which often fails to convince or satisfy patients (Fletcher, 1980b). It requires a clear view of relevant matters to present an organised and unambiguous explanation to patients. "Such clarity may involve facing difficult and worrying ideas and feelings which it sometimes may be tempting to 'fudge'" (Tuckett et al., 1985; p 215). If physicians were to operate according to the information-processing model, such temptations to 'fudge' may not seem so compelling. In addition, if patients were to take up their responsibilities in consultation and towards their own health much of the pressure currently on doctors may be relieved. Doctors are people too, and patients may be causing unnecessary occupational stress by continuing to treat them as mind readers, seers, (or even worse) as gods.

One of the essential features of the proposed model is this balance between doctor and patient in terms of influence and responsibility for the success of the process. The emphasis is on duality of process in consultation and the mutual responsibility of participants to facilitate information exchange. The schematic representation of the consultation process (figure 1.2) provides a convenient summary for guiding practice and teaching. Furthermore, a variety of specific approaches can be utilised within the descriptive framework, thus true integration of previous research becomes possible.

# CHAPTER 2

# LITERATURE REVIEW

## INTRODUCTION

An ancient description of the doctor credited him with being a guide, philosopher and friend (Norell, 1987). Obviously the role of the doctor has changed and evolved since ancient times but the last 50 years have in many ways been revolutionary decades for medicine leading to new priorities and new agendas. Along with the scientific advances of medicine the tone and philosophy of medical care has changed both within the profession and in public expectations and attitudes to it. In earlier times a doctor's decisions were rarely questioned; patients now are frequently sceptical and may doubt the doctor's motives and judgement. People now desire medical knowledge (Jacobs, 1989) but they don't necessarily aspire to be doctors.

Through all of these changes, the doctor-patient relationship has come under pressure to adapt but according to Cassel (1986) doctors themselves have a bias toward conservatism and display an excessive resistance to change. Most remain committed to the Hippocratic tradition and the principle of beneficence assuming the right to unilaterally decide what is best for the patient (Teff, 1992). However, the traditional concept of the patient as passive recipient of medical care has given way to a more consumerist perspective as patients challenge physician power (Haug & Lavin, 1981). Pendleton and Hasler (1983) report that patients have two criteria for judging a consultation to be good. One is good clinical decision making and the other is good communication This was described as the doctor listening to the patient and providing information and explanation. Indeed, Wilson (1980) defines communication as the process of sharing information with another person so that he understands the message that was meant to be sent.

The following review of literature regarding doctor-patient communication is structured according to the input-process-outcome model presented in chapter 1. This formulation is consistent with Donabedian's (1966) view of structure, process and outcome as a chain of antecedent events followed by intermediate and longer term ends occurring within the context of the provision of medical care. The organization is a logical extension of the ideas put forward by Pendleton (1983) and attempts to provide a basis for the more systematic approach in doctor-patient literature which he proposes is required.

## INPUT TO THE CONSULTATION

Both doctor and patient provide input to the consultation in terms of their frame of reference, motivations, needs, expectations and goals for the consultation and the specific information they bring to the encounter. In essence, all input can be seen as having informative value and utility in aiding clear communication.

Input - Frame of Reference

Frame of reference is a term used to describe the orientation of an individual to a situation which includes others (Parsons, 1951). This incorporates the definition of the situation, the person's view of the rights, obligations and standards pertaining, plus the institutionalized value patterns which predominate. These all contribute to a generalized orientation to the situation.

Doctors, in carrying out their occupation, are bound to develop their own way of looking at the problems which patients bring (Freidson, 1970). These perceptions and interpretations of symptoms and illness will differ from those of patients (Suchman, 1972a). Patients are likely to be more concerned with their painful and disruptive symptoms than the organic basis for them; they desire a return to healthy functioning rather than healthy physiology. Doctors on the other hand are more likely to be interested in the clinical illness itself than the accompanying discomforts and social consequences. Both doctor and patient may seek to achieve appropriate management of the problem in hand but often have quite different perspectives on both problem and management. Freidson (1970) proposes that these differences in perspective are a function of both occupational experience and specialized knowledge, thus the relation of a physician to his clientele is inherently problematic.

It is obvious that for patients, illness is an individual experience and the medical profession will never be able to standardize patients (Blumgart, 1969). Account must be taken of individual differences and each patient must be seen in the context of his or her demographic, social and psychological perspective (Pendleton, 1983). Individual characteristics such as health beliefs, locus of control and broad attributions affect consultations and have been shown to influence 'health behaviours' (Becker, Haefner, Kasl, Kirscht, Maiman & Roenstock, 1977).

There has been a growing interest in the impact of belief systems on doctor-patient communication through an implicit understanding that doctors and patients hold differing beliefs about illness (Conrad, 1985; Good & Good, 1981; Kleinman, 1980). In a study to investigate the term 'disease' as used by medical and non-medical people it was shown that there is, in fact, considerable ambiguity (Campbell, Scadding & Roberts, 1979). It seems that lay people consider illness a disease only if it appears to be caused by a living agency while doctors generally adopted a wider definition encompassing a variety of causative factors against which the doctor can intercede with appropriate treatment.

Feinstein (1972) observes that in decoding patient symptoms the physician engages in a process of converting observed evidence into names of diseases. For the patient, symptoms are grounded in the individual's social and cultural realities (Good & Good, 1981). Williams and Wood (1986) suggest that patients' beliefs about etiology and illness are components of a broader interpretive process. From semi-structured interviews with 29 rheumatoid arthritis patients, an exhaustive categorization of causal beliefs was carried out. Their analysis revealed that many patients developed causal models, sophisticated attempts to identify and integrate multiple causes of their condition, in a manner not dissimilar to that of doctors. A fundamental difference, though, is that lay beliefs are selective composites of past experiences which provide a sensible story to account for the patients' current condition. When judged from the perspective of a scientific framework these lay beliefs often appear irrational to doctors. However, they generally form part of a valued framework and as such are resistant to 'correction' by clinical explanations that separate symptoms from life experience (Williams & Wood, 1986).

The persistence of patient explanations of symptoms was also evident in a more recent study of 23 women patients (Hunt, Jordan & Irwin, 1989). The longitudinal design of the study allowed for observation of changes in patients' thinking over time and it was clearly demonstrated that illness explanations are dynamic entities which patients rework to adapt to the exigencies of everyday life. Diagnosis and treatment advice are interpreted and elaborated by each individual and integrated into prior concepts of their illness. Though most of the women in the study did undertake modifications of their illness explanations over a 4 month period to accommodate the doctor's view, there was not one instance of a patient simply dropping her own assessment and adopting the medical explanation. Furthermore, where patient and doctor views are inconsistent patients often find their own versions more acceptable.

Believing the ability of doctors and patients to communicate depends on accommodation of each other's perspective, McKinlay (1975) undertook an investigation of actual and perceived comprehension of medical terms among 87 lower working-class maternity patients in Scotland. The physicians in the study consistently and markedly underestimated the level of word comprehension across all respondents. Furthermore, they tended to use words in the consultation which they didn't expect patients to understand.

An earlier study by Pratt, Seligman & Reader (1957) revealed that physicians also underestimated patients' level of knowledge of common diseases by at least 20 percent. Interestingly, those physicians who seriously underestimated the knowledge of patients tended to have more limited discussions with patients about their problems than others who more accurately evaluated patients' knowledge or overestimated it. Other studies have demonstrated that doctors also typify patients on the basis of socio-economic class regarding their capacity for processing and desire for information (Cartwright, 1964). Higher social class and educational level appear to create the impression of an ability to understand medical explanations and perhaps desire for them. Certainly, it has been shown that doctors communicate more with these patients (Bain, 1976; Pendleton & Bochner, 1980).

Keown (1980) found that both doctors and patients believe the doctor is the most preferred source of information about drugs. Unfortunately, their study also showed that doctors were not providing much information. Only 38 percent of people receiving a prescription for a drug also received information about it. Regarding written information for drug users, 95 percent of the general public group definitely supported the idea but only 64 percent of the doctors were in favour.

Mathews (1983) notes that one reason for the problematic nature of clinical communication is lack of congruence between frames of reference regarding what information ought to be shared. Freidson (1970) notes that as far back as the Hippocratic Corpus doctors have considered patients to be too ignorant to comprehend and too upset at being ill to use information in a rational and responsible way. Ignorance has also been attributed to doctors - as an explanation for shortcomings in the care of cancer patients in the community. Rosser and Maguire (1982) point out that ignorance of the problems faced by patients and their families is an important factor but argue that deficiencies in care also arise from the conceptual and structural framework within which doctors operate.

Input - Motivation, Needs, Goals and Expectations.

MOTIVATION for visiting the doctor may seem obvious - people go to the doctor because they are sick! In reality the situation is not nearly so clear cut according to Frankel (1983). Referring to the 1980 results of the National Ambulatory Medical Care Survey (NAMCS), Frankel points out that 51% of consultations in that year were for conditions the doctors categorized as 'no problem' or 'not serious', and this amounts to nearly 291 million patients who consulted doctors even when they appeared to be healthy.

Doctors frequently complain about the numbers of consultations devoted to 'trivial' complaints (Cartwright, 1967; Mechanic, 1970). Yet Davis and Horobin (1977) note that there are many instances of serious illness which are not reported and thus remain untreated by doctors. This suggests that illness per se is not the only reason for seeking medical consultation and in some cases illness is not even considered sufficient reason for seeking medical aid. Data drawn from medical care studies in U.S.A. and Britain suggest that only one in three people experiencing an illness episode will in fact consult a doctor (White, Williams & Greenberg, 1961). It seems that neither the presence of symptoms, how obvious they are, their actual or perceived medical seriousness, nor amount of discomfort they generate differentiate between episodes which are and are not presented for medical treatment (Zola, 1972).

The decision to consult is often reached after resolution of the conflict between troubling the doctor over something that may disappear spontaneously and delaying the act of consultation, perhaps being the worse for it. Askham (1982) notes that becoming a patient is a two-stage process: firstly, the lay person must decide to consult a doctor; and secondly, the physician must accept and admit him or her as a patient. Mechanic (1962) coined the term 'illness behaviour' to cover the variation in ways people perceive, evaluate and act in response to physical and psychological discomfort.

Ingham and Miller (1982) propose that while symptom severity is a contributory factor in initiating consultation it is in fact mediated by both the personal distress associated with symptoms and the rate of their onset. Motivation to attend a doctor is often provided by a 'specific trigger' (Zola, 1973) which forces the patient to seek medical aid or is used as a ticket of entry to see the doctor. Zola (1973) found that where the physician paid little attention to the patient's 'specific trigger' there was the greatest likelihood of the patient breaking off treatment. This suggests that doctors must consider the patient's motivation to attend as part of the information available to him.

A recent study investigating pre-disposing variables associated with the decision to consult a doctor showed some interesting differences between the motivations for men and women (Briscoe, 1987). Men consulted less often overall, were motivated by health factors and showed a tendency to attend for a medical certificate. The women attended more frequently (nearly twice as often) and had multiple complaints. Briscoe suggests women may be more inclined to consult with vague symptoms or to seek reassurance because they are psychologically pre-disposed to make more effective use of their doctor. Roberts (1985) also noted that women in all age groups consult their doctor more than men and those in the 15-45 age group consult twice as often as their male counterparts. However, it is during these years that women are particularly likely to attend for contraceptive or pregnancy care.

Many people present to a doctor with apparently minor symptoms because they are concerned about the possibility that the symptoms may be a precursor of serious illness (Taylor, Burdette, Camp & Edwards, 1980). Lydeard & Jones

(1989) found that the decision to consult with dyspepsia was not explained by differences in self-reported severity of symptoms or frequency of symptoms but there were striking differences between consulters and non-consulters in terms of concern. Seventy-four percent of consulters expressed concern about the implications of their symptoms compared with only 17% of non-consulters. Patients' motivations may be based on fears or even misapprehensions about their condition, and doctors cannot afford to ignore the importance of looking beyond the presenting symptoms (Lydeard & Jones, 1989). Similarly, it is in the patients' interest to make the information explicit since the doctor can more intelligently intervene in the patients' efforts to cope with a disorder if he has the knowledge and awareness of the patients' views of health, sickness, expectations and reasons for seeking help (Zola, 1973).

Studies of physician motivations with respect to the consultation are rare with more attention being paid to the reasons for becoming a doctor and choice of speciality (Becker, Greer, Hughes & Strauss, 1961). It is commonly accepted that many doctors have altruistic motivations such as the desire to help people but one empirical study conducted in America has revealed that undergraduates aspiring to the major professions, including medicine, are also interested in the high income and social prestige they expect from their professional careers (Davis, 1964).

Schwartz, Soumerai & Avorn (1989) explored physician motivations for drug prescribing and their study provided some insight to physician motivations in the consultation. Patient demand for drugs was the most frequently cited motivation for non scientific drug prescribing, that is prescribing drugs which were not strictly medically appropriate (46%), whilst desire for placebo effects were identified in 24% of cases. The prescription is a symbol of the doctors desire to help his patient and many physicians in the study expressed a need to 'do something' for their patients (Schwartz et al, 1989).

> "The aim of the practitioner is not knowledge but action, and while successful action is the aim, the tendency is to assume any action at all is better than none." (Freidson, 1970; p 98)

NEEDS: Success or failure in establishing a meaningful relationship between physician and patient depends largely upon how fully the patient perceives, recognises and communicates his health needs and how well the physician understands them (Bruhn & Trevino, 1979). Unfortunately full disclosure in a frank open manner is not a regular characteristic of doctor-patient dialogue. Bruhn & Trevino (1979) believe that it is both possible and desirable that the patient provide information about health needs and the doctor use the information to make careful assessment of why the patient came and what he expects. They group health needs into four categories: identification and verification (what is wrong); knowledge (what caused the problem and what will happen next); treatment (means of getting well; and support (talking to someone who understands); each of which requires action on the part of the doctor.

In a small scale study evaluating the usefulness of a questionnaire to raise awareness of patient health needs, doctors and patients responded favourably to the improved information sharing. The patients felt that exploration of their needs indicated an interest in them as people. However, the smallness of the sample limits the generality of the findings and the instrument needs to be tested for reliability and validity. In addition, use of the test did not appear to support the authors' contention that compliance is a function of complementary need fulfilment.

This does not, of course, diminish the importance of patient needs and Finn (1986) states that in the consultation patients bring their needs and wants while physicians bring responsive answers and actions. He alludes to various patient needs such as: relief from pain and suffering; reassurance; confirmation and legitimation of illness; information on diagnosis and treatment; answers to questions about their illness; and a sympathetic hearing. Physician needs include: patient promptness; a clear concise story of the illness; patient compliance; and acceptance and confidence in their own good will, skill and knowledge.

While Finn (1986) writes from his own observation and experience his ideas are supported by other empirical studies (Korsch, Gozzi & Francis, 1968; Boreham & Gibson, 1978). These highlight patient needs for information and Joubert & Lasagna (1975) also found information needs to be both pressing and common among many patients. The results of their survey showed that 93% of the patients in the study wanted to know the reasons for using the particular drugs prescribed by their doctor; 89% wanted to know the common risks involved; 82% the risks of over and under dosing; and 81% wanted to know the likelihood of rare side effects occurring.

In a recent review of the literature concerning doctor-patient communication (Cresswell, 1983), it is apparent that a common theme exists - patients do not feel they are being given enough information by their physicians. This is taken as evidence that patients have a need for information and Cresswell (1983) maintains that this unmet need is producing increasing levels of patient dissatisfaction and non-compliance with medical intervention.

GOALS: People enter situations because they are motivated to do so, thus they expect to attain certain goals, which in turn lead to satisfaction of their needs (Graham, Argyle &

Furnham, 1980). Graham et al. investigated the goal structures of some common situations including 'a visit to the doctor'. A goal list was generated by the researchers and a panel of 60 students were then asked which of the goals they considered important in each situation. For a visit to the doctor 95% considered that gaining help, advice and reassurance, and achieving physical well being were important goals; 88% felt that obtaining information, learning and problem solving were important; 80% would seek to reduce anxiety and 71% rated conveying information to the other party as an important goal. While it is possible that the method of producing the goals may have limited the content of the list to those goals that subjects were consciously aware of and felt were socially acceptable, the high percentages of subjects considering the above goals as important lends support to their relevance in the doctor-patient consultation.

Agick (1983) suggests the overall goal of the doctor-patient relationship is to restore the well-being of individual sufferers. Hippocrates himself assigned to medicine the goal of eliminating the suffering of the sick - but is this a mutual goal? Cassel (1982) argues that the relief of suffering is considered a primary goal of medicine by patients and lay people but not by doctors themselves. He points to the paradox of suffering being caused by medical intervention which is technically adequate in terms of the physician goal of treatment for disease but could be considered counter-productive for the goal of relief of suffering.

Goal disparity is clearly a potential source of conflict especially where goals are unstated, unacknowledged and perhaps even unrecognised. This is a situation not uncommon in medical consultations where the doctors' aims may not coincide with the main concern of the patient (Pendleton, 1979). However, Finn (1986) is more optimistic and defines physician goals as the detection and treatment of disease and the simultaneous relief of pain and suffering. These, he maintains, are the proper functions of medicine.

EXPECTATIONS: It is fundamental to any relationship or interaction that each participant develops a system of expectations; partly relating to his own behaviour and partly to the actions of others (Parsons, 1951).

Reader, Pratt & Mudd (1957) investigated patient expectations in a sample of fifty patients attending a city clinic for the first time. Practically all the patients expected they would be able to provide information about their present illness but only 56% expected to be asked about past illnesses. 42% expected tests to be ordered and 64% anticipated positive moves towards a return to good health. The study revealed that patients expressed a need for information regarding their condition but did not expect doctors to attempt to fill this need; they seldom made forceful demands for information to the physician.

Parsons (1951) proposed that if the actions of either participant in a relationship lead to a significant frustration of the expectation system of the other then the failure in fulfilment of expectation will place strain on the relationship. Frustration and lack of fulfilment of expectation increase the likelihood of a participant feeling resentment and hostility with resultant emotional conflict in the interaction.

This was clearly evident in a series of papers by Korsch and her colleagues reporting the investigation of factors associated with satisfaction and compliance (Korsch, Gozzi & Francis, 1968; Francis, Korsch & Morris, 1969; Freemon, Negrete, Davis & Korsch, 1971; Korsch, Freemon & Negrete, 1971; Korsch & Negrete, 1972). The studies were based on 800 consultations at a walk-in clinic at the Los Angeles Childrens' Hospital where the 'patient' studied was in fact the child's mother. Overall, 76% of patients were moderately or highly satisfied (Korsch et al, 1968) and the results showed that six of the nine factors associated with low levels of satisfaction were in fact unfulfilled expectations. Analysis of compliance correlates (Francis et al, 1969) showed that 80% of the mothers were moderately or highly compliant but that mothers who expected an explanation of the diagnosis and cause of the illness and didn't get one were less likely to comply. Korsch and her associates found that patients don't tend to make their expectations and worries known to their doctor spontaneously. Doctors need to make an effort to find out what expectations their patients hold and if they cannot be met, explain why (Korsch, Freemon & Negrete, 1971).

Blacher (1986) takes a more cynical approach noting that patients have always had 'magical' expectations of doctors reflecting the 'magical' hope that they can cure every pain. However, Uhlman, Inui & Carter (1984) point out that expectation and desire are two distinct perceptual dimensions. They suggest the term expectation be defined as 'anticipation that given events are likely to occur during or as a result of medical care'. Uhlman et al. support the recommendation that doctors should attempt to elicit patient expectations because patients should have their concerns met; providers cannot make reliable assumptions about the nature of individual patient needs; and focusing on specific problems may improve the efficiency of medical care.

Herman (1990) reports that disappointment of patient expectations is the chief cause of anger in consultation. The doctor's scope for disappointing expectations ranges from missing the diagnosis to failing to prescribe required treatments. "Although daily hassles may be the most frequent trigger, the broadest meaning of anger in the doctor-patient relationship is that expectations, realistic or otherwise, have been disappointed" (Herman, 1990; p 177).

The emphasis thus far has been on patient expectations and we now turn to doctor expectations. According to Freidson (1970) the [medical] practitioner wants the client to seek him out for professionally appropriate reasons, without visiting quacks and without untoward delay. He expects the client to accept his recommendations and follow them scrupulously. This view reflects the findings of an earlier study (Ort, Ford & Liske, 1964) which revealed that generally the patient is expected to play a subordinate, but not passive, role; he is expected to express a need for help when sick and a desire to get well. In addition, the doctor expects the patient to reciprocate his attentions and communicate, co-operate and express appreciation of the doctor's effort.

Greenberg, Eisenthal and Stoeckle (1984) investigated physician expectations more specifically, acknowledging that the doctors' expectations are important interactional variables. Results showed that 82% of patients were expected to comply with test procedures but only 57% of patients were expected to comply with treatment. Patients asked what was expected of them by their physicians responded with considerable consistency that the physician expected 'co-operation, trust and confidence' (Tagliacozzo & Makusch, 1972).

Input - Information.

Both doctor and patient individually posses a repository of information which is available to them for the task of medical consultation. For the patient this information relates to the presenting problem, and its effect on his or her life, while the doctor has a large medical information base which he utilizes in relation to the patient's problem. Within the traditional medical model the patient presents information about his complaints and the doctors task is to interpret the information, assess the effects, account for the condition and provide a management plan (Mechanic, 1966; 1978). As a consequence, doctors require their patients to present at an appropriate stage of illness with a mass of pertinent information ready and available in some pre-digested form for the doctor's consumption (Strong, 1977).

The patient thus faces problems in organizing observations and selecting the appropriate information. That patients are not always successful in this respect was shown by an investigation of purposes for the medical encounter as perceived by patient and physician (Taylor, Burdette, Camp & Edwards, 1980). Results from 200 patient/physician encounters revealed that the doctor and patient had different perceptions of the purpose of the encounter in 30.5% of cases. Taylor et al. conclude that this information disparity can lead to different agendas, priorities and objectives. Early open declaration of patient information could prevent such misperceptions and allow doctors to focus more appropriately on the patient's problem (Benarde & Mayerson, 1978). Indeed, physicians have claimed that the success of their treatment is highly dependent on obtaining accurate and useful information from their patients (Shuy, 1983b).

Balint (1968) has argued, though, that the presentation of somatic complaints often masks an underlying emotional problem which is frequently the major reason why the patient has sought advice. In such circumstances, patient information input is 'disguised' and the presenting problem may be that which is easiest or least threatening for the patient to express. Doctors need to be aware of the possibility that a patient has a 'hidden agenda' (Middleton, 1989) and be sensitive to patients' ideas about their symptoms including cultural factors and health beliefs. The doctor's background knowledge about the patient in particular and medicine in general may contribute to understanding the presenting problem but it may also mean that the doctor has preconceived ideas which cause him to miss the point of the consultation.

A recent article describing the use of a checklist for medical interviewing skills emphasized the importance of exploration of reasons for the encounter (Kraan, Crijnen, Zuidweg, van der Vleuten and Imbos, 1989). This relies on information being provided by the patient and accepted by the doctor. To be successful the physician must give the patient the opportunity to express his complaints and symptoms in his own words and to expand on the causes and consequences of the complaints and the events that prompted the consultation (Kraan et al, 1989). This process is necessary for the doctor to focus his skill and also has been shown to be important to patient satisfaction (Stiles, Putnam, Wolf and James, 1979).

Beckman and Frankel (1984) observed that an underlying impediment to the process is the common assumption by doctors that the first concern voiced by the patient is the chief complaint. Their results showed that patient responses to the doctor's opening solicitation were completed in only 23% of the consultations observed. In 69% of the consultations the physician interrupted the patient after a mean speaking time of only 18 seconds. Beckman and Frankel point out that even if the doctor's intention is to facilitate communication the result is usually a termination of patient response and direction of the consultation toward a specific concern. In the consultations where the patient's opening statement was completed uninterrupted the longest exposition took only 150 seconds. Other patients were observed to complete their statement of concerns in less than 60 seconds, effectively setting their own agenda for the visit. This provides some evidence that the 'Oh, while I'm here ...' syndrome of the hidden agenda (Barsky, 1981) is more the fault of the doctor than the patient.

A more recent study of the relationship between illness concerns and recovery from upper respiratory infections showed that patients later classified as asymptomatic had significantly greater reduction in concern. Asymptomatic patients also reported more benefit from discussion of concerns within the consultation and more satisfaction with this aspect of their care than patients later classified as still having symptoms. This well illustrates the importance of the quality and completeness of patient data which Engel (1987) describes as the 'limiting factor' in any scientific medical effort. Engel points out that patients commonly experience difficulties organizing their own input: "Am I making myself clear? Is this the information my doctor wants from me? Have I left something important out? Have I emphasized the wrong thing? Can I, should I bring up this or that?" (Engel, 1987; p117).

For Katon & Kleinman (1981) the initial step in their negotiated clinical method is elicitation of the patient's 'explanatory model'. This involves a drawing out of information from the patient and using this in the doctor's response to the patient. One aspect of response in a negotiated approach is the level of information and involvement afforded the patient. Obviously some individuals require greater information and involvement than others and it is sometimes difficult for doctors to judge individual preferences. This suggests the need for making explicit the information regarding patient preferences.

The level and amount of information a patient wants is an important input variable and one of which doctors should be aware. Patient access to the doctor's information is controlled by the doctor so it is the doctor's responsibility to release or retain information according to need. A recent survey of 264 hospital outpatients in Leeds (Mason, 1991) revealed that 72% of outpatients wanted as much detailed information about their condition as possible, 20% wanted some information but not much detail and only 8% preferred not to have much information.

In addition to being 'told things' many patients would also like access to their medical records which constitute another aspect of the doctor's information base. These records systematically document patient illness and doctor management over time and provide doctors with a significant informational resource which informs decisions and plays a crucial role in the organization of the consultation (Heath, 1982). Britten (1991) surveyed 24 hospital consultants and found only 10 approved patient access to medical records. Those opposing access felt patients lacked the competence to properly use the information while the consultants in favour felt access was beneficial in helping patients to better understand their treatment. In other countries, notably U.S.A. and Sweden, patients are assured of access to medical information and in Denmark one hospital allows patients to keep their own notes (Mason, 1991).

PROCESS

Bain (1977) conducted a study based on tape recordings of 480 consultations; his findings revealed that on average 81% of the verbal interaction involved the exchange of information in the doctor-patient interaction. Information is the crucial commodity of consultation and dialogue is what makes the process work. There is a growing literature demonstrating the efficacy of doctor information giving for therapeutic effects as diverse as decreased use of analgesics and reduced anxiety. Roter (1989) suggests the interpreted message from information giving is one of interest and caring. In addition, the provision of information may be viewed as enhancing patient power and increasing participation in the therapeutic process.

Cartwright (1967) asked 1306 people about the qualities they appreciated in a general practitioner. Of the five general categories of qualities, three were concerned with the doctor listening and talking to patients. By contrast, a question in the same survey seeking criticisms of general practitioners showed that on average 14% of the people thought their GP was 'not so good' at explaining things to them fully.

Fletcher (1980a) comments on the importance of information giving and information getting for both parties in medical consultation. He notes the high proportion of justifiable complaints (57%) made to the health services commissioner in 1978-79 which were due to lack of information or poor attitudes to patients. As a result of his own evaluation of the literature on doctor-patient communication, Fletcher makes the following comments: "I had not realized that communication could fail so often in clinical practice. [My patients] were nearly always politely grateful so I assumed they had understood what I had told them and were satisfied. I now realize how often I must have been wrong." (p845).

<u>Process - Information for the Doctor</u>

Miller (1978) likens the process of diagnosis to that of a detective story. He points out that as medical science has improved doctors have been able to formalise the ways in which people can be ill and have assembled recognisable patterns of illness. Gradually, by accumulating information from the patient the doctor is able to integrate a number of isolated features into a coherent picture of what is wrong. There is, however, a danger that in attempting to synthesize abstract symptoms into a meaningful basis for diagnosis the physician may actually be selective in what information he receives or attends to (Cicourel, 1983).

Maguire & Rutter (1976) observed videotape recordings of 50 final year medical students and noted that though the patients were willing to explain their problems the students obtained only a third of the available information. Three-quarters of the students accepted imprecise data and also missed important verbal clues about patient problems even when given several times. Byrne & Long (1976) found similar results in their study of 2000 GP consultations recorded on audiotape. Practitioners tended to respond to the first problem mentioned and assume it was the only problem. Few doctors attempted clarification of patient statements and reflection of information back to the patient to ensure understanding was rare. Furthermore, the doctors were too inclined to offer reassuring statements without establishing patient concern and they acted on incomplete information.

Rosser and Maguire (1982) interviewed doctors in depth about interactions with their cancer patients and concluded there was widespread avoidance of psycho-social topics. The doctors generally expressed the view that patients who experienced problems would come and tell the doctor about them. Patients who come in, come straight to the point and communicate rationally are appreciated while people presenting vast catalogues of irrelevant details are seen as troublesome (Stimson, 1976). Doctors wish to avoid any increase in the duration of the consultation and are wary of raising issues they cannot handle. The consensus is that it is better to manage the consultation so that psycho-social information is excluded (Rosser & Maguire, 1982).

A problem-based approach to consultation is advocated by Lesser (1985) who proposes that patients desire a pragmatic problem-oriented approach and therefore recommends that practitioners should be efficient interviewers. The doctor's specific objective is to acquire information and the patient must be held accountable for clear description. Bain (1976) reports that, in fact, the main part of patient information offered to the doctor relates to physical symptoms rather than the effects or impact that the illness may have. However, patients may exaggerate modify or fabricate their health status when describing symptoms or even withhold or misperceive important information concerning the state of their own bodies (Mechanic, 1974).

Maguire (1984) looks at the problem of patients withholding information from doctors and shows that the doctor's behaviour can itself compound a patient's reluctance to inform. Underlying such breakdowns in communication are three main factors: 1) Patients feel that their problem is not a legitimate reason to bother the doctor; 2) The doctor will not be interested in the problem; and 3) The doctor is too busy with other more important duties. Maguire (1984) asserts that such communication problems are both common and serious, often resulting in failure to identify an important medical problem.

<u>Process - Information for the Patient.</u>

Maslow (1963) explored the desire to know as a human cognitive need and suggests that humans are motivated to obtain knowledge and thereby understand their situation. It seems reasonable that when faced with a health problem people will actively seek knowledge and understanding in order to resolve their problem. While the doctor is traditionally seen as the source of a resolution, the doctor is also the source of knowledge; providing the understanding which patients desire. Maslow, speaking generally, proposed that knowledge is medicinal and knowledge brings control while ignorance makes real choice impossible.

Barsky (1981) clearly states that patients visit doctors with a desire for health information as well as diagnosis and treatment. Patients view the provision of information as an important and legitimate function of the doctor and in the absence of definitive information many patients suspect particular serious diseases like cancer and heart disease.

> "If the patient's need for information is not established and heeded serious misunderstandings may arise which hinder recovery" (Maguire, 1984; p153).

Maguire goes on to highlight the importance of providing patients with clear and accurate information about the mode of treatment, the goals of treatment and the side effects of treatment. Joubert and Lasagna (1975) found that 81% of patients surveyed wanted to be informed about the chance of dying from a normal dose of medicine even if it was as low as 1 in 100,000. Lay people tend to judge side effects as generally more serious than health professionals do, but there is good agreement between them in terms of ordering with regard to seriousness (Keown, Slovic & Lichtenstein, 1984). However, some doctors still feel that emphasizing risk and alternative forms of treatment merely confuses and distracts the patient (Jaffe, 1969).

One of the earliest published accounts of the importance of information in a treatment plan is by Frazer (1932, cited by Armstrong, 1982) in a paper entitled "The Problem of the Defaulter". Doctors must "impress on all patients at intervals the necessity of treatment" and they should have the patient "repeat all directions so no misunderstanding can occur" (p56). Ley et al. endorse this advice and add four other points about giving information to patients.

1) Doctors should try to utilise the primacy effect by giving instruction and advice early in the consultation and by stressing importance.

2) They should use short sentences and short words.

3) Doctors should make use of explicit categorisation of information; eg "I am going to tell you what is wrong with you and then I will outline the treatment plan."

5) Advice should be specific.

(Ley, 1976; Ley & Spelman, 1965, 1967)

Obviously non-compliance has long been a concern of the medical profession and it is clearly linked to information and decision making. Kulik and Carlino (1987) showed that sharing information about the nature and treatment of illness followed by a verbal commitment from the patient regarding adherence provides a low cost strategy to enhance health outcomes. This may work well with fairly straightforward problems like inner ear infection but the case is not so clear cut for serious illnesses or uncertain diagnoses. Waitzkin (1985) reports that when physicians in his study were faced with uncertainty they tended to communicate somewhat more information than under conditions of diagnostic or prognostic certainty. On the other hand, Amir (1987) found that in cases of high uncertainty regarding the five year survival chances of cancer patients doctors were less likely to volunteer full information than when they are more certain.

The relationship between uncertainty and information giving was more fully investigated in a two year study which compared, at all stages, what the doctors and families of young polio victims knew and understood (Davis, 1972). During the acute phase of paralytic poliomyelitis it is difficult to predict the amount of permanent damage or probable disability, however, by 12 weeks from onset the doctor can usually judge the amount and type of residual handicap. Davis (1972) found that at no time during the two years were any parents told to expect an outcome other than a full recovery, even though there was only one case where such a recovery was clearly indicated. The uncertainty which was a real factor in the early stages of the disease was extended and used to secure the managerial ends of the doctors. These included avoiding emotional and time-consuming scenes, and the maintenance of hope and cooperation in rehabilitation in the guise of a cure. Davis (1972) developed a classification scheme for the types of communication which can occur under conditions of either certainty or uncertainty. As table 2.1 shows, these have having different implications depending on the situation in which they are used.

Table 2.1. Fourfold schema of communication between doctor and patient, after Davis (1972).

| | CERTAINTY | UNCERTAINTY |
|---|---|---|
| NON-DISCREPANT | accurate prognosis given to patient | admission of uncertainty |
| DISCREPANT | evasion of truth (failure to share substantiated prognosis) | dissimulation (giving unsubstantiated prognosis) |

A number of studies have shown that in the past doctors have tended to withhold information from dying patients (Quint, 1972; McIntosh, 1974). However, attitudes are changing all the time and doctors are becoming more aware of the need to develop skills in communicating with the terminally ill (Buckman, 1984; Maguire & Faulkner, 1988a, 1988b). Premi (1981) notes the evidence of two American surveys, 16 years apart, which asked if doctors would tell a patient that he or she had cancer. In 1961 the majority of physicians would not reveal the diagnosis as cancer but by 1977 most physicians reported that they would tell a cancer patient the truth about his or her illness. Kelly and Frieson (1950) showed that the desire for information was high among cancer patients and 89% of them felt they should be told the truth.

Desire for information is widespread among patients of all kinds and several studies indicate that dissatisfaction with information received occurs in a number of patient care settings (Waitzkin & Stoeckle, 1976; Cartwright, 1964; Cartwright & Anderson, 1981; McIntosh, 1974). Comaroff (1976) found that while the majority of doctors reported feeling they ought to provide some information to patients in response to direct questions, many believed that explanations of illness and treatment are only indicated in cases where the patients understanding and cooperation are essential for effective treatment. The corollary being that when the condition is trivial and doesn't demand the patient's comprehension the information given can be limited or even medically inaccurate (p 278).

This is a stark contrast to the view of Ernstene (1957), who felt strongly that the aim of the physician should always be "to include in every consultation as much practical information as may be of use to the patient" (p 1112). Ernstene's somewhat progressive approach was based on the conviction that instruction given to patients, unhurriedly and in understandable terms, convincingly indicates true interest. To omit it constitutes neglect of a basic obligation to the patient (Ernstene, 1957).

Beisecker and Beisecker (1990) sought to better understand patient desire for information and patient information seeking behaviours during consultation. Their data, from attitude measures, interview data and tape recordings of consultations, clearly showed that patients make very few active attempts to obtain information from doctors and happily leave the responsibility for medical decision making in the doctors hands. Despite this finding, the study also showed clearly that patients have a strong desire for detailed information on a wide range of medical topics, and certainly want to know about their current medical situation.

Hughes and Larson (1991) use a group value model and a procedural justice viewpoint as the theoretical basis of a call for informed patient involvement in health care. They maintain that people are concerned about their long term and social relationship with their doctor, and place trust in his or her ability to evaluate the appropriateness of diagnosis and treatment. At the same time, being a party to the decision-making process increases the individual's perceptions of procedural justice - that the decision made was right and fair - and enhances their own standing. Thus, it is suggested that providing information and allowing the patient to express his or her own views may be a useful method of increasing patient satisfaction and decreasing disenrollment among patients.

Pendleton and Bochner's (1980) videotape analysis of 79 consultations indicated that the patient's social class is a potent factor for the doctor when judging whether or not to offer explanations. Similar suggestions have been made by other researchers and it appears that low social class patients receive less information than higher social class patients (Cartwright, 1964; Cartwright & Anderson, 1981; Cartwright & O'Brien, 1976; Comaroff, 1976; Bain, 1977). It is also the lower social class patients that are least satisfied with most aspects of medical care (Hulka, Kupper, Daly, Cassel & Schoen, 1975).

Roter and her colleagues analysed the consultations of standardized, simulated patients presenting two chronic pulmonary conditions (Roter, Hall & Katz, 1987; Hall, Roter & Katz, 1987). Results indicated that physicians were inclined to take either a patient-centred (giving information and counselling) or a doctor-centred (giving directions and asking questions) approach to task performance. Doctors who gave more medical information spent less time making socioemotional utterances and those who engaged in more socioemotional exchange tended to be relatively uninformative in terms of medical matters. A form of trade off seemed to be operating where information and counselling were sacrificed for social exchange but directions and questions were always retained. In order to interpret these behaviours in terms of desirability, Roter et al. had each of the 43 tape recordings rated by three students (N=258). The patient centred skills of informing and counselling were consistently, positively related to satisfaction, recall and impression. Roter et al. (1987) suggest that the results were influenced by the mediation of interpreted affect whereby physicians who give information may be perceived as interested and conscientious and inspire confidence. Doctors who ask many questions may be perceived as incompetent or insecure and thus inspire anxiety.

The public is increasingly convinced that as patients they have a right to know all the facts about their disease. This extends beyond an explanation of diagnosis, treatment and prognosis to the right to be informed accurately and promptly of new information relating to the condition (Rourk, Hock, Pursell, Jones and Spock, 1981). A more recent study suggests that patient expectations for information play an important role in the doctor-patient relationship (Hatcher & Richtsmeier, 1990). The research was undertaken in a paediatric setting and focused on the post-consultation anxiety measures of 103 parents who brought their children to an emergency clinic. Three independent variables contributed significantly to anxiety level. These were the perception that the doctor had examined the child thoroughly, the perception that the physician told the parent what he or she wanted to know and the overall satisfaction with the visit.

Despite the limitations that the setting and sample place on the generalizability of this study, it clearly shows that unmet needs for information contribute to the anxiety felt by parents despite seeing the doctor. If, as Armstrong (1982) suggests, anxiety has become a predominant medical concern then withholding information is a bad strategy for doctors dealing with non-fatal illness. A more effective way of dealing with patients would be to provide them with the information they require.

Process - Control of Information

The way a doctor interviews a patient determines to a large extent the kinds of information that will be discussed (Kent & Dalgliesh, 1986). Rees (1982) comments on the shift of emphasis from passive depository of information to an active influence on the structure of the events as the doctor selects some materials for specific attention while paying less attention to facts which have no immediate relevance.

Coulthard and Ashby (1975) described the doctor-patient interaction in terms of patterns of information seeking and control.

> "The most frequent types of exchange are doctor-initiated information seeking exchanges rather than patient-initiated information-giving exchanges." (p 142).

Doctors monopolize the role of initiator, avoid responding to patient initiatives (by ignoring them or treating them as mere comments) and they tend to interrupt and redirect the interaction if it wanders beyond the desired scope. While there are obviously times when a physician may want to maintain control in order to implement necessary therapeutic decisions (Waitzkin & Stoeckle, 1972), it may not always be a good strategy. Tuckett, Boulton, Olson & Williams (1985) showed quite clearly that consultations in which doctors inhibited or evaded patient ideas were more likely to result in failures of recall and understanding.

Professional ideology is a major influence on information management in consultation (Mathews, 1983; Quint, 1972; McIntosh, 1974) and there appear to be three fundamental orientations:

1) To drip feed the information a little at a time based on the doctor's view of the need to know. This view usually takes into account the patient's personality, temperament and expected reaction (Quint, 1972).

2) To withhold information - to preserve power (Freidson, 1970) or more commonly to avoid patient concern and bolster hope (Davis, 1972).

3) To provide full information to patients, as they have a right to know about their own condition.

Comaroff (1976) asked doctors to describe their procedures in dealing with patients and questioned them about their behaviour in controlling information concerning non-fatal illness. One of the recurring features was personal conviction as a rationale for routine behaviour; such as "My patients are only told what is good for them; and I'm the best judge of that" (Comaroff, 1976; p 273). The doctors also evaluated their own strategies in terms of their perceptions of professional norms - the things one should do. These are applied in terms of priority, thus, information can be withheld in order to fulfil the duty of providing reassurance.

Marianne Amir (1987) used hypothetical case studies to discover the considerations that guide the physician when informing cancer patients about their diagnosis and prognosis. The two most important factors in terms of whether any information would be given were the doctor's 'policy' and whether the patient asked. When the patient asked, some information would have been provided but in terms of the accuracy of what was told, the orientation of the doctor was the deciding factor. If the doctor advocates informing cancer patients he will do so regardless of the severity of the disease.

The obvious limitation to both Comaroff and Amir's studies is the lack of certainty that doctors do, in fact, behave in the way they say they will. This was not a problem for Street (1991) who analysed video recordings of 41 patients attending a family practice with 10 physicians. The findings confirm that asking questions is the most useful strategy that a patient could adopt in gaining more information. Ten Have (1991) notes that patients could do more to exert control of the information they receive; while patients themselves initiate the consultation they appear to 'lose' the initiative within the encounter and the doctor's questioning takes over. Ten Have observes that patients typically provide doctors with material for questioning in their first utterances, thereby encouraging doctors to 'take back' the initiative they have just offered to the patient.

Shuy (1983b) also notes that the doctors' dominance is evident in the three major components of information exchange; use of language, attitudes to illness and the structure of the dialogue. Although he cites only three interviews (with separate doctors), Shuy identifies the need for greater physician accommodation to ensure functional information flow. Other possibilities besides asymmetry exist - physicians can frame questions to generate broad responses and patients can structure answers to bring in new information or request information on specific points of interest (ten Have, 1991). The difficulty is that patients don't seem to be inclined to assert themselves and when they do so there is no guarantee that the information elicited will be of the quality or appropriateness desired (Todd, 1989; Stiles, 1989).

A recent survey showed that while the physicians will give sufficient information to obtain informed consent to treatment, they tend to invoke the right of discretion in the selection and extent of what is shared (Hattori, Salzberg, Kiang, Fujimiya, Tejima & Furuno, 1991). In a British study to assess patient knowledge, Dunkelman (1979) was disturbed to find that many surgical patients were apparently ignorant of the nature of the operations and why they were being performed, even though they had consented to the procedures. Hawkins (1979) also asked patients having undergone hospital investigations how well the tests had been explained to them. One ward had staff particularly concerned that patients be talked to 'properly', a feature not apparent on the other wards; 78% of their patients said the test had been explained compared to 54% of the rest.

Because patients have little recourse outside the official complaints machinery they often have to enter the procedure simply to get information regarding what went wrong and why. Owen (1991) notes that failure to diagnose accounted for 20% of his random sample of complaints, with the correct diagnosis usually being discovered through seeing another doctor or from a post mortem. Most people don't rush to court for compensation when outcomes are unsatisfactory, they usually want an explanation and an apology where appropriate - as one victim of medical negligence comments;

> "If I had been given an explanation and apology in the first year I would have been satisfied. But nobody tells you anything, and nobody appears to care. So at the end of the day all you can go for is money " (Montague, 1990; p 29).

<u>Process - Problems Identified</u>

The problems encountered in bad consultations are, in the main, the result of inadequate information exchange leading to incorrect conclusions, misunderstanding, and poor communication (Jaspars, King & Pendleton, 1983). As West (1984) points out, whenever people talk they run the risk of not being heard or understood. However, it appears that doctor-patient communication is particularly at risk of mishearings, misperceptions and misunderstandings (McKinlay, 1975; Korsch & Negrete, 1972; Ley & Spelman, 1967; Ley, 1983). Comments about inattentive, preoccupied GPs are all too common (Rice, 1990) and the following quote is typical:

> "I wish he'd listen more. When I'm telling him what's wrong with me he's often reading through my notes, or writing something, not listening to what I'm saying." (Rice, 1990; p 70).

Prompted by concern about the lack of mutual intelligibility in medical dialogues, West (1984) explored the devices open to doctors and patients to ensure they are heard and understood by one another. It was noted that patients were more likely to withhold confirmation than were doctors and West suggests this is a subtle way of negotiating with the doctors. Unfortunately, there is a real danger that doctors may fail to notice such indirect evidence of their patients' misunderstandings or misgivings.

Paget (1983) also used discourse analysis to study misunderstandings in the talk between an internist and his patient across three separate encounters. She notes that by questions, requests for action, and commands the doctor introduces, develops and dissolves discourse topics. He initiates a number of abrupt breaks and shifts and tends to ignore the patient's concerns which seems to contribute to the discontinuities. Such behaviours, which hinder the flow of information in the encounter, inevitably lead to inadequate delivery of health care (Todd, 1983; p 185).

As Bradshaw (1978) notes, doctors are presumed to be informed people of good judgment, yet in some instances they obviously fail to be informed. Doctors appear to have lost faith in hearing about the complaint from the patient; their words are evanescent - uttered only to float away on the air (Spiro, 1984). However, if doctors are poor at accepting the patients' input, a number of studies indicate they are even worse at giving information in return. The most common complaint patients make of doctors is "they don't tell you anything" (Rawlings, 1975).

An empirical study designed to assess physician information giving revealed poor levels of performance across the sample with only a few of the doctors using a systematic approach. The poor display of skills was attributed to lack of clear guidance about how to give information and advice to patients either while or since they were medical students (Maguire, Fairbairn & Fletcher, 1986). Studies in a variety of clinical settings show that about one third of patients feel they have not received enough information (Ley & Morris, 1984). Reynolds (1978) interviewed 100 surgical patients about information they had received about their illness and the procedures they had undergone. Fifty-five percent expressed dissatisfaction and reported that lack of information led to anxiety and fear. A more recent survey (Mason, 1991) sought the views of 262 patients and found that nearly 20% had left the clinic without understanding what was wrong with them or what the treatment was going to be. A quarter didn't think they had been told enough by their own practitioner and 75% wanted as much information as possible about their medical condition.

Tuckett, Boulton, Olson & Williams (1985) studied the exchange of information in medical consultation and made objective ratings of information giving by the doctors. Consultations for administrative or 'trivial' matters were explicitly excluded, though one wonders whether these consultations were trivial to the patients concerned. Analysis from recordings of 405 interviews showed that in 100% of consultations some information was given to the patient regarding treatment. However, the doctor provided information about the diagnosis and significance of the problem in only 91% of cases. Even lower levels of provision were recorded for information about preventative measures (31%) and the social and emotional consequences of the problem and its treatment (12%).

When information was given, less than half of it was clearly presented and the sharing of reasoning was also limited; doctors were not inclined to share the basis of their views. When Tuckett et al. considered patients health beliefs, there was not one instance in 405 consultations where the doctor had discovered patient health beliefs and related them to his explanations! Lack of adequate and appropriate information precluded the resolution of a satisfactory outcome except in cases where information was clearly not needed.

Waitzkin (1985) builds his research on the basic assumption that information giving is a crucial element of medical care. From analysis of 336 recorded encounters in a variety of outpatient settings he showed that doctors spend very little time informing patients. Notably, the doctors tended to overestimate the time they spent in giving information and underestimated their patients' desire for information.

If lack of information can be seen as a potential stressor for patients, then uncertainty regarding the outcome of illness is surely a factor in doctor frustration (Parsons, 1951). Other sources of frustration and discontent for doctors include trivial consultations, difficult and unreasonable patients and unrealistic job demands (Cartwright, 1964; Mechanic, 1974). One of the common complaints which doctors make is that patients avoid mentioning primary reasons for their visits until relatively late in the consultation. Byrne and Long (1976) showed that a statistically significant proportion of the patients came up with some kind of late request during the conclusion.

As Pendleton (1979) pointed out, doctors attribute nearly all of the difficulties they encounter to factors external to themselves; mainly situational and interactional variables together with aspects of the patients. This is also evident in a study by Bennett, Knox and Morrison (1978) where situations involving drug dependency, child abuse and interpersonal matters were commonly listed as 'difficult' by doctors. Adolescents and husband and wife pairs were the most commonly cited patient groups posing difficulties and discovering the reason for attendance was also problematic.

Staly (1991) notes however, that patients may often appear difficult because they don't fully comprehend what doctors are saying and can't assert themselves to ask directly for clarification. In these circumstances the patient may be following his or her own format for 'good' consultation behaviour and will therefore remain quiet, not disturb the doctor, accept his instructions without question and avoid making a fuss (Dunbar, 1947). Noisy, uncooperative, complaining and demanding patients attract physician disapproval but as Glogow (1973) points out they benefit from a greater sense of independence and awareness of options which may aid more rapid recovery.

Process - Interventions and Observations

Dissatisfaction with the information provided by doctors is greater and occurs more frequently than other consultation dissatisfactions (Waitzkin and Stoeckle, 1972; Locker & Dunt, 1978). But how does this relate to the process of consultation and the observations made about poor physician performance in giving information to patients (e.g. Bain, 1976; 1977; Roter, 1989)? The simple answer is that doctors should provide more information to their patients; but Tuckett and Williams (1984) point out that the premise that more information is better has to be applied with care. The measurement of information is an important factor and it is not acceptable to simply rely on quantity especially in terms of utterances categorised as 'informative'. Counting informative statements creates the risk of labelling a doctor as informative when in fact he may be repetitious or verbose. Additionally, there must be some theoretical framework within which the indicators chosen to represent information and its effect on outcomes can be defined and which makes interpretation clear. Tuckett and Williams (1984) also question the assumption that all information statements have equal importance.

This assumption is clearly evident in much of the work on patient recall (Ley & Spelman, 1967; Ley, 1976; 1983) and it creates problems in terms of interpretation. Is it of any importance that patients on average forget 37% of what they are told within 10 minutes of the consultation (Ley &

Spelman, 1965)? This depends on the purpose and meaning of giving the information and the goals and motivations of those who receive it. Where recall was regarded as the primary outcome for the study, results clearly showed that forgetting increased with the quantity of information given - doctors were urged not to burden patients with excessive information (Ley, 1976). On the other hand, where the outcome was recognition (i.e. were you told about ...?) communication scores were greater when the physician was trying to communicate more than 16 items than when he was trying to communicate only four or five (Hulka, Kupper, Cassel and Mayo, 1975).

Stiles (1989) suggests that the importance of information has been grossly underestimated due to the many null correlations which are potentially misleading. Failure to find a significant correlation is taken to indicate that the process component does not contribute causally to outcome. This approach implicitly assumes that patient requirements for the processes in question are constant across patients. What information is given and its relevance and importance to the patient are factors equally likely to influence outcomes as is the way information is given (Tuckett & Williams, 1984).

A number of studies have, in fact, shown the benefits of information exchange; several in the area of recovery from surgery (Langer, Janis & Wolf, 1975). Janis (1971) showed that patients with moderate fear before surgery recovered well and that this group had asked for information about treatment; they appeared to have been able to prepare for the consequences and cope better with the pain and discomfort. Reduction of post-operative pain was also achieved by the instruction and encouragement of a random selection of patients (Egbert, Battit, Welch & Bartlett, 1964) and preparatory information can reduce distress and increase compliance with recommended actions (Johnson & Levanthal, 1974). Linn, Ware and Greenfield (1980) noted that physicians' attempts to decrease concern by explaining the etiology of chest pain was one of the factors associated with chest pain relief.

Further cautions that information should be responsive to individual patient requirements were raised by a study of fully informed consent (Christensen- Szalanski, Boyce, Harrell & Gardner, 1987). Complete disclosure regarding the risks of circumcision did not affect the actual decision reached but for some mothers there was a reduction in confidence that the decision was appropriate and an increase in dissatisfaction with the doctor's behaviour. For mothers who preferred to avoid information which challenged their pre-existing convictions, complete disclosure appeared to generate expressions of guilt, resentment and conflict.

Rost, Carter and Inui (1989) took both the patient's and physician's perspective into account and tested the effects of bi-directional information exchange on patient adherence to treatment. They found that exchange which allows emergence of information relevant to both participants co-occurs with a patient's decision to follow recommendations for a new medication. Bertakis (1977) showed that patients are more satisfied with their doctors when they provide more information concerning their illnesses and it is more relevant to the patient's own needs. The combination of patient expression and doctor information-giving in routine interviews was found to be associated with subsequent blood pressure control in hypertensive patients (Orth, Stiles, Scherwitz, Hennrikus & Vallbona, 1987). The two factors have also been shown to be positively correlated with patient satisfaction (Putnam, Stiles, Jacob & James, 1985; Stiles, Putnam, Wolf & James, 1979). Patient satisfaction was also increased by an intervention to increase patient understanding by extra explanations and checks on need for clarification (Ley, Bradshaw, Kincey & Atherton, 1976).

Ley, Jain and Skilbeck (1976) used written information to deal with two factors associated with non-compliance in psychotropic drug regimens. The patients were provided with leaflets explaining what to do if a dose was missed and reminding them that the medication takes some time to become fully effective. The provision of easily understood information resulted in a significant reduction in medication errors but there was no effect for a difficult version. This finding emphasises the importance of understanding as a feature in determining the quality of information provision. In a series of articles about the benefits of patient information leaflets, the writers underline the need for adequate and appropriate information to reinforce and amplify that given by the doctor. They recommend full disclosure in simple terms together with the ability to cater for individual needs (Kitching, 1990; Wells, 1990; Weinman, 1990; Gibbs, Waters & George, 1990).

Other proposed interventions have targeted patient behaviour in the consultation and though these are less common they seem to be effective. Roter (1977) had patients work with a health educator immediately prior to seeing the doctor to articulate the questions they wanted to ask and prompt them to actually ask during the consultation. Experimental patients asked twice as many questions as the control group and they also scored higher on health locus of control and had improved appointment keeping over the next six months. Unfortunately, the intervention also resulted in some anger and anxiety by both parties and experimental patients were less satisfied with the visit as a whole. A similar approach was adopted in a later study to maximise diabetes control by encouraging effective patient participation in the medical care (Greenfield, Kaplan, Ware, Yano & Frank, 1988). Before the consultation a clinic assistant reviewed the medical record with the patient and by systematic prompts ensured the patient had appropriate information to negotiate medical decisions with the doctor. The results were noteworthy in that the experimental patients were twice as effective as controls in eliciting information from the doctor and they also reported significantly fewer functional limitations and had improved blood sugar control.

Thompson, Nanni and Schwankovsky (1990) showed that even very simple interventions can improve information exchange. Asking patients to write out three questions to ask their doctor or giving them a message from their physician encouraging question asking were both effective ways to increase patient question asking, feelings of control and satisfaction with the visit. The negative effects reported by Roter (1977) did not occur, perhaps because of the the doctors' commitment to patient involvement. Patient education has other benefits too including more appropriate consulting behaviour (Rutten, Van Eijk, Beck & Van der Velden, 1991) and reduction in unnecessary prescribing (Marsh, 1981)

Process - Questions

A number of the studies already reviewed have dealt with questions in the consultation in terms of other issues such as dominance, control and improving information flow (e.g. Coulthard & Ashby, 1975; Roter, 1977; Greenfield et al., 1988). There are, in addition, a few studies which have investigated questions as a distinct phenomenon in the doctor-patient relationship. Carter, Inui, Kukull and Haigh

(1982) examined 150 patient question units from 16 taped consultations. Questions most frequently asked concerned the nature and means of treatment (39%), the patient's disease process (30%), and arrangements for care (25%). These three groups accounted for 93% of the patient questions. These items were positively related to patient knowledge unlike the Roter (1977) items of 'patient bids for clarification' which were associated with lack of patient knowledge.

Boreham and Gibson (1978) also report that in their study patients were more active in asking about treatment than diagnosis. They note that a large proportion of the treatment questions (52%) involved requests for a repeat prescription or regular vaccination. Despite professing an interest in gaining information and also placing great importance on this aspect of consultation, very few patients actually questioned the doctor and the information they received was limited to that which the doctor spontaneously offered. Roter (1984) also notes that direct medical questions account for less than 3% of the total patient interaction and all questions together represent only 6% of the patients' input.

In 1984 Stiles and his colleagues analysed 150 consultations to establish the frequency of patients' pure questions - those seeking information or advice. Instances of these were rare occurring only 537 times among 60,914 utterances

(0.9%) with the greatest frequency occurring during the conclusion (Stiles, Putnam & Jacob, 1984). West (1983) makes similar observations about the dearth of patient initiated questions and reports nearly half of the patient questions occurring in her transcripts exhibited some form of speech disturbance. She notes that patients displayed considerable difficulty in 'spitting out' their questions. Mason (1991) identified a group of patients (14%) within her survey respondents who wanted to ask questions of the doctor during the visit but didn't. Reasons for not asking were varied but lack of time or opportunity featured prominently; lack of confidence and avoiding upsetting the doctor were mentioned by a minority of patients.

Woolliscroft (1988) acknowledges that it is the questioning of the physician which is central to most consultations and patient satisfaction is correlated with the physician asking broad questions, as opposed to narrow ones. However, patients will seize any opportunity to tell their own story and in one study the percentage of narrow physician questions followed by a short answer from the patient was at best 14% (Woolliscroft, Calhoun, Billiu, Stross, McDonald & Templeton, 1989).

Process - Participation and Negotiation

Kassirer (1983; p898) asks "Why do patients allow critical decisions to be made for them and why do physicians sometimes usurp patients decision-making prerogatives?"

In answer he suggests that one factor is the physicians failure to allow patients' attitudes and preferences to carry sufficient weight when a decision is being reached. Britten (1991) further suggests that the making of decisions on the patient's behalf is a consequence of their 'disqualification' from the decision making process on the grounds of incompetence. If patients are not seen as capable of taking an active part in the consultation then they do not need to be fully informed.

An opposing view is the customer approach to patienthood espoused by Lazare, Eisenthal and Wasserman (1975) which conceptualizes the physicians task as 'negotiating a response to patient requests.

> "Negotiation is the heart of the clinical process. It is the coming together, the interaction, the dialogue between the patient who is formulating what he thinks he needs and the clinician who is formulating what he thinks is clinically appropriate" (p 554)

Robinson and Whitfield (1987) make a distinction between patient initiatives formulated prior to the consultation and those formulated during the consultation. They found that the expression of the latter was positively related to the doctor precipitating negotiation. By actively involving the patient in discussion about treatment, the doctor can be more confident about whether mutual understanding and agreement have been reached.

Katon and Kleinman (1981) argue that in contemporary western culture it is now more appropriate for doctor and patient to meet as equals with the former providing the expert advice and the latter having ultimate responsibility for choosing his or her course of action. They believe that it is both feasible and desirable to structure clinical relationships in this way. A similar view is presented by Benarde and Mayerson (1978) who point out that with open statement of goals the parties can negotiate toward some middle ground. The key to this approach is encouraging patient involvement and an openness to renegotiation.

In an empirical study to investigate the effects of ten negotiated approach measures, it was shown that explanatory processes and having the clinician pursue consensus treatment plans were positively correlated with patient satisfaction (Eisenthal, Koopman & Lazare, 1983). However, none of the negotiation variables were significantly related to clinician satisfaction; the authors suggest that doctor and patient have divergent value systems concerning the consultation process and the physicians misread the patients' perspective.

## OUTCOMES

Many health services researchers have focused on the issue of how the client-practitioner exchange affects health care

outcomes (Cape, 1991). How such judgements should be made has been open to debate and Freidson (1960) noted that practitioners have traditionally claimed their skills are so esoteric that the client is in no position to evaluate them. The recent changes in the NHS have acknowledged that doctors should be more accountable and that the consumers' view be considered (Secretaries of State for Health, 1989).
Clear clinical outcomes are easily counted but the patient may regard outcomes in different ways from the health professional (Hopkins, 1990); treatment may be less important to the patient than understanding what is happening or how he or she was treated (Wright, 1991).

Outcome - Satisfaction

Fitzpatrick (1991) makes three points about patient satisfaction as a measure of health care: It is an important outcome measure, it is useful in assessing consultation and it serves as feedback to the providers of health care. Pascoe (1983) also concludes that patient satisfaction can be a dependent measure of service quality and is a useful predictor of health related behaviour.

A number of researchers have developed composite measures of satisfaction (Wolf, Putnam, James & Stiles, 1978; Larsen, Attkisson, Hargreaves & Nguyen, 1979; Ware & Hays, 1988; Zyzanski, Hulka & Cassel, 1974) but typically measures have been simple, ad hoc ratings with little standardization (Pascoe, 1983). It appears that most studies of patient evaluation find high levels of satisfaction regardless of the measurement used or the patients sampled (Linn, 1975; Trussell, 1960). For example, Savage and Armstrong (1990) found only three out of 320 patients gave neutral or dissatisfied responses when questioned immediately after their consultation.

Such uniformly high levels are not found when medical care in general is discussed (Pascoe, 1983, Cartwright, 1964; 1967; Cartwright & Anderson, 1981) and it has been suggested that high levels of personal satisfaction reflect the fact that it is uncomfortable to believe one's own source of care is inadequate (Tessler & Mechanic, 1975). Perhaps this also accounts for the lack of association between satisfaction with care and patients' perceptions of improvement in their illness (Treadway, 1983). Satterlund-Larsen, Svardsudd, Wedel and Saljo (1989) also argue that satisfaction with involvement cannot be taken as evidence of a high level of influence in the process. Woolley, Kane, Hughes & Wright (1978) did find a positive association between satisfaction with outcome and functional improvement but were at a loss to explain why 65% of the people with 'bad' outcomes were satisfied with such an outcome!

Patients' sociodemographic characteristics are the variables most commonly studied in relation to satisfaction but Linder-Pelz (1982) found them to be a minor predictor of satisfaction, at best. Variables such as age, sex, education, marital status and occupation yield weak, inconsistent and at times non-existent associations with patient satisfaction (Hall & Dornan, 1990).

Ley (1982) suggests that patients will only be satisfied when their cognitive needs regarding diagnosis, etiology and treatment are met. Other studies have reported a strong relationship between satisfaction with health care and the amount of information the patients received (Berkanovic & Marcus, 1976; Kincey, Bradshaw & Ley, 1975; Korsch et al., 1968; Woolley et al., 1978). Evans, Kiellerup, Stanley, Burrows & Sweet (1987) showed that attempts by doctors to communicate more effectively increased patients' positive feelings and reduced anxiety.

Kasteler, Kane, Olsen & Thetford (1976) collected data from 576 families to investigate 'doctor-shopping' behaviour. In total 43% of them had changed doctors because of dissatisfaction with some aspect of care. Lack of confidence in the doctor's competence was a contributory factor. Other studies have shown competence to be related to general satisfaction, socioemotional satisfaction and technical satisfaction (Greene, Weinberger & Mamlin, 1980; Ben-Sira, 1976; 1980). A specific test of the influence of expectation fulfilment on patient satisfaction was undertaken by Larsen & Rootman (1976). Results showed that the more a physician's role performance meets a patient's expectations the more satisfied the patient will be with the doctor's services. Korsh et al. (1968) had similar findings:

> "...for those parents expecting to learn the causation and nature of their child's illness the failure to have this expectation fulfilled leads to dissatisfaction ..." (p 861).

Dealing with patient ideas is another factor related to satisfaction with the medical encounter and one study found that 19% of the variance in patient satisfaction could be attributed to request fulfilment (Like and Zyzanski, 1987). Patients' emotional satisfaction with general practice consultations is also associated with the opportunity to tell their own story in their own words (Stiles, Putnam, Wolf & James, 1979). Treadway (1983) found that increased satisfaction was associated with the patient feeling understood and actually telling the doctor what he or she wanted.

The perceptions of doctors with respect to consultation and satisfaction have been less well documented than for patients. A recent study comparing patients' and doctors' satisfaction went some way to redressing the balance (Rashid, Forman, Jagger & Mann, 1989). Results showed that, on the the whole, patients were more satisfied than the doctors with the consultation. They also significantly disagreed about the doctor's ability to assess patients, put them at their ease, offer explanations and give advice about treatment. Lack of concordance has also been found between doctor and patient perceptions of the reason for the visit, satisfaction with the encounter and intended compliance with treatment (Taylor, Burdette, Camp & Edwards, 1980).

Weinberger, Greene and Mamlin (1981) found that doctor satisfaction was positively associated with the patient being perceived as compliant and the doctor's use of humour. Greater effort on the part of the doctor and pressure for time were negatively related to satisfaction. Cartwright and O'Brien (1967) reported that doctor satisfaction was more likely to occur when the consultation time was less than five minutes, the patient asked no more than one question and less than four problems were discussed. A more elaborate study of the variables contributing to physician satisfaction produced a four factor solution (Shore & Franks, 1986). The researchers labelled these interactive - referring to the physician's view of the patient's response to the encounter; personal - the doctor's own response; professional - referring to the job involved; and contextual - referring to the emotional, behavioural and physical environment. The emergence of a contextual factor supports the contention that overall job satisfaction may have an influence.

<u>Outcome - Compliance</u>

"To label patients compliant or non-compliant without elaboration is misleading" (Davis, 1971; p 32). Each patient will have been given a number of pieces of advice and may comply with all of it, some of it, or none of it. Non-compliance may be intentional or unintentional. Rashid (1982) investigated one aspect of intentional non-compliance and discovered that nearly 20% of his sample patients failed to have their prescriptions filled. When all aspects of compliance are considered, it is estimated that 40% of patients do not comply with their doctor's advice on treatment (Ley, 1988). Hulka and her colleagues identified four types of medication errors: omissions - not taking drugs prescribed by the doctor; commissions - taking drugs not prescribed by the doctor; scheduling misconceptions - not understanding the correct schedule; and scheduling non-compliance - knowing correct schedule but not adhering to it (Hulka, Cassel, Kupper & Burdette, 1976).

Slack (1977) suggests that the bulk of non-compliance represents nothing more than disagreement with the doctor. A study examining doctor's behaviour towards patient non-compliance found that non-compliance is a source of frustration for doctors and is perceived as an ego-threatening event by the majority of them (Heszen-Klemens, 1987). The blame for such 'default' is seen as lying with the patient (Stimson, 1974) and the research question often posed is to find out what it is about the patient that makes him a defaulter. As Stimson (1974) notes, few significant differences between defaulters and compliers have been found despite the testing of numerous social and demographic variables. It seems that almost anyone can be non-compliant at one time or another and patients probably choose to comply with or ignore medical advice based on a complex set of factors (Kaplan, Greenfield & Ware, 1989)

Squier (1990) reviewed a number of aspects of the doctor-patient relationship and their impact on adherence to treatment advice. He presents convincing evidence of strong positive relationships between interpersonal empathy, patient satisfaction, release of tension, commitment to treatment and adherence to the regimen. A macro-analysis of four major compliance reviews suggested that effective information exchange plays an important role in reducing non-compliance (Carr, 1990).

Stewart (1984) reports on the benefits of patient-centred consultations; those in which the patient's point of view is actively sought. Cases where doctors exhibited a high frequency of patient centred behaviour were related to higher reported compliance and fewer medication dose errors As Zola (1981) notes, the patient has to be made an ally in treatment not the object of it. The notion of diagnosis and management being sequential actions is not immutable and the success of a treatment may serve to confirm a diagnosis, while unsuccessful treatment prompts a rethink on causation of the problem (Bain, 1983). Making the patient aware of possible treatment difficulties would reinforce trust that might otherwise erode as the patient becomes disappointed and disgruntled (Zola, 1981).

Good communication in the form of appropriate and comprehensible information is essential (Griffith, 1990). Increased information does not reduce communication clarity (Hulka, Kupper, Cassel & Mayo, 1975) and improvement in patient knowledge of drugs has been associated with better regime adherence (Ross, 1991). Carter, Inui, Kukull & Haigh (1982) also showed that patient suggestion-making behaviour was positively related to good knowledge of problems and compliance, possibly due to the cooperative nature of such interactions.

Outcome - Perceptions

In 1957 Gray and Cartwright investigated the reasons people gave for changing doctors. About 90% had to change because of relocation, the doctor's retirement, or his death. The remaining 10% cited unfavourable perceptions of the doctor's treatment or the attention paid to them. The study showed that patients were most likely to voluntarily terminate the doctor-patient relationship if they felt the doctor was not interested in them or their problems or if they felt he had no time to talk with them!

DiMatteo, Prince and Taranta (1979) set out to empirically test the relationships between patients' perceptions of a physician's treatment of them and their willingness to return to that doctor. Positive perceptions of the doctor's response in listening to the patient, explaining the condition, being receptive and available, and caring about the patient were strongly related to a decision to continue the relationship. Rodin (1978) concludes that the information patients receive regarding their physical symptoms, including the way they are treated initially when the illness is being diagnosed, provides the basis for a general schema which they use to interpret the events.

The significance of patient perceptions of physician conduct was explored by DiMatteo and Hays (1980) in a study of patient satisfaction. Patient perceptions of the doctor's proficiency at listening and explaining, capability of providing affective care, and technical competence were positively related to overall satisfaction with care. Another study showed that patients exposed to high levels of encouragement had significantly improved opinions of the clinicians and expressed greater satisfaction (Wasserman, Inui, Barriatua, Carter & Lippincott, 1984).

Fitzpatrick and Hopkins (1983) note that patients make judgments on a wide range of doctors' actions and Willson and McNamara (1982) showed that people clearly discriminate between good and bad physician behaviour in terms of both competence and courtesy. Interestingly, a manipulation of courtesy affected perceptions of courtesy and satisfaction while the competence manipulation affected perceptions of competence, satisfaction and courtesy.

Woolliscroft and colleagues considered perceptions of both doctors and patients and found the two groups view the interaction quite differently. From the the physicians' clinical, problem solving perspective, the most important factor was focused directiveness, aimed at gathering important factual information. On the other hand, patient evaluations of data-gathering were related to questions that were psychosocially oriented and their assessments of the interaction were linked to the physicians' use of broad questions (Woolliscroft, Calhoun, Billiu, Stross, MacDonald & Templeton, 1989). Armstrong, Glanville, Bailey and O'Keefe (1990) compared the patient's version of reattendance advice with the doctor's report of what he had recommended. The coefficient of agreement was only 0.41 indicating a large degree of non-concordance.

Outcome - Relationship

Effective communication is an important part of the development of a successful relationship between a doctor and patient (Roland, Bartholomew, Courtenay, Morris & Morrell, 1986). Wilson (1980) notes that both doctor and patient must participate in developing the relationship which hopefully meets the needs and concerns of each of them. Similarly, both patient and doctor can present obstacles which interfere with developing a good communication system. Freemon, Negrete, Davis and Korsch (1971) found that, in general, outcomes of the medical consultation were favourably influenced by the doctor being friendly and expressing solidarity while giving the impression of offering information freely.

Stiles, Putnam, James and Wolf (1979) tested the assumption that physicians are usually presumptuous and controlling while patients are usually deferent and acquiescent in medical encounters. They investigated patient reaction to these reciprocal roles and found the assumption was confirmed but the inherent status and power gap could be bridged by a pattern of patient trust and physician attentiveness. Patients did not object to physician control in the medical history and physical examination but trust is best engendered by being allowed to express their own thoughts early in the interview (Stiles et al., 1979). Frankel (1983) proposes that status, power and control may be facets of the relationship that are far less important conceptually than recognizing the mutual interdependence of inputs and outputs. "Without a good relationship the gathering of information, the defining of problems and the proposing of solutions are infinitely more difficult" (R.C.G.P.,1972; p 15). A good relationship brings satisfaction to the doctor as well as the patient and the view each has of the relationship is itself an outcome of consultation.

As Siegler (1982) notes, the doctor-patient relationship is not permanent, stable or unchanging but is instead a dynamic entity which is always in flux. As an outcome it exists only as a concept, since the relationship is always in the process of developing or dissolving. The developments can be influenced by events occurring within the consultation process, by changes in the attitudes of participants, or by changes in the social environment. Stankaitus (1987) for example, discusses the effect of consumerism on the doctor-patient relationship. He points to the change toward a more contractual relationship between two equals and suggests that the change has produced an increased probability of conflict between patient and doctor.

Outcome - Understanding

Communication among human beings has always had the potential for problems. How does one know that what one wants to impart is what some one else hears or understands (Rogers & Roethlisberger, 1957)? As Ley (1983) notes, one of the enduring problems in the field of health care is that of presenting patients with information about their illness in such a way they feel they have been informed. Two key factors in producing communication failure are the extent to which the patient understands the information presented and the extent to which the message is remembered (Ley, 1983). Ley cites patient reports, general medical knowledge tests, direct tests of understanding and readability measurements as sources of data suggesting patients frequently fail to understand what they are told. An experimental intervention to increase patient understanding through extra information and explanation was successful and the increase in understanding was linked to greater satisfaction with the communication (Ley, Bradshaw, Kincey & Atherton, 1976).

Schraa and Dirks (1982) point to the effects of anxiety and motivation in patient comprehension. They suggest that high levels of anxiety may interfere with comprehension due to preoccupation or selectively tuned perception. On the other hand, lack of concern, independence and poor motivation may also mean the patient fails to attend to or utilize the information being given.

A quasi-experimental study with hypertensive patients showed that doctors could be taught to deal with these factors and achieve better success at controlling blood pressures (Inui, Yourtree & Williamson, 1976). Doctors were taught to focus on the perceptions and attitudes of patients rather than a historical and physical search for complications. After a single teaching session, tutored physicians spent more time on patient teaching than the control physicians and they obtained increases in patient knowledge with more appropriate conceptions of hypertension and its therapy. Ley and Spelman (1965) suggest that education of the patient is the responsibility of the doctor and can only serve to improve future communication with that patient. Cresswell (1983) also notes that a more 'medically aware patient' will be easier to communicate with and this can be achieved by leaflets, books, posters or even videos which supplement information from the doctor (Corboy, 1982; Bryant, 1980).

Outcome - Concern

Patients' varying concerns with regard to their illnesses need to be directly considered in explaining different responses to medical consultations (Fitzpatrick and Hopkins, 1983). Ben-Sira (1976) developed the argument that the lay person turns to the physician when he or she reaches a point where personal knowledge and the advice of his or her lay-reference group are considered insufficient. The manifest goal of the patient, then, is having an illness problem solved and this is often accompanied by a latent goal of having anxiety problems solved too.

Failures in respect of detecting and dealing with concerns were clearly evident in a study of patients attending a breast clinic in Oxford (Maguire, 1976). Trained observers monitored the visits of 450 women and reported on the experiences of those obtaining high scores on an anxiety scale measured before their appointment. Of the highly distressed patients, 69% gave clear clues to the surgeon that they were distressed and 25% also made definite statements about their worry or concern. Despite the cues, only 5% of the patients were explicitly asked about their concerns. For 25%, doctors gave the blanket reassurance that there was nothing to worry about, while the remaining 70% received no response to their anxiety at all. The majority of women interviewed after the consultation felt it would have helped had they been given greater opportunity to discuss their worries with the doctor.

Platt (1981) outlines the negative consequences of an interview between doctor and patient in which the information transfer was blocked and the patient's fears were not acknowledged. The patient emerged frightened and isolated, her family were angry and the doctor felt resentful - all in less than 10 minutes. This interaction involved a patient generally thought to be docile and pleasant and a doctor regarded by his colleagues as intelligent and sensitive! A more recent study involving parents of children seeking pediatric care, addressed the hypothesis that anxious patients would report less satisfaction with the visit and more negative perceptions of physician behaviour (Hatcher & Richtsmeier, 1990). The relationship between parent anxiety after the visit and perceptions of the visit were evaluated by multiple regression analysis. Parents were found to be more anxious after the visit when they felt the doctor had not performed a thorough physical examination and did not provide the information they wanted about their child's illness.

## COMMUNICATION SKILLS

> "... some doctors communicate better than others. Even at the level of purely factual information the possibility of misunderstanding must be considered ..." (R.C.G.P., 1972; p142.)

It has been demonstrated that the exchange of information between doctor and patient is important in terms of successful diagnosis and treatment, for the successful resolution of patient problems, and for positive outcomes from the consultation (Korsh, Gozzi & Francis, 1968; Carter, Inui, Kukull & Haigh, 1982; Stewart, 1984; Greenfield, Kaplan & Ware, 1985; Suchman & Mathews, 1988; Frankel & Beckman, 1989). That doctors need to possess and maintain appropriate interpersonal skills has been established by a number of sources (R.C.G.P., 1972; Byrne, 1976; Bennett, Knox & Morrison, 1978; Stewart & Roter, 1989a; Weston & Lipkin, 1989). The point we now need to consider is the acquisition of necessary skills by doctors and therefore turn attention to the issue of communication skills training and its place in basic medical education.

Logic would suggest that training doctors to communicate effectively with patients is best done as part of learning to be a doctor. If, as Byrne and Long (1976) concluded, doctors become fixed in their interaction style early in their medical careers it is better that they become fixed in an effective style than one which later requires modification.

It has been shown by many researchers that, even allowing for individual differences in ability and personality, communication skills can be learned and communication style improved (Carroll & Monroe, 1979; Pendleton & Wakeford, 1979, cited by Wakeford, 1983; Pendleton, Schofield, Tate & Havelock, 1984; Van Dalen, Zuidweg & Collet, 1989). Several British studies provide specific evidence that training in communication skills (Sanson-Fisher & Poole, 1979), interviewing skills (Maguire, 1979; Wright, Green, Fleetwood-Walker, Bishop, Wishart & Swire, 1980), and history-taking skills (Maguire, Clark & Jolley, 1977; Rutter & Maguire, 1976) can produce significant improvements in students' performance. The results of a study comparing training methods (Maguire, Roe, Goldberg, James, Hyde & O'Dowd, 1978) showed that feedback training based on either video tapes, audio tapes or supervisor ratings of the students' own performance led to a significant improvement in performance. A control group, which had normal tuition, showed no such improvement and some, in fact, performed more poorly.

This initial evaluation of methods showed the immediate benefits of some types of communication skills training and Maguire, Fairbairn & Fletcher (1986) were able to show that these benefits persist. In a follow up study of students five years after training (Maguire et al., 1986), it was evident that those taught communication skills with the use of constructive feedback techniques, maintained superiority in performance over students having only the conventional training in clerkship. However, even those trained with feedback performed at less than optimum levels on some measures.

This shows that communication skills training can be carried out effectively in a medical school, the benefits of such training are long term, that evaluation of methods is important and that there is much room for improvement.

The General Medical Council clearly endorses this view and makes very specific recommendations to the medical schools outlining the aim and purpose of communication skills training in medical education (G.M.C. Education Committee, 1980). However, it must be noted that they are only recommendations and the medical schools are not bound to provide any specific forms of training in communication skills or achieve any particular standards. As a result there has been a wide variety of approaches to the topic within basic medical education and there is no generalized pattern regarding the content, methods and assessment of teaching in communication skills.

Bradshaw (1978) notes that a similar situation exists in many other curriculum areas and suggests that no young doctor following a British course of study can graduate fully equipped medically. The basis for this assertion is that no course offers every aspect of medicine and each student is therefore bound to miss out on subjects that elsewhere are considered necessary for inclusion in the curriculum.

Wakeford (1983) notes that historically, communication skills training has depended more on the interests of particular members of staff rather than on school policy. Evidence of changing attitudes was seen in the responses to a survey of medical schools for the 1984-85 academic year (G.M.C., 1987) with the majority of the 27 schools indicating that they were giving specific training in communication skills. On the other hand there were still five schools which merely 'placed emphasis' on developing skills in communication and two which were only at the developmental stage of a communications skills programme.

McManus and Richards (1984) gathered data from medical school applicants and discovered similar concerns regarding the narrow selection criteria. A number of applicants felt that too much weight was given to academic achievement and little interest shown in applicants' character, temperament, or ability to communicate.

In March 1987 the Education Committee of the General Medical Council published the report of a Working Party which concluded that the 1980 Recommendations were not strong enough to promote the proper development of teaching in communication skills. As a result it was proposed that techniques of good interviewing and of giving information and advice to patients and their families should be taught and assessed within the curriculum of every medical school. Furthermore, the Working Party emphasized that in the final qualifying examinations for a medical degree, assessments should not simply be concerned with precise diagnosis and treatment but should also assess the communication skills of candidates.

Despite these proposals, little appeared to change and Smith (1989) notes that among recent medical graduates there is widespread dissatisfaction with medical education. Britain has not experienced the innovation in medical education that has occurred in other countries, notably Canada, Australia, USA and The Netherlands. At Maastricht Medical School students are prepared for their encounters with patients in a continuing skills programme which systematically builds up the necessary interpersonal skills (Van Dalen, Zuidweg & Collet, 1989). A large proportion of the training concerns communication skills and much of the foundation work is done in a skills laboratory before students advance to dealing with the complex intellectual and emotional demands of real patients.

In the current review of undergraduate medical education the G.M.C. Education Committee's Working Party on Basic Medical Education point to the need for a revised curriculum framework for British medical schools (G.M.C. Education Committee, 1991) . They suggest a structure based on a core curriculum, containing the knowledge that is fundamental to the understanding of medicine and the skills essential for its practice, flanked by a range of options to incorporate special interests. Communication skills are given a prominent place in the core curriculum outline.

It has been suggested that because most undergraduate medical experience is hospital based, problems are seen as purely physical rather than a mix of psychological, social and physical (Hasler, 1983). Another issue is the balance of teaching - Metcalfe (1983) reported that most students felt that 80% of their learning time is spent on diagnosis and only 20% on management of problems. This is reinforced by medical school teachers who tend to be more interested in the development of technical skill than social skill.

> "As far as general practice is concerned at present we have to assume that doctors have had no specific training [in communication skills]."
>
> (Hasler, 1983; p 253)

This is a major concern of the Royal College of General Practitioners whose council recently endorsed the Edinburgh Declaration of the World Federation for Medical Education.

> "The individual patient should be able to expect a doctor trained as an attentive listener, a careful observer, a sensitive communicator and an effective clinician; (R.C.G.P., 1990; p3)

To fulfil these expectations medical schools must pay continuing attention to communication and increased importance must be given to communication skills in the medical curriculum.

# CHAPTER 3

## DOCTOR-PATIENT COMMUNICATION: A FIELD STUDY TO DETERMINE THE LAY VIEW

### INTRODUCTION

Stewart and Roter (1989b) make two salient points about studies on doctor-patient communication. Firstly, studies have not generally been informed by theoretical models of optimal communication; and secondly, research findings have had a dubious relevance to educators. One could extend this and point out many have also had dubious relevance to practitioners and patients. Korsch (1989), for example, speaks of the need to directly address the clinical problems of everyday medical practice. Defining what is and is not important within consultation is now a major research goal; one which merits direct measurement rather than more attempts to correlate conceptually discrete process variables with a variety of outcomes.

What is needed are descriptive systems more appropriate to clinical process. This requires qualitative consideration of clinical encounters to identify appropriate and effective physician behaviour. Describing the effects of such behaviours will help identify where better use can be made of available resources (Wright, 1991).

To date, much of the research on information in consultation has relied on coding schemes and content categories to measure the quantity of information exchanged without reference to relevance or need (Stiles ,Putnam, James & Wolf, 1979; Stiles, Putnam, Wolf & James, 1979; Stiles, Putnam & Jacob, 1984; Carter, Inui, Kukull & Haigh, 1982; Roter, 1977; Bain, 1976; Tuckett, Boulton, Olson & Williams, 1985; Greenfield, Kaplan & Ware, 1985). The rating or categorising of the encounter involves 'objective' judgments by third party observers, which usually reflect prevailing clinical wisdom and fail to consider the patient's view of consultation. Patients are, however, asked to provide some outcome data, especially regarding satisfaction. Reported relationships between process and outcome are, therefore, often a mixture of objective and subjective measures.

One of the other main problems with the studies listed above is that specific clinical settings are involved. This means that patients are often being asked about health care by a researcher who is seen as part of the clinical setting which provides the care. There is, in fact, well documented evidence that many patients are reluctant to express any critical comments about their health care (Fitzpatrick & Hopkins, 1983). This suggests that many of the reported levels of dissatisfaction may seriously underrate the actual levels of dissatisfaction among lay people and raises the possibility of unfounded professional complacency. In the case of Tuckett et al. (1985), the selection of suitable cases for study pruned the sample to only 31% of its original size, making it less than representative regarding general consultation. Lastly, all the studies required the approval of participating physicians, again limiting the generality of findings and raising the possibility that the encounters studied were not typical of those experienced by patients in general.

The present study responds to the need for greater contribution of patients' views in assessing the quality of primary health care (Secretaries of State, 1989; Hopkins, 1990). It presents a field study undertaken among the lay public, away from the confines of surgeries, clinics and wards, to investigate the role of information exchange in consultation. The move to entirely subjective reports will provide meaningful and relevant data and it should be noted that measures of people's own perceptions and views are potentially as robust, in terms of measurement reliability, as other more conventional measures (Feinstein, 1977).

The study which follows has two parts: The focus of attention in part I is on the physician behaviours involved in the delivery of effective information exchange, rather than the commodity of information itself. The aim is to identify specific behavioural elements which are consistent with patients' needs for information exchange, and which should be utilized to maximize patient outcomes. This part of the study seeks to answer three specific research questions:

1) Do patients require doctors to engage in behaviours which facilitate information-exchange?
2) Do doctors often fail to produce these behaviours in consultation?
3) Do information-exchange behaviours provide a means of differentiating good consultation experiences from bad ones?

The study, as a whole, is guided by the information-processing model of communication, thus patient variables are also of interest. Part II looks at patient characteristics associated with high levels of satisfaction and the patients' view of their own contribution to information exchange.

METHOD

Subjects: The respondents were 100 York residents; 31 male and 69 female, who were contacted in their own homes. These people constituted a random sample, drawn using a cluster sampling technique (Frankel, 1983), based on twenty start addresses picked at random from the York telephone directory. Data were collected from five households in each of the 20 clusters areas resulting in an overall equal probability of selection sample design (epsem).

These steps ensured a random sample, yet the majority of subjects are female and in terms of the national population profile males are under-represented. This is not considered problematic for two reasons: Firstly, there is no compelling evidence that males and females differ in their needs or desire for information in consultation. Secondly, it has been reported that between the ages of 15 and 45, females consult doctors about twice as frequently as men (Roberts, 1985). Thus, a predominantly female sample may, in effect, be representative of the everyday consulting population.

Ages of the subjects ranged from 15 years to over 65, with a distribution similar to that of the total UK population (Office of Population Censuses and Surveys, 1991). The majority had 'average' or 'good' health (29% and 50% respectively) and only a few subjects rated their health as poor (3%).

Fifty-five percent of respondents had no formal qualifications, while 26% had at least one degree; the remaining 19% had either undertaken work related training or held vocational certificates. A total of 151 people were asked to take part in the survey before 100 questionnaires were available for analysis. This constitutes a reasonable response rate of 66.7%, perhaps reflecting public interest in the topic under investigation.

Materials: The main survey instrument was a customized questionnaire (see appendix A) designed to investigate three aspects of the medical consultation: 1) Doctors' information-exchange behaviours; 2) Good and bad experiences; and 3) Patient input to the consultation.

To obtain data direct from the respondents, without any intermediate classification or interpretation schemes, it was necessary to adopt a strict yes/no format, with a forced choice and indecision coded as no answer. This follows the lead of Dohrenwend (1965) who found that closed questions were not inferior to open questions, that closed responses contain no less self revelation in subjective evaluation and that the use of closed questions did not obtain results of any less depth or validity than for open questions. Even so, within the main instrument there were opportunities for respondents to make open answers or comments which were recorded for analysis as appropriate.

There were competing considerations in designing a questionnaire with this format. Firstly, concern about response bias and secondly, awareness that people will tend to avoid criticizing the doctors. The latter was especially problematic in the questions asking about physician failure. It was decided to resolve the difficulties by alternating the questions about desire for behaviours and performance of them and also by constructing the performance items in terms of failure. This means that a yes answer indicates failure and a no suggests the doctors perform well; thus the tendencies should counteract one another. It is important to note that the questionnaire was not concerned with occasional failures but sought to identify frequent or persistent failure in behaviours important to patients.

Apart from these considerations every attempt was made to make the questions straightforward and easy to understand (Wilson & Patterson, 1968). Items were selected on the basis of existing literature and a trial of open questions conducted with twelve householders. All items have high face validity and as the questionnaire represents something of a new step in doctor-patient research, the issues of concurrent and predictive validity were considered extrinsic.

Procedure: The survey was conducted over a period of five weeks and included evening and weekend sessions as well as day-time contacts. Each respondent was given a brief explanation of the nature of the research and provided with a typed consent form (see appendix A). Once informed consent had been obtained, the questionnaire was administered and demographic details completed. The subject was then asked to initial the form, to indicate that consent was given for use of the data. Throughout the survey, respondents were encouraged to provide a yes or no answer but they were not prompted in any way. 'Don't know' answers were accepted and coded as no answer. The survey terminated after 100 questionnaires had been completed; there were, at most, only 3 missing values for any one item making analysis relatively straightforward.

## RESULTS

Once the data set was complete, the first task was to look at the responses for evidence of bias. An extra boolean coding unit was embedded in the section measuring desire for information-exchange behaviours and perceptions of failure. For each respondent this contained either 1 for the use of both yes and no answers or 0 for exclusively yes answers. Ninety-three percent of the respondents used both yes and no answers; apparently reflecting their true opinions rather than a response set. The remaining 7% gave exclusively yes answers and judging from the open comments this indicated a negative view of physician performance, rather than a tendency to acquiesce.

### Part I

*Do patients require doctors to engage in behaviours which facilitate information-exchange?*

There was widespread agreement among respondents that doctors should, in fact, engage in all 12 behaviours which facilitate and encourage the flow of information to and from patients. All items were supported by 95% or more of respondents, providing a clear indication of the importance placed on information exchange in consultation.

Table 3.1 shows clearly the large numbers of respondents who believed that doctors should engage in all 12 consultation actions as proposed in the questionnaire. Notably, there was 100% support of three items with all respondents believing that doctors should give patients an opportunity to explain their health problems, tell patients what has caused the problems and also warn about any side effects of medication.

Additionally, there was almost total support for the propositions that doctors should take patients seriously, find out what they want to know and provide at least a diagnosis for the illness.

Perhaps surprisingly, items receiving the least support were those of getting a sympathetic response to health needs and being told about the expected course of the condition. These items rated even less support than being informed about treatment alternatives or the doctor being interested in hearing how the patient feels.

Table 3.1. Proportions of respondents expressing beliefs that doctors should engage in proposed behaviours and the levels of perceived general failure.

| ACTION FOR DOCTORS | DOCTORS SHOULD DO THIS | DOCTORS SHOULD DO THIS BUT OFTEN FAIL |
|---|---|---|
| Find out what you want to know & make sure you understand | 98% | 55.1% |
| Explain what treatments are available | 96% | 52.0% |
| Tell you what to expect as you get better or worse | 95% | 50.5% |
| Warn about any side effects of medication | 100% | 48.0% |
| Give you an opportunity to properly explain your health problems | 100% | 44.0% |
| Take you seriously and consider your ideas & concerns | 99% | 41.4% |
| Explain fully about any tests or procedures you have to have | 97% | 41.2% |
| Be interested in knowing how you feel | 97% | 40.2% |
| Say what causes the problem so you can take care in the future | 100% | 39.0% |
| Be sympathetic to your health needs | 95% | 38.9% |
| Provide a diagnosis or explanation of what is wrong with you | 99% | 37.4% |
| Suggest the best treatment say how it works and what you have to do | 97% | 36.5% |

*Do doctors routinely display these behaviours in consultation?*

Despite the general consensus that doctors should engage in information exchange, the present study revealed that in many cases they don't do so. Responses regarding doctors' actual performance on the items are also shown on table 3.1 and the levels of perceived failure are generally high. The items are listed in descending order of perceived failure, calculated as the percentage of people who thought the action should be undertaken but that doctors often fail to do so.

The majority of respondents (55.1%) believe that doctors often fail to provide the information the patient actually wants. Similar proportions of respondents also feel that doctors don't explain the treatment alternatives (52%) or provide information about how the patient's condition will develop as it gets better or worse (50.5%).

Despite the unanimous verdict that doctors should inform fully about side effects, nearly half of the respondents (48%) report that doctors generally fail to do this. Patient input was also fully endorsed and yet 44% of respondents felt doctors don't give patients an opportunity to properly explain their health problems.

Respondents were pretty sceptical about the doctors' responses to what patients say to them and failures are reported for taking patients seriously (41.4%); being interested in how they feel (40.2%); and being sympathetic to health needs (38.9%). Furthermore, sizeable proportions of the sample also felt doctors fail to explain about tests and procedures (41.2%); discuss causation of problems (39%); provide a diagnosis (37.4%); or explain the treatment choice (36.5%).

These results are clearly indicative of widespread failure by doctors to engage in a number of strongly desired behaviours. Doctors do not appear to be routinely attempting to facilitate mutual information flow and often fail to adequately exchange information with their patients.

Doctors' lack of commitment to information exchange in consultation was further born out by analysis of the comments respondents made when asked if there was anything they would like to add to the survey. Twelve people complained that doctors don't listen; 17 thought consultations were characterized by a lack of communication; 12 found doctors superior or arrogant; and 21 were critical of doctors not having enough time to spend in consultation. Only 21 respondents actually noted they were satisfied with the medical care of doctors.

Patients' actual comments were perhaps more revealing of the range and nature of criticisms and a number are included here:

R67 "Doctors could definitely explain more and also credit people with some common sense and intelligence."

R54 "They tend to treat you a bit inferiorly, as if you don't know what's going on."

R7 "Generally I get very irritated [with doctors] and feel they are distant and you can't really give them all the information you want to."

R2 "People go away dissatisfied, feeling the diagnosis doesn't really reflect the problem because the doctor doesn't listen to what they are saying."

R10 "Patients asking 'too many' questions or offering opinions are seen as an annoyance."

R20 "[My] last doctor had no time to listen. He was incompetent!"

R52 "They need to sit down and take more time to explain."

R21 "There is an unwillingness to give information, especially unwillingness to face failure, to face the fact of mortality."

R17 "Not given enough information - just medication."

Clearly, the present study provides conclusive evidence that the majority of patients do consider information about their illnesses to be important and are aware of failures in information exchange within medical consultation. Furthermore, the spontaneous comments of respondents suggest that such failures are the source of some considerable dissatisfaction.

*Do information-exchange behaviours provide a means of differentiating good consultation experiences from bad ones?* The content analysis of good and bad experiences which follows, was restricted to the cases where both types of experience had been recalled (n=32). This provides a repeated measures comparison, within subjects, for the content of experience. Initial results, from a comparison of mean scores, showed that the good and bad experiences were significantly different, for all aspects of consultation included in the questionnaire.

As table 3.2 shows, good experiences invariably involved 'good' doctors who were sympathetic, caring and without exception gave patients an opportunity to fully explain their problems. Additionally, in all good consultations patients felt able to present all the available information to the doctor who listened to it, acted on it and appeared to have taken all the patients information into account. Clearly, being given the opportunity to fully explain problems to the doctor is important to patients and is viewed favourably as being consistent with good medical practice.

Table 3.2 also shows that there was, generally, a high level of information provided by doctors in reports of good consultations, with 94% of patients reporting that they were given all the information that they required. In 97% of cases, patients received 'good' advice on what to do about their problem and 94% had been given information about the diagnosis.

For 93% of good experiences the proposed treatment was effective and for 90% of cases the treatment had been adequately explained, including side effects in 72% of cases. Discussion of the cause of the problem occurred in 87% of good consultations and information about treatment options was provided in 75% of cases. By contrast, the most common doctor characteristics in bad experiences (also shown on table 3.2) were insensitivity (77%) and arrogance (65%). In only 50% of cases was the patient given an opportunity to fully explain their problem and it was relatively seldom that the doctor appeared to take the patients' information into account (29%). For only 22% of bad consultations did the doctor provide all the information the patient required and similarly the physician was considered a 'good' doctor in only 22% of bad experiences.

Table 3.2. Mean scores (percentage equivalent) for good and bad experiences on questionnaire items.

| CONTENT OF ITEM | GOOD | BAD | t | SIG_ |
|---|---|---|---|---|
| Was the doctor available when needed | 1.00 | 0.66 | 4.03 | 0.002 |
| Was the patient given the opportunity to fully explain the problem | 1.00 | 0.50 | 5.57 | 0.000 |
| Was all available information about patient & problem given to doctor | 1.00 | 0.77 | 3.07 | 0.032 |
| Did he listen to it | 1.00 | 0.45 | 6.13 | 0.000 |
| Did he act on it | 1.00 | 0.40 | 6.17 | 0.000 |
| Did the doctor appear to take account of all infomation given to him | 1.00 | 0.29 | 8.70 | 0.000 |
| Did the doctor provide adequate information about causation of problem | 0.87 | 0.22 | 6.90 | 0.000 |
| His diagnosis | 0.94 | 0.26 | 7.53 | 0.000 |
| All treatment options | 0.75 | 0.13 | 6.39 | 0.000 |
| The best treatment and why | 0.90 | 0.19 | 7.89 | 0.000 |
| All possible side effects | 0.72 | 0.13 | 5.76 | 0.000 |
| Did the doctor advise the patient on what to do about the problem | 0.97 | 0.41 | 6.01 | 0.000 |
| Was the treatment effective | 0.93 | 0.31 | 6.40 | 0.000 |
| Was the advice any good | 0.97 | 0.19 | 10.18 | 0.000 |
| Did the doctor arrange for further tests or procedures | 0.84 | 0.28 | 5.29 | 0.000 |
| Did he provide information about what was involved or might be learned | 0.84 | 0.06 | 9.77 | 0.000 |
| Did the doctor check that the patient understood all he had been told | 0.81 | 0.41 | 3.61 | 0.006 |
| Did the doctor tell the patient all that he/she wanted to know | 0.94 | 0.22 | 8.35 | 0.000 |
| Was the doctor - Sympathetic | 1.00 | 0.29 | 8.70 | 0.000 |
| Arrogant | 0.00 | 0.65 | 7.39 | 0.000 |
| Caring | 1.00 | 0.32 | 8.07 | 0.000 |
| Insensitive | 0.00 | 0.77 | 10.14 | 0.000 |
| A good doctor | 1.00 | 0.22 | 10.52 | 0.000 |

There were, generally, low levels of information provided by doctors in reports of bad consultations with only 41% of patients receiving advice on what to do about their problem and only 19% receiving good advice. Only 26% of patients report having been given information about the diagnosis in bad consultations and a mere 22% were informed about the cause of their problems. Even fewer were informed about the proposed treatment (19%), alternative treatments (13%) or side effects (13%). The treatment prescribed by the doctor was effective in only 31% of the reports of bad consultations.

One notable difference between good and bad consultations occurred in respect of tests or procedures for more information or relief of the problem. These were undertaken by the doctor in 84% of the good consultations and in each of these cases the patient was given information about what was involved or what might be learned from them (84%). Such tests or procedures were arranged in only 28% of the bad consultations and information about these was provided in only few cases (6%). This means that in bad consultations, more than three-quarters of the patients who were sent for tests or procedures were not provided with information about what was involved or what the point of them was.

Table 3.3 lists the aspects of consultation in order of decreasing difference between good and bad consultations. The criteria of perceived doctor competence and sensitivity together with the provision of good advice and adequate information are most different for good and bad consultations ($U < 0.4$).

Following this are differences in the doctor's appearance of taking patient information into account and being sympathetic ($U < 0.5$). Slightly less different are the doctor characteristic of caring, his or her provision of explanations about the best treatment, side effects and other options, and perceived arrogance or lack of it ($U < 0.55$).

The next group of items on table 3.3 includes the patient's opportunity to explain his or her problem fully and the doctor's response in listening to and acting on the information provided. Also at a similar level of difference between good and bad consultations is the provision of an explanation by the doctor about the diagnosis and the proposal of an effective treatment ($U < 0.6$).

Items with the least difference between good and bad experiences include an explanation of the cause of the problem by the doctor, the giving of advice on what to do about the problem and the utilization of further tests or procedures ($U < 0.7$). Finally, there was little difference between good and bad consultations for doctors checking that patients had understood what they had been told ($U = 0.82$).

Table 3.3. Aspects of consultation which differ in occurrence between good and bad consultations in descending order determined by magnitude of Wilk's Lambda.

| ITEM NO | ASPECT COVERED | WILK'S LAMBDA |
|---|---|---|
| (22) | doctor is a 'good doctor, | 0.36364 |
| (23) | doctor is sensitive | 0.36364 |
| (14) | doctor provides good advice | 0.38149 |
| (18) | doctor tells the patient all he/she wants to know | 0.38149 |
| (6) | doctor appears to take account of the information given | 0.45714 |
| (19) | doctor is sympathetic | 0.45714 |
| (21) | doctor is caring | 0.50000 |
| (11) | doctor explains best treatment | 0.50207 |
| (10) | " " side effects | 0.53977 |
| (9) | " " treatment options | 0.53977 |
| (20) | doctor is arrogant | 0.54054 |
| (2) | patient given opportunity to explain problem fully | 0.57895 |
| (4) | doctor listens | 0.57895 |
| (5) | doctor acts on information | 0.57895 |
| (8) | doctor explains diagnosis | 0.58297 |
| (13) | treatment is effective | 0.58297 |
| (7) | doctor explains cause of problem | 0.60138 |
| (12) | doctor advises what to do | 0.64229 |
| (15) | doctor arranges tests/procedures | 0.68966 |
| (17) | doctor checks patient understands | 0.81805 |

From the forgoing analyses, it is clear that the descriptions of good and bad consultations differ on a number of dimensions including the availability of service and outcome. In order to be useful in practice, though, it is necessary to find a means of differentiating between good and bad experiences in terms of the doctor's actions rather than the doctor's characteristics. To this end, a discriminant analysis was undertaken on the subset of items which related to the doctor's actions in facilitating information flow.

Although the linear discriminant function assumes the variables are from multivariate normal distributions, most evidence suggests that it performs reasonably well in the case of dichotomous variables (Gilbert, 1968; Moore, 1973). Based on unstandardized canonical discriminant function coefficients, the discriminant function takes the general form:

$$D = -3.96 + 0.65(18) + 1.96(6) + 0.7(11) - 0.17(8) + 2.21(10) + 0.89(7) - 1.68(9) + 1.33(2) + 0.69(12)$$

Table 3.4 shows the pooled-within-groups correlations between discriminating variables and the canonical discriminant function. It is clear that the doctor's provision of required information is the best predictor of group membership (r = 0.5276), followed by the doctor's response in taking account of the information which patients provide (r = 0.51230). Treatment information ranks next (r = 0.47189) with information about diagnosis (r = 0.40321) and side effects of medication (r = 0.40321) at middle ranking.

Lower ranking variables include information about the cause of the problem (r = 0.38942), alternative treatment options (r = 0.36288) and the patient's opportunity to fully explain the problem (r = 0.35079). The variable in the model having least predictive power for type of experience is the doctor's provision of advice on what to do about the problem (r = 0.33215)

Table 3.4. Variables ordered by size of pooled-within-groups correlations within the discriminant function.

| ITEM NO | VARIABLE | FUNCTION |
|---|---|---|
| (18) | doctor tells the patient all he/she wants to know | 0.52736 |
| (6) | doctor appears to take account of the information given | 0.51230 |
| (11) | doctor explains best treatment | 0.47189 |
| (10) | " " side effects | 0.40321 |
| (8) | doctor explains diagnosis | 0.40321 |
| (7) | doctor explains cause of problem | 0.38942 |
| (9) | doctor explains treatment options | 0.36288 |
| (2) | patient given opportunity to explain problem fully | 0.35079 |
| (12) | doctor advises what to do | 0.33215 |

The discriminant functions for good and bad experiences, evaluated at group means, are 2.19739 and -2.19739 respectively. Figure 3.1 shows clear separation of the types of experience achieved in the combined distribution of discriminant scores. It can be seen that only two bad experiences are misclassified as good experiences but that the remaining 56 cases (96.5%) are correctly classified using the discriminant function. The misclassification rate of only 6.9% of cases indicates the discriminant function is effective; performing ar far better than the chance rate of 50% misclassification, expected from two groups with equal prior probabilities.

```
      20 ≈                                         ≈
         |                          1              |
         |                          1              |
         |                          1              |
      15 ≈                          1              ≈
         |                          1              |
         |                          1              |
         |                          1              |
      10 ≈                          1              ≈
         |                          1              |
         |                          1              |
         |               2          1              |
       5 ≈               2          1              ≈
         |          2  2 2      2  11              |
         |          222222 2 2  1 111              |
         |          222222 222 211111              |
          X----≈----≈----≈----≈----≈----≈----≈----X
        Out -6.0 -4.0 -2.0   .0  2.0  4.0  6.0    Out
  Class   22222222222222222222211111111111111111111
Centroids                2          1
```

Fig 3.1. Combined groups stacked histogram for the canonical discriminant function.

Further evidence of the effectiveness of the discriminant function based on the information flow in consultation are the large eigenvalue (5.0010) associated with the function, and the large canonical correlation ($r = 0.9129$) between the discriminant scores and group membership. Furthermore, the small value of Wilk's Lambda ($U = 0.1666$, $p<0.0001$, $df=9$) shows that the difference between mean discriminant scores for the two groups is statistically significant.

These results contrast favourably with the results of a discriminant analysis of good and bad experiences based on the doctor characteristics of sympathy, arrogance, caring and sensitivity. This analysis yielded a discriminant function which correctly classified only 88.71% of cases with an associated eigenvalue of only 1.84. Although positive doctor characteristics are consistently reported for good consultations the information flow variables discriminated good and bad consultations more reliably and with less chance of error.

## DISCUSSION

The results of part I show quite clearly that the vast majority of people think doctors should be engaging in behaviours to facilitate and encourage information exchange. There is obviously widespread desire among patients for functional information exchange when they consult doctors. Unfortunately, the results also indicate that doctors often fail to engage in the desired behaviours. In many instances they are simply not responding to patient need.

Stiles (1989) discusses these points in his criticism of the long standing tradition of correlational research in doctor-patient communication. He points out that such methods overlook patient requirements and suggests that the use of correlation with an outcome variable as the sole criterion of a process variable's importance is fundamentally flawed. Indeed, it is commonly assumed that the only process components which are important are those which can be correlated with outcomes (Pendleton, 1983; Hall, Roter & Katz, 1987; Wasserman & Inui, 1983; Inui & Carter, 1985). Such an approach relies on the concept of process components being delivered randomly and has led to confusion and conflicting results (Inui & Carter, 1985). Thus, the error in reasoning is compounded and physicians responsiveness to patient requirements is also overlooked.

The present study takes both patient requirements and physician responsiveness into account and shows quite clearly that information-exchange behaviours are important process components within medical consultation. The behaviours considered in part I clearly contribute to the role lay society expects doctors to fulfil, thus, they define some of the elements of good doctoring. The current results are consistent with the view that physician conformity to required behaviour is an important source of patient satisfaction (Larsen & Rootman, 1976). In this way, the present study provides causative support for the correlations found between information flow and positive outcomes for satisfaction and compliance (Wolf, Putnam, James & Stiles, 1978; Berkanovic & Marcus, 1976; Kincey, Bradshaw & Ley, 1975; Woolley, Kane, Hughes & Wright, 1978; Davis, 1971; Carter, Inui, Kukull & Haigh, 1982; Roter, 1977; Stewart, 1984;).

Whether the present study is interpreted in terms of satisfaction or fulfilment of requirements, it is clear that the levels of patient discontent recorded here are higher than those found previously. Kincey, Bradshaw and Ley (1975) compared patient requirements and patient evaluation after consultation; they report that high levels of satisfaction are not sustained when specific aspects of the interaction are questioned. Regarding the doctor's provision of information only 56 % of patients in the Kincey et al. study felt their requirements were fully met. Drawing a similar construction, the present study indicates that regarding the physician's information-exchange behaviour only 25% of the respondents feel their requirements have been totally fulfilled.

A brief review of satisfaction research shows that general satisfaction levels have been as high as 96% and as low as 75% (Woolley, Kane, Hughes & Wright, 1978; Evans, Kiellerup, Stanley, Burrows & Sweet, 1987; Korsch, Gozzi & Francis, 1968; Ware & Hays, 1988). With respect to dissatisfaction, the highest report is 20% of patients having criticisms of their doctor (Cartwright, 1964). The lowest levels were recorded in a recent study where only 1% of patients gave neutral or dissatisfied responses to questions regarding doctors' explanations or understanding (Savage & Armstrong, 1990). In the present study 75% of the respondents have some criticism of the consultation performance of doctors.

It is clear from the present findings that good and bad consultations can be differentiated on the basis of actions which facilitate or enhance information exchange. These findings have further implications in terms of satisfaction with medical consultation and also call in to question the suggestion that patients are unable to judge the instrumental components of physicians' behaviour (Ben-Sira, 1976; 1980).

Roter, Hall and Katz (1987) also reported that physician task behaviours, not their socioemotional ones, dominate subjects' impressions and satisfaction is more strongly predicted by task-oriented communications. Although the affective characteristics of doctor behaviour can be used to distinguish between good and bad experiences, the results of the present study suggest that the patient attributes favourable or unfavourable characteristics to the doctor in light of his or her performance in terms of information exchange. Thus, the doctor who provides the information the patient requires and appears to take account of what the patient says, will be seen as a good, caring, sympathetic and sensitive doctor. At the other end of the scale, a doctor who brushes aside patient input and withholds information will be classed as arrogant, insensitive and uncaring; a prime candidate for an unsatisfactory relationship.

The finding that information-exchange behaviours provide a more effective means of discriminating between good and bad consultations than do the doctors' characteristics has clear significance for social skills training. Personality traits are generally held to be stable, enduring characteristics which are resistant to change. As such, they are not readily taught or learned in terms of social skill. One of the most common arguments offered against the social skills approach is that communication skill is a feature which 'you either have or you don't'. This makes the question 'what are the skills that should be taught?' centrally relevant to the development of a social skills programme.

The present study provides a conceptual and theoretical analysis of consultation which suggests that a focus on information-exchange behaviours would make the social skills approach truly viable. The results are also consistent with the view which Maguire and his colleagues developed over time (Maguire, 1979; Maguire, Clarke & Jolley, 1977; Maguire, Fairbairn & Fletcher, 1986); information-giving behaviours and information-getting behaviours are part of the doctor's quintessential function. Unlike personality traits, these behaviours are amenable to change and can be learned as part of basic medical education. The implication being that early training in these behaviours and a commitment to practise them in clinical situations would lead to their eventual spread throughout the medical profession. In time there could be new interaction standards applying in the field of doctor-patient communication.

One other notable aspect of the current findings is that patients are more concerned with getting the particular information they want than with logging up a vast check-list of informative items. Many authors have noted that patients desire as much information as possible (Waitzkin, 1985; Tuckett, Boulton, Olson & Williams, 1985; Boreham & Gibson, 1978) but in practice it is the specific information they require which is of importance. This clearly has implications for analysis of content where informative utterances are summed and raises the possibility that more information may well be better but that more of the desired information is best.

It suggests that future research should focus on the quality of information as much as on the quantity transmitted; and this may mean more subjective measures involving the patients themselves. That this hasn't occurred more often is somewhat surprising since Evans et al. (1985) proposed that evaluations of the effectiveness of doctors' communication should examine patient feelings and behaviours following consultation. Results of the present study provide convincing evidence that patients and doctors do need to engage in a process of functional information exchange for consultations to be effective and satisfying in achieving their aims.

RESULTS

Part II

*Factors associated with perceptions of failure:*
In the previous analysis, it was noted that for each of the information tasks, a large proportion of subjects felt doctors often fail to engage in the behaviour mentioned. However, there was also a substantial minority of respondents who felt that doctors don't fail at any of the tasks. Thus, it is of interest to look at the ways in which the subjects who were consistently uncritical differed from those with critical attitudes. Comparisons between the group of respondents (25%) who perceived no failure and those perceiving some failure (75%), in terms of personal characteristics are shown on table 3.5.

The mean age ranking of the group perceiving no failures on the part of doctors was 5.2 on a scale from 1 = under 16 to 7 = over 65. The mean age ranking for the group perceiving some failure on the part of doctors was 3.76. The means for the two groups were significantly different ($t=3.82$, $p<0.001$, $df=95$) with the no failure group having an average age rating of 46-55 years while for the failure perceiving group it was only 26-35 years.

There were no significant differences between the groups in terms of qualifications, health or proportion of females.

Table 3.5. Comparison of mean ratings and percentage scores on demographic variables between subjects perceiving no failure and those perceiving some failure on the part of doctors.

| | NO FAILURE (n=25) | SOME FAILURE (n=72) | SIG |
|---|---|---|---|
| MEAN AGE RATING | 5.2 (46-55) | 3.76 (26-35) | 0.000 |
| MEAN QUALIFICATION RATING | 1.88 | 2.18 | n.s |
| MEAN HEALTH RATING | 3.36 | 3.65 | n.s |
| PERCENT FEMALE | 80% | 65% | n.s. |
| BAD EXPERIENCE RECALLED | 16% | 56% | 0.003 |
| GOOD EXPERIENCE RECALLED | 72% | 62.5% | n.s. |

Three cases were eliminated as they had missing values for the failure questions.

However, the comparison of the recall of bad experiences, shown on table 3.5, indicates that the no failure group were significantly less likely to be able to recall having a bad experience with a doctor than the group which perceived some failure (Chi-square = 11.69, $p<0.01$, df=1). Furthermore, by extracting the Lambda statistic it was shown that a 26% reduction in error is achieved when perception of failure is used to predict whether or not a person has had a bad experience with doctors (U=0.26087). There was no significant difference in the incidence of a good experience for the two groups.

To further explore the relationship between prior experience and critical attitudes, the mean number of items scored as perceived failures were broken down according to respondents' recall of consultation experiences. Subjects were asked if they had ever had a particularly bad experience (n=48) or a particularly good experience (n=64) and this gave rise to the four combinations of experience shown on table 3.6.

Table 3.6. Mean number of items on which doctors are thought to often fail, according to prior experience.

| PRIOR EXPERIENCE | MEAN | N FOR GROUP | SIG DIFF FROM |
|---|---|---|---|
| 1. bad only | 7.40 | 15 (16) | group 4 |
| 2. bad & good | 6.32 | 31 (32) | group 4 |
| 3. no bad or good | 5.00 | 19 (20) | |
| 4. good only | 3.28 | 32 (32) | groups 1,2 |
| TOTAL | 5.23 | 97 (100) | . |

Three cases were eliminated from statistics due to missing values on failure items.

A one-way analysis of variance indicated that there is a significant difference between group means ($F=5.1301$, $p<0.01$) and Tukeys-HSD revealed that significant differences occurred on two of the six comparisons. However, it still remains that nearly half the sample surveyed (48%) had experienced a bad consultation which stood out in their memory and in many cases still caused anger and dismay.

*The patients' view of their own contribution to information exchange:*

One interesting aspect of the variables which discriminate good experiences from bad ones is that they may be viewed as enhancing patient power and increasing the ability of patients to participate in the process. However, the results of the present study indicate that patients are more ready to provide some types of input than others.

The selective nature of patient contribution to information exchange is clearly evident from the sample responses shown on table 3.7. Nearly all of the respondents (91%) tell their doctors all of the symptoms which they experience but only 47% share their views on what they think causes them. Even less, a mere 28% tell the doctor if they fear it might be a serious illness.

Table 3.7. Proportion of respondents providing the proposed types of information to the doctor.

| WHEN YOU SEE THE DOCTOR DO YOU USUALLY | YES |
|---|---|
| Tell the doctor all of your symptoms | 91% |
| Tell the doctor what you think causes them | 47% |
| Tell the doctor if you think it may be a serious illness | 28% |
| Tell the doctor all you have done about the problem so far | 80% |
| Mention everything that you think the doctor might need to know | 88% |
| Try to direct the doctor's attention to the matters most important to you | 83% |

Not all respondents (88%) actually mention everything they think the doctor might need to know and only 80% tell the doctor all they have done about the problem before coming to see him. However, 83% of the subjects do report trying to direct the doctor's attention to matters most important to themselves. Unfortunately, it is beyond the scope of this study to consider how effective they were. The results, in effect, show up the patients' own failures to engage in information exchange, indicating the problem is not simply confined to the doctors' inadequacies.

## DISCUSSION

The findings in part II show that critical attitudes among patients are associated with younger age and previous bad experience. On the one hand, it is likely that younger people are more dissatisfied, possibly due to changing attitudes, but that is only part of the equation. It may also be that a bad experience contributes to a critical attitude, or a critical attitude may mean that experiences are more likely to be considered unsatisfactory. The analysis of perceived failures according to prior experience suggests a greater awareness of failure by doctors to engage in required information-exchange behaviours. This is especially evident in cases where there is no good experience to modify perceptions.

It is clear, however, that information is important to patients; failures by doctors to engage in information exchange tasks are noted; and there exists the possibility of a relationship between types of experience and levels of perceived failure. In a sense both can be described as a continuum with positive and negative directions as shown on below.

```
                 EXPERIENCE OF CONSULTATION
GOOD ONLY                                          BAD ONLY
  <-------------------------+----------------------->
            positive                 negative
  FEW                                                MANY
                   PERCEPTIONS OF FAILURE
```

Lazare, Eisenthal and Wasserman (1975) propose that the clinician's task includes eliciting patient needs, collecting relevant data and by negotiation forming a relationship of mutual influence with the patient. In such an approach patient input would be of considerable importance; however, the results of the present study indicate that patients consciously fail to provide information that could materially affect the consultation. The majority of respondents were not inclined toward sharing information about their own ideas and concerns, yet, in a prominent guide to consultation it is precisely these issues that doctors are encouraged to explore (Pendleton, Schofield, Tate & Havelock, 1984).

The present findings do not allow consideration of whether patients would reveal their fears and opinions if asked, but it is likely that they would be economical with the truth. As one respondent noted, regarding her own omissions in informing doctors,

> "I don't always tell them things, especially if they might think it's daft or I've done the wrong thing!"

However, the present study does indicate that patients are willing to assume some level of participation. This was evident from the high proportion of respondents who reported that they usually try to direct the doctor's attention to matters most important to themselves. The present survey provides little information about patient motivations for engaging in this behaviour but the comment of one respondent suggests that it is less a matter of power seeking and more one of self preservation:

> "Doctors don't listen, therefore you have to direct their attention."

It is clear that patients operate according to some kind of implicit rules about what is and is not appropriate to offer into the consultation. Symptoms are rationally acceptable but less confidence is shown regarding the raising of ideas and concerns. Patients are obviously reluctant to be completely open with their doctors, yet, many of them do try to orient the encounter according to their own needs. From this is becomes apparent that the methods they adopt may tend to be subtle and their actions covert, thereby inadvertently contributing to communication difficulties rather than reducing them.

## SUMMARY OF CONCLUSIONS

A great deal of material has been covered in this chapter, yet the findings are clear and unambiguous. Information is important to patients in terms of what they feel able to offer to the doctor and what the doctor can provide for them. The concept of medical consultation as a process of information exchange is clearly justified and the evidence of the present study supports the theoretical model presented in chapter one in several ways.

Firstly, the information which the patient brings to the consultation has importance for both parties. It is well accepted that doctors need information from the patient for medical decision making and much debate has arisen regarding how he or she obtains this information. What the present study reveals is that information from the patient has intrinsic importance for the patient as well. Being able to properly explain one's own health needs is of critical importance to people seeking medical aid. People, clearly, do not attend with a mind full of unconnected items of information ripe for the doctor's picking, rather they come with a story about their health which they need to tell in order to make sure that the help they receive is appropriate to their needs.

Secondly, the respondents were overwhelming certain that doctors should be engaging in the suggested behaviours to facilitate and enhance information exchange. Information-giving was, in fact, found to be of considerable importance in the process of medical consultation and it was clearly deemed to be the doctor's job to deal with the information offered by the patient and to develop a coherent explanation and course of action.

Lastly, it was shown that the process of information exchange has a clear impact on the outcomes of consultation. It is possible to effectively discriminate between good and bad experiences on the basis of information exchange tasks. This opens up the possibility of greatly enhancing medical consultations by attending to behaviours which produce functional information exchange. Such a move would be cheap, easy to implement, require little extra training and preserve all the doctors' existing skills. Ideally, skills training should focus on developing information-exchange behaviours and it should be introduced early on in medical education.

What seems to be required is a reworking of attitudes to information exchange on both sides of the encounter.

Doctors need to admit and accept their patients' need to inform and be informed, and to make explicit moves to accommodate these aspects of consultation. For their part, patients need to meet their doctors with openness and honesty, revealing their own needs and concerns and adopting a realistic view of the doctor's role as a partner in consultation.

Full development of such an initiative would, however, be better undertaken following further research conducted at the time of consultation. This would provide an immediate perspective of information exchange within specific encounters and current perceptions regarding resulting outcomes. Such research would usefully contribute to the existing literature if it maintains a balanced perspective of the process of consultation explicitly incorporating the patients' point of view.

# CHAPTER 4

# A STUDY OF INFORMATION EXCHANGE IN CONSULTATION: THE PATIENTS' VIEW OF PERFORMANCE AND OUTCOMES

## INTRODUCTION

An explanation to the patient regarding the nature of his or her illness, the rationale of its management and the general prognosis is an essential part of the practice of medicine (Ernstene, 1957). This is the general view proposed by the information-processing model of chapter one, and clearly the results of the community survey in the previous chapter support this view. However, the study in chapter three investigated the macro-system of health care (Pascoe, 1983); a deliberate strategy to eliminate the influence of setting. Unfortunately, people don't always rate micro-systems and macro-systems consistently so there remains a need to assess specific instances of medical consultation.

There are both specific and general motivations for investigating the role of information flow in consultation and the impact that information-exchange behaviours have on the outcomes of consultation. Specifically, such a study would test several aspects of the model and generally, because the data produced within the practice of medicine is a clinical instrument with immense potential for improving medical care (Wright, 1991).

The "Working for Patients" document (Secretaries of State, 1989) suggests that the primary aim of the NHS is to provide the care that patients want. This means that patients must be included in the evaluation of medical care. When the patients' perspective is not taken into account the evaluation of services is incomplete and biased towards the providers' perspective (Larsen, Attkisson, Hargreaves & Nguyen, 1979).

There are, however, two main problems inherent in using patient evaluations; the first being the tendency of service recipients to positively evaluate the professional responsible for their care, regardless of the study method or factors considered (Linn, 1975; Fitzpatrick, 1991). The other main problem is the low relevance of much existing evaluative data for consultation management (Larsen et al., 1979).

Several studies of verbal exchange in the consultation have indicated that the bulk of the interaction is made up of information exchange (Bain, 1976; 1977; Cresswell, 1983; Roter, 1989), thus, it seems an appropriate focus for investigation. Certainly, the survey of Cartwright and Anderson in 1981 provided evidence that patients were attaching more importance to discussion and less to medication. Furthermore, correlational and comparative evidence suggests information exchange in consultation is related to a number of outcomes but the research has been dominated by studies involving third party observations, based on recordings of the event related to subjective reports of outcomes from participants.

Patient satisfaction has been found to be associated with explanatory processes (Eisenthal, Koopman & Lazare, 1983; Woolley, Kane, Hughes & Wright, 1978; Berkanovic & Marcus, 1976; Kincey, Bradshaw & Ley, 1975; Ley, Bradshaw, Kincey & Atherton, 1976; DiMatteo & Hayes, 1980). Emotional satisfaction with general practice consultations is associated with the patients' opportunity to tell their own story in their own words (Stiles, Putnam, Wolf & James, 1979). In addition, the percentage of physician statements within consultation that are factual is also positively correlated with reported satisfaction (Putnam, Stiles, Jacob & James, 1985). Ley (1982), further, suggests that patients will only be satisfied when their cognitive needs regarding diagnosis, etiology and treatment are met.

Compliance is another outcome of medical consultation which has attracted a great deal of research attention. Much of the literature assumes compliance is a favourable outcome (Carter, Inui, Kukull & Haigh, 1982; Zola, 1981; Heszen-Klemens, 1987), since failure to follow physician recommendations potentially jeopardizes patients' health, wastes doctors' time and increases health care costs (Kulik & Carlino, 1987). Much research has shown that the more information a patient is given the greater is the likelihood of compliance with medical treatment (Davis, 1971; Francis, Korsch & Morris, 1969; Tuckett, Boulton, Olson & Williams, 1985; Korsch, Gozzi & Francis, 1968). Ley (1982) suggests, though, that patient compliance should not necessarily be assumed to be desirable unless genuine informed consent has been obtained. However, there is relatively little research on how patients view treatment decisions (Kent & Dalgleish, 1986). Zola (1981) points out that to make the patient an ally in treatment the doctor needs to know where the patient is coming from; regard him or her as an intelligent adult; and look to the patient's own available resources.

Squier (1990) suggests compliance is the result of better understanding of health problems and the sharing of emotional concerns about the illness. Reduced concern has also been noted among patients who are satisfied with the doctor's examination and information provision (Hatcher & Richtsmeier, 1990; Evans, Kiellerup, Stanley, Burrows & Sweet, 1987).

From the doctors' perspective, information exchange is an inherent part of competence; both in terms of gaining and giving information. Model consultations in modern teaching assume that doctors should discuss, inform and explain as well as diagnose and treat (Pendleton, Schofield, Tate & Havelock, 1984; Levenstein, McCracken, McWhinney, Stewart & Brown, 1986; Kent & Dalgleish, 1986; Kraan, Crijnen, Zuidweg, van der Vleuten & Imbos, 1989). Pendleton et al.

(1984) conceive of these actions as 'tasks' to be performed within the consultation and a number of the items have parallels in the information-exchange behaviours studied in chapter three. Rating scales which evaluate task performance are generally used by doctors themselves for evaluation of students and peers. However, Weinman (1990) notes that different patients require different types and amounts of information and Stiles (1989) suggests research is needed on patient requirements within interviews, on physician responsiveness and how to improve the latter.

The present study uses rating scales for the evaluation of patient perceptions regarding performance of information-exchange tasks and subsequent outcomes of the consultation. This will provide data with a high degree of relevance for both doctors and patients and which can contribute to plans for consultation management. The aim is to test the following propositions, generated from the information-processing model of consultation.

1) Information tasks will be important to patients in the context of consultation.
2) Information task ratings will be predictive of reported satisfaction.
3) Ratings of information tasks will be differentially related to the set of outcome ratings.
4) The outcomes will cumulatively predict overall satisfaction.

Support for these propositions will provide support for the model and also provide a rational basis for the improvement of consultation management and a focus for the teaching of communication skills in medicine.

## METHOD

Subjects: Thirty-five doctor-patient pairs from the York area were included in the study. These were selected on the basis of the first 35 doctors to agree to the study, following contact by letter or telephone. A single patient was selected for each doctor from those attending at either a morning, afternoon or evening surgery.

The patient selection was random, on the basis of chance availability at the time when the researcher visited the surgery. Such a system has previously been shown to produce a range of diverse problems, typical of the GPs' caseload (Hays, 1989). Only three prospective participants declined participation; one due to lack of time for completing the questionnaire and one because of illiteracy, while the third gave no reason. One further chance selection was ruled out on the basis of his unstable mental condition and another patient was substituted. Timing for the approach was varied across early, middle and late in the session, but the variation was not systematic.

Despite the randomness applying to the patient selection, the doctor sample is potentially biased. Those agreeing to participate may well differ from those who declined, with respect to the dimensions under scrutiny. However, what the sample lacks in representativeness it makes up in variability and the participants constitute 38% of the available GP population for York.

There were 26 male and 9 female doctors aged between 26 and 55 years (across three age groupings) with a mean midpoint of 40 years. The majority were under 45 years (86%) and worked in partnerships or groups (94%); the remainder opted for single-handed practice. Length of time spent as a doctor ranged from one year to 23 years with a mean experience of seven years on the job.

Patients were mainly female (77%), aged between 16 and 'over 65' with an approximately normal distribution. The majority rated their health as average or better (87%). Most were consulting for minor (20%) or routine (60%) conditions and doctors rated the remaining 20% of problems as serious. The length of time spent as a patient of their current doctor ranged from the first visit to 20 years with a mean list entry of 5 years.

Materials: The consultation evaluation instrument (PCQ) was a questionnaire containing rating scales for the following information tasks (after Pendleton et al., 1984) and their level of importance as part of the consultation (essential, desirable or unimportant). The full PCQ is in appendix B.

1) Exploring patient ideas.
2) Dealing with patient concerns.
3) Exploring patient expectations regarding diagnosis and treatment.
4) Discussing of the effects of problems.
5) Explanation of etiology.
6) Explaining treatment.
7) Discussing side effects.
8) Outlining prognosis.

Outcomes were evaluated in the questionnaire as well and the following items were rated by patients:

1) Satisfaction.
2) Patient understanding of health problems.
3) Doctor's response to the patient.
4) Perceptions of appropriateness of treatment offered.
5) Treatment intentions.
6) Development of the relationship between doctor and patient.
7) Change in concern.
8) Information provision.

All task and outcome items were rated on a 7-point scale where 7 is high and 1 is low. The scales were anchored with pole statements such as 'no explanation given' and 'effects fully discussed'. The low poles were alternately presented to left then right of the scale to ensure a considered response and avoid set marking by the respondents.

Procedure: Doctors in practice as GPs in York were contacted by letter or phone and invited to take part in a 'consultation audit' study. Recruitment ceased when 35 doctors had agreed to take part and data collection then began. Each doctor nominated a surgery for participation, either morning, afternoon or evening and informed reception staff of the planned study. This meant that doctors and staff were aware of the date of participation but not which patient would participate. Arranging this ahead of time usually resulted in doctors forgetting the date of participation and reception staff remembering; thus reduced doctor awareness and ensured reception staff were convinced of the legitimacy of the study.

For each consultation studied the same procedure was followed; beginning with a toss of the dice to determine the timing of the visit (1 or 5 = early, 2 or 4 = middle and 3 or 6 = late in the surgery). At the surgery the reception staff were asked to point out the patient who was waiting to see the doctor and was due for consultation in two appointments time. This gave time to explain the study and gain informed consent before the patient was called. While the patient waited to see the doctor he or she also completed a general questionnaire (the PGQ) for use in a later study.

Each patient was assured that the doctor had given permission for the study but was also asked not to tell the doctor that they were the patient taking part. In most cases this worked satisfactorily to keep the doctor 'blind' but in two cases the doctor actually saw the researcher talking to the patient and realised who was involved. The ratings from these two instances were marked and later found to have no noticeable differences from the bulk of the other replies. In addition, the doctors commented that they had not knowingly changed their consulting styles; since the doctors also remained blind to the content of the evaluation it was decided to retain these results.

After the consultation the patient was given the PCQ to complete and the doctor was informed that his last patient had been the research participant. Both doctor and patient were thanked for their cooperation and any questions were answered.

## RESULTS

### Ratings of Information Task Performance:

The patients generally rated the doctors' performance highly for all the information tasks included in the questionnaire.

The notable exception being discussion of side effects of medication with a median score of 2 on a scale from side effects not discussed (1) to all possible side effects were discussed (7). Table 4.1 shows the range, mean and median ratings made by patients for all the information tasks in consultation and clearly, some individual patients felt their doctors had not done especially well.

Table 4.1. Patient ratings of doctor performance on information exchange tasks.

| TASK | RANGE | MEAN | MEDIAN |
|---|---|---|---|
| To explain the cause of problem | 1-7 | 6.2 | 7 |
| To explore patient ideas about the problem | 3-7 | 6.3 | 7 |
| To explore patient concerns | 2-7 | 6.6 | 7 |
| To explore patient expectations about diagnosis and treatment | 2-7 | 6.3 | 7 |
| To discuss effects of problems with patient | 4-7 | 6.7 | 7 |
| To explain the treatment and how it works | 2-7 | 6.5 | 7 |
| To discuss possible side effects | 1-7 | 3.7 | 2 |
| To inform the patient about what to expect as the condition gets better or worse | 1-7 | 5.8 | 7 |

Importance of Information Tasks:

The median patient rating for all of the information tasks was 3, indicating that most patients thought the tasks were essential and should, therefore, be undertaken as part of the consultation process. For all the tasks the mode of the distribution was 3, as well; the distributions were all negatively skewed.

Ratings of Consultation Outcomes:

The patients, generally, rated the outcomes highly, except reduction in concern which averaged only one point on a 7-point scale from not at all worried (1) to extremely worried (7). In fact, only 57% of the patients actually recorded a reduction in concern, however, none of them expressed any increase in concern. As table 4.2 shows, all median ratings were again 7, with the exception of concern, and a number of low ratings are again evident.

Table 4.2. Patient ratings of consultation outcomes.

| OUTCOME | RANGE | MEAN | MEDIAN |
|---|---|---|---|
| Reduction in concern | 0-6 | 1.6 | 1 |
| Appropriateness of treatment | 3-7 | 6.4 | 7 |
| Patient treatment intentions | 6-7 | 6.9 | 7 |
| Patient understanding | 2-7 | 6.4 | 7 |
| Doctor's response | 2-7 | 6.6 | 7 |
| Relationship | 3-7 | 6.7 | 7 |
| Personal satisfaction | 2-7 | 6.5 | 7 . |

Task Ratings and Satisfaction:

Four of the task ratings were strongly correlated with reported satisfaction, as table 4.3 clearly shows. The strongest direct relationship is between satisfaction and dealing with patient concerns (r=0.87), then exploring patient expectations (r=0.86), exploring patient ideas (r=0.75) and discussing effects of problems (r=0.72). The tasks of explaining treatment and discussing side effects were excluded from analysis because the large numbers of 'no prescribed treatment' and 'no side effects' caused casewise deletion of nearly a quarter of the sample.

Table 4.3. Correlation matrix for information task ratings and satisfaction.

| | Etiol | Ideas | Conc | Exp | Eff | Prog |
|---|---|---|---|---|---|---|
| Satisfaction | .10 | .75* | .87* | .86* | .72* | .14 |
| Etiology | | .37 | .10 | .10 | .40 | .85* |
| Ideas | | | .58* | .63* | .41 | .31 |
| Concerns | | | | .73* | .70* | .18 |
| Expectations | | | | | .77* | .09 |
| Effects | | | | | | .27 |

1-tailed significance: * - 0.001

From table 4.3 the intercorrelations between exploration of concerns, expectations and effects can clearly be seen and also that which exists between exploration of ideas and expectations. Despite these intercorrelations, a hierarchical multiple regression was undertaken to explore the relative contribution of information task variables to satisfaction, when combined. While only perfect multicollinearity is a formal problem (reducing the rank of the model) (Monge, 1980), multicollinearity above .70 can affect the magnitude of the respective regression coefficients. However, the model based on all tasks can also be interpreted in terms of $R^2$ and although the use of standard scoring units allows direct comparison of the beta weights in the regression analysis, the intercorrelations must be born in mind.

Table 4.4 shows the information task variables in order of increasing explanation of variance in satisfaction. The regression equation incorporating all six variables has an adjusted $R^2$ of 0.90, indicating that 90% of the variance in patient satisfaction can be explained by these factors.

Table 4.4. Information task variables in the regression equation predicting patient satisfaction.

| TASK | BETA | MULT R | $R^2$CHANGE |
|---|---|---|---|
| Explaining etiology | -.23 | .110 | .012 |
| Outlining prognosis | .06 | .114 | .002 |
| Exploring expectations | .14 | .866 | .737 |
| Exploring concerns | .36 | .928 | .110 |
| Discussing effects | .53 | .928 | .001 |
| Exploring patient ideas | .47 | .958 | .057 |

Clearly, discussions of etiology and prognosis have little predictive value for patient satisfaction but the performance on the remaining four information tasks appears to have direct impact on patient perceptions of satisfaction. Despite the statistical effects of multicollinearity, the exchange of information pertaining to patient expectations, concerns, and ideas each appear to make some unique contribution to satisfaction when the effects of the others are included in the prediction. The impact of discussing the effects of the problem appears to be minimal, indeed no difference than a chance increase in $R^2$, but the background theory suggests it should be retained in the model. Furthermore, the relationship between information tasks and satisfaction modelled by the regression equation is highly significant ($F=46.83$, $p<0.0001$).

Ratings Compared According to Satisfaction:

The forgoing analysis deals with the group as a whole which, as noted earlier, is made up of mainly well satisfied patients with few indications of low ratings on any variables. The following analysis takes the five patients rating satisfaction at less than 6 and compares their information task ratings with those of a group of five well satisfied patients. The groups were matched on health, age, length of time as a patient of the doctor, and sex. There was one exception with the sex matching of one pair; there were no male patients in the highly satisfied group with other similar characteristics to a male low satisfaction patient so a female patient was matched instead.

Table 4.5 shows clearly the lower scores among the low satisfaction group with respect to all the information task ratings; and the greater variance among the low satisfaction group scores. The low satisfaction group constitutes 14% of the sample; thus represents a sizeable minority, whose perceptions of doctor performance on information tasks translate into reduced satisfaction with the consultation overall.

Table 4.5. Comparison of ratings made by high satisfaction and low satisfaction groups.

| RATING | HIGH SATISFACTION MEAN | S.D. | LOW SATISFACTION MEAN | S.D. |
|---|---|---|---|---|
| Satisfaction | 7.0 | 0.0 | 3.6 | 1.1 |
| Expectations | 7.0 | 0.4 | 3.6 | 1.1 |
| Concerns | 7.0 | 0.4 | 4.8 | 1.9 |
| Ideas | 7.0 | 0.4 | 4.2 | 1.3 |
| Effects | 7.0 | 0.0 | 5.4 | 1.1 |
| Prognosis | 6.6 | 0.5 | 5.0 | 2.6 |
| Etiology | 7.0 | 0.0 | 5.6 | 1.1 |

Task Ratings and Outcome Measures:

In order to assess the differential impact of information tasks on outcome ratings, the set of tasks ratings were regressed on each of the outcome measures in turn. At this stage, treatment intentions were dropped from further analysis since the range for the whole sample was between 6 and 7, where 7 indicated an intention to comply fully with treatment. The variance for the whole sample was only 0.05; thus, there seemed little value in looking for associations between other variables and this almost constant value.

As the analysis was exploratory, a set of stepwise regressions were requested with a probability of F-to-enter set at 0.05. Although technically the assumption of homogeneity of variance was violated, multiple regression procedures are known to be highly robust to such violations (Bohrnstedt & Carter, 1971) and there was no threat to the analysis or interpretation of the statistics.

The results are summarised in table 4.6 and the differential impact of information tasks on outcome ratings is clearly evident. Explanation of etiology has no significant effect on any of the outcomes measured; outlining the prognosis is only related to the patient view of the doctor's response; and exploration of concerns is related to patient understanding, doctor's response and also the patient's belief about the appropriateness of treatment.

Exploration of patient expectations contributes to the views of treatment appropriateness, as well, and is the sole predictor for the relationship rating. In addition, the patient's feelings about being given full information is dependent on both discussion of the effects of problems and exploration of patient ideas. The 'goodness of fit' for each of these models are all highly significant.

Table 4.6. Information tasks with predictive power for each of the outcome measures.

| OUTCOME MEASURES | PREDICTOR TASKS | (beta) | ADJ $R^2$ |
|---|---|---|---|
| Patient understanding | Concerns | (.67) | 0.43* |
| Doctor's response | Concerns<br>Prognosis | (.72)<br>(.25) | 0.62* |
| Treatment appropriate | Expectations<br>Concerns | (.48)<br>(.44) | 0.73* |
| Relationship | Expectations | (.82) | 0.67* |
| Information given | Effects<br>Ideas | (.57)<br>(.29) | 0.52* |

* $p < 0.0001$

The outcome of change in concern was inappropriate for inclusion in the analysis because it was a constructed variable, calculated as the difference between concern before consultation and that reported after consultation. As such, the units of measurement were not directly comparable with the other scales. Intuitively, one would expect some kind of relationship between the act of dealing with patient concerns and resultant decrease in concerns. However, it is beyond the scope of the present study to demonstrate such a relationship because of the obvious impact of other variables such as the nature of the problem, justification for concern, and propensity for concern in the individual, none of which have been adequately controlled for.

The data did, however, allow a simple comparison of groups between those patients whose concerns had been fully dealt with and those whose had not. A Mann-Whitney U test, omitting cases where there was no initial concern, showed that patients whose concerns were fully dealt with were significantly more likely to have reduced levels of concern after the consultation than were the people whose concerns were not fully dealt with. The test was significant at the 0.05 level.

The Relationship Between Outcomes and Satisfaction.

The four measured outcomes had strong positive correlations with reported satisfaction. The patient's view of the appropriateness of treatment had the strongest direct relationship with satisfaction (r=.74), just slightly ahead of the relationship factor (r=.73). Next was the view of how seriously the doctor had taken the patient (r=.66) and lastly, the patient's perceived level of understanding (r=.64). Table 4.7 shows these direct relationships and also the intercorrelations between the outcome measures themselves.

Table 4.7. Correlation matrix for outcome measures and satisfaction.

| | SERIOUS | TREATMENT | RELATE | U'STAND |
|---|---|---|---|---|
| SATISFACTION | .66* | .74* | .73* | .64* |
| TAKEN SERIOUSLY | | .57* | .33 | .71* |
| TREATMENT APPROPRIATE | | | .77* | .57* |
| RELATIONSHIP | | | | .35 . |

* 1 - tailed significance: * - .001

To explore the combined impact of proposed outcomes from the IP model on patients' reported satisfaction, a hierarchical multiple regression was again undertaken with forced entry of all variables. Table 4.8 shows the outcome variables in order of increasing importance according to $R^2$ change.

Table 4.8. Outcome variables in the regression equation predicting reported satisfaction.

| OUTCOME | BETA | MULT R | $R^2$ CHANGE |
|---|---|---|---|
| Patient Understanding | .24 | .64 | .40 |
| Taken Seriously | .42 | .70 | .09 |
| Treatment Appropriate | .03 | .80 | .15 |
| Relationship | .87 | .86 | .11 . |

The adjusted $R^2$ for the resulting equation is .71 indicating that these four outcomes combined explain 71% of the variance in reported satisfaction. The combined model is highly significant ($F=20.84$, $p<0.0001$) but the results suggest that other factors are having a direct effect on satisfaction in addition to these proposed outcomes. Once again, it was not possible to include change in concern although the theoretical background points to this having some impact as an outcome.

A measure of information provision was taken as an extra variable besides the outcomes derived from the IP model. This attempted to create a score for fulfilment of individual information need. The mean rating for all patients was 6.3 and there was a modest correlation between information provision and satisfaction (r=.56).

Outcomes Compared According to Satisfaction:

Comparisons were again drawn between the subset of patients who reported low levels of satisfaction and the set of matched, highly satisfied people, this time using outcome measures as the basis of comparison. As table 4.9 shows, the patients reporting low satisfaction also tend to rate the other outcomes at lower levels, particularly the appropriateness of treatment and fulfilment of information needs. In contrast, the highly satisfied group rated all outcomes highly although scores for appropriateness of treatment and information provision showed greater variation due to some individuals rating at slightly lower than the maximum score.

Table 4.9. Comparison of outcome measures reported by high satisfaction and low satisfaction groups.

| | HIGH SATISFACTION | | LOW SATISFACTION | |
|---|---|---|---|---|
| OUTCOMES | MEAN | S.D. | MEAN | S.D. |
| Satisfaction | 7.0 | 0.0 | 3.6 | 1.1 |
| Understanding | 7.0 | 0.0 | 5.0 | 2.0 |
| Taken seriously | 7.0 | 0.0 | 5.4 | 1.9 |
| Treatment Appropriate | 6.6 | 0.5 | 4.4 | 1.7 |
| Relationship | 7.0 | 0.0 | 5.4 | 1.5 |
| Information provision | 6.4 | 0.5 | 4.6 | 2.4 . |

## DISCUSSION

The results of the present study indicate that the majority of patients are pretty well satisfied with their doctors and the consultation process generally. This was, to some extent, expected as patients were being canvassed at the point of service delivery and their reluctance to criticize has already been noted (Fitzpatrick & Hopkins, 1983). Many respondents rated doctors at the maximum for performance of information tasks and felt the outcomes were maximally positive as well. On the other hand, it was clear that a sizeable minority of patients considered the information tasks to be performed poorly, or not at all, and they also reported outcomes as less than optimal and were only marginally satisfied. The only task to be rated low across the whole sample was the discussion of possible side effects of treatment; something patients require but which doctors in the present study appear to avoid.

Joubert and Lasagna (1975) found 81% of the patients they surveyed wanted to be informed about the chances of dying from a normal dose of medicine, even if it were as low as 1 in 100,000. By contrast, only 32% of the doctor respondents in a more recent study favoured such full disclosure of side effects (Keown, Slovic & Lichtenstein, 1984). Physician arguments against informing patients about possible side effects are usually based on the low desirability of providing such information and the adverse effects that might ensue (Ley, 1988). These include undue anxiety or distress to patients, decreased compliance, and more complaints about side effects - none of which actually occurred in the eight studies of disclosure cited by Ley (1988). Many doctors also feel that emphasizing risk and offering alternate forms of treatment merely confuses and distracts the patient (Jaffe, 1969).

All the tasks considered in the present study were rated as essential by the majority of patients regardless of their ratings of performance or satisfaction. This provided evidence in support of the model and proposition 1: that information tasks will be important to patients in the context of consultation. The findings of chapter three, regarding the importance of information in consultation, are confirmed in the present study, showing that in this respect patients' ratings are consistent across the micro-system and macro-system of health care. These behaviours are important both generally and in specific encounters.

As noted, the high incidence of maximally positive evaluations of performance and outcomes was expected but the clear differentiation of the high and low satisfaction groups allows some speculation about the mechanisms involved. Pascoe (1983) discussed the available models of patient satisfaction and suggested three general categories: 1) value expectancy models, 2) discrepancy theories and 3) fulfilment theories. In their pure form none of these approaches has received strong empirical support but an associated expectancy model based on evaluative consistency (Festinger, 1962) looks like a useful alternative. The assimilation model of consumer satisfaction (Suprenant, 1977) suggests that discrepancies between patient expectations and doctors' performance might produce dissonance which patients (consumers) alleviate by adjusting perceptions of performance to match expectations. The model predicts that performance moderately lower than expectations will not result in dissatisfaction but that grosser inconsistency will. Thus, there is an element of latitude before poor performance will be acknowledged as such.

This assimilation model appears to be supported by the findings of the present study, with patients showing tolerance of some poor performance even in areas they consider important. It was shown that a large number of the doctors had performed poorly in the discussion of side effects of treatment and this task was considered important by patients; yet there was no apparent effect on overall satisfaction. By contrast, perceptions of widespread poor performance were translated into poor outcome ratings and low levels of satisfaction.

Support for proposition 2: that information task ratings will be predictive of satisfaction was provided by the analysis of information tasks regressed on satisfaction. The resulting equation suggests that doctors could sacrifice explanations of etiology and prognosis with little loss of satisfaction and might better direct their efforts to the exploration of ideas, concerns, expectations and effects. As found in the community survey of chapter three, the emphasis is once again shown to be on information exchange relating to specific patient circumstance rather than on abstract provision of medical information.

This is an important point to make in the context of medical consultation since time is usually at a premium and the provision of vast amounts of information to each patient poses problems of logistics. Such problems may be avoided by simply providing appropriate and relevant information based on patient need. Such a move offers efficiency and effectiveness in exchange for promoting functional information flow.

Certainly, the results of the present study confirm and amplify previous research showing the importance of clear and appropriate information from the doctor and patient (Eisenthal et al., 1983; Berkanovic & Marcus, 1976; Stiles, Putnam, Wolf & James, 1979). Although other factors besides information task performance may have had an impact on patient satisfaction, these variables alone account for 90% of the variation in reported satisfaction. This level of predictive value is much higher than for other published studies of association; but direct comparisons are not appropriate because previous work has exclusively used objective measures such as interaction analysis rather than asking for patients' assessments.

Regarding the other outcomes suggested by the information-processing model, it was clear that while the majority of patients rated them highly the means of the low satisfaction group were consistently lower. This group had also rated performance as less than optimal on all information tasks, suggesting an association between poor perceptions of doctor performance and poor ratings of outcomes. The multiple stepwise regressions showed that, in fact, each of the outcomes was significantly related to a subset of specific information tasks and within these subsets the tasks had differential impact.

Thus, the third proposition was supported and ratings of information tasks appear to be differentially related to the set of outcome ratings. This means that doctors could potentially manipulate outcomes by pursuing one or another actions in the consultation. For example, if the doctor wished to improve the likelihood of the patient viewing the treatment as appropriate then he could concentrate on exploration of the patient's expectations and concerns and focus the information exchange on dealing with these issues. On the other hand, if the doctor wished to be perceived as taking the patient seriously, the present findings suggest that concerns should be the primary focus of the exchange together with a thorough outline of the prognosis.

Unfortunately the limited generalizability of the current study prevents the development of general proposals of this nature but the evidence strongly suggests that further work in this area could prove of benefit.

A predictive relationship was also shown between the four consultation outcomes and patient satisfaction. Patient ratings of their understanding, the doctor's response, appropriateness of treatment and their view of the relationship cumulatively accounted for 71% of the variance in reported satisfaction. The fourth proposition: that outcomes will cumulatively predict overall satisfaction, was therefore supported but the predictive value of combined outcomes was lower than expected.

Combined outcome measures were poorer predictors than the combined task ratings and this suggests at least two possibilities. Firstly, not all effects of the performance on information tasks are mediated by the proposed outcomes; possibly task performance has some direct impact on satisfaction. Secondly, there are other outcomes, immediate to the consultation which would account for some of the unexplained variance. It must be noted also, that change in concern was not tested by the design of the present study although the model includes this as an outcome. However, a recent study on patient anxiety showed that there is a relationship between post visit anxiety and satisfaction with a paediatric health care visit (Hatcher & Richtsmeier, 1990). These authors conclude that their results suggest parent expectations for information may play a role in the observed relationship.

The results of the present study are consistent with most of the previous findings on patient satisfaction discussed earlier. However, they apparently contradict Ley's (1982) suggestion that satisfaction depends on meeting the patient's cognitive needs regarding diagnosis, etiology and treatment; explanation of etiology and prognosis were not related to satisfaction at all.

Despite the fact that the present study did not directly address the issue of compliance, two associated areas were investigated. Firstly, it was shown that all the patients intended to apply the treatment at the time of leaving the surgery. There were no differences regarding intentions between low satisfaction and high satisfaction; poor task ratings and high ones. Most people seemed prepared to try the treatment offered regardless of how they felt about its appropriateness. Secondly, the patients' views on appropriateness of treatment did vary, and this may have an impact on long term, actual compliance.

Clearly the findings of the present study indicate that the more effective is information exchange, particularly in the area of patient expectations and concerns, the more likely the patient is to view the treatment as appropriate. To this extent, the results are also consistent with the view that there is a positive relationship between information and compliance (Davis, 1971; Francis, Korsch & Morris, 1969; Korsch, Gozzi & Francis, 1968). Furthermore the present findings provide strong support for Squier's (1990) proposals regarding the importance of patient understanding of health problems and the sharing of concerns about illness.

Doubts and beliefs that the patient has will impact on his or her acceptance of the doctor's diagnosis and treatment and also affect perceived satisfaction with the doctor's response. It is far better that they be made explicit within the consultation and incorporated in the decision making process than for paternalistic instruction to be issued and ultimately undermined by persistent doubts and beliefs. Slack (1977) points out that if physicians were only willing to let go of the notion that they are responsible for controlling their patients and were willing to present possible plans of action, patients who wanted to could make informed decisions on the basis of their own values.

In conclusion, the current findings strengthen the validity of the information-processing model and explain some of the proposed links between information exchange and consultation outcomes. Perhaps the most important feature of the study is its contribution to research on how patients view the process and outcomes of consultation. Perhaps individual perceptions are more important than objective appraisals (Weinman, 1990). Certainly, patients do make judgments about the process of consultation and the key to improvements may lie in patient perceptions of medical practice.

If as Middleton (1989) suggests, patient autonomy is both socially and ethically desirable then more attention needs to be given to the concepts, perceptions, views and rights of patients in consultation. Wright (1991) sounds a word of caution, though, when he points out that patients may regard outcomes in different ways from the health professionals. Much the same comment could be made about the process of consultation.

During ordinary clinical therapy diverse types of data are noted and evaluated by both patient and doctor. The patient's decisions depend on a variety of personal goals and beliefs while the doctor's decisions are usually the result of following a process of reasoning termed clinical judgement (Feinstein, 1972). Discordant perceptions may well contribute to problems of communication and divergent reasoning which result in frustration of one or the other party in consultation. The patient's view may not match that of the doctor and future research needs to be directed at clarifying these points.

# CHAPTER 5

# INFORMATION EXCHANGE IN CONSULTATION: DOCTOR AND PATIENT PERCEPTIONS COMPARED

## INTRODUCTION

Glogow (1973) describes the "good patient" as one who is conforming, dependent, and ingratiating. A reflection of an earlier observation that the model patient keeps quiet and minds his own business, doesn't ask questions and obeys the doctor's instructions (Dunbar, 1947). Social convention ensures that most patients try to fit the model but this may not be the wisest choice of action (Glogow, 1973).

Doctors do not always act in the best interests of their patients (Bradshaw, 1978) and may even fail to be informed (Ley, 1981). A chilling example is the case of the antibiotic drug Chloramphenicol, which poses a risk of 1 in 50,000 that patients taking it will develop aplastic anaemia. Despite warnings regarding the dangers of the drug and the availability of preferable alternatives for most common infections, a million prescriptions for Chloramphenicol were issued in England during 1964 and 1965 (Bradshaw, 1978).

How many patients prescribed the drug would have taken it had they known the risk? This is a matter for speculation now; but one can easily see that patients would be assessing a personal risk, while for doctors the risk is statistical. The issue is, in fact, one of perspective and, as in many areas of consultation the patient's view does not necessarily match that of the doctor.

Rodin (1978) discusses the effects of systematic perceptual biases in health care settings and suggests that doctors and patients may view events differently due to situational cues and different interpretative frameworks. Taylor, Burdette, Camp and Edwards (1980) point out that physician and patient may have different perceptions of the purpose of the visit and differing agendas, priorities and objectives. Doctors and patients may also use different criteria for judging treatments and other consultation outcomes. Similarly patient self-reports of health do not necessarily correspond to the medical view (Kent & Dalgleish, 1986).

In any situation where the interactants don't see 'eye-to-eye' there is potential for conflict; and this suggests an important source of communication difficulties is mis-matched perceptions. Shuy (1983) points out that many small differences in the assumptions and communication between doctor and patient can cause interference in the consultation. He cites jargon, terminology, attitudes and social distance as some of the differences between them.

In terms of information exchange, Mathews (1983) concludes that an important source of difficulties is the incongruence of views on what information ought to be shared. From the doctors' problem-solving perspective the gathering of clinical data appears a priority action but from the patients' very different view a psychosocial orientation is preferable (Woolliscroft, Calhoun, Billiu, Stross, MacDonald & Templeton, 1989).

Marianne Paget (1983) outlines the problems a patient has in expressing her concerns about a recurrence of cancer, while the doctor insists her problem is nerves. The more that tension develops in the consultation the more sure the doctor becomes of his diagnosis. Paget notes:

> "It was their talk's pervasive tensions and disharmonies that awakened my puzzlement about their discourse, the sharp contrast between what she said and what he heard."

A recent study of formal complaints against general practitioners (Owen, 1991) revealed that the most common complaint was failure to visit and the second commonest criticism was failure to diagnose correctly. Misunderstandings often arise because of the different view which doctor and patient have of the patient and the illness (Rodin, 1978).

The present study was planned to explore the different views which doctors and patients have of their shared medical consultation. The aim is to compare and contrast the perceptions of doctors and patients, to empirically assess areas of difference and difficulty.

A recent study which simultaneously assessed doctor and patient satisfaction identified several aspects of consultation in which doctors and patients were disagreed about the level of medical care that had been provided (Rashid, Forman, Jagger & Mann, 1989). Generally, patients were more satisfied with consultation than the doctors who were more critical in their appraisal of what had occurred.

The Rashid et al. design simply required respondents to answer yes or no to questions such as 'Did the doctor discover the patient's real problem?' rather than investigating the processes of communication. In addition the study data come from 250 consultations with only 5 doctors, thus observations are not independent and there may have been some change in the doctors' behaviour over time due to continued use of the questionnaire.

The subjects in the following study are independent doctor-patient pairs who have been in consultation; thus the comparisons reflect actual differences which occur in specific relationships. The specific points of comparison are ratings of performance on the set of information-related tasks introduced in chapter four and the importance attached to each of the tasks. In addition, doctor and patient ratings for the set of outcome measures are compared. The use of these 7-point rating scales will allow comparison of perceptions about whether behaviours are undertaken, how well they are performed, and whether they are worth doing. Similarly the extent to which outcomes are achieved can be monitored and the degree of overall satisfaction assessed.

It is anticipated that there will be several areas of fundamental difference between the perceptions of doctors and those of patients. The analysis of consultation detail will provide a useful quantitative measure of qualitative difference and enhance understanding of both consultation evaluation and the role which discordant perceptions may play in problems of communication.

## METHOD

Subjects: The same 35 doctor-patient pairs as for the previous study; who were selected on the basis of being the first 35 doctors in the York area to agree to take part. Each doctor was paired with one of his or her own patients by randomly selecting a patient from those attending while the researcher was at the surgery. The demographic profiles of both doctor and patient groups are described in chapter four.

<u>Materials</u>: A consultation audit form for the doctors in the study (DCQ); which asked the same questions as the PCQ, used in the previous study, but from the doctors' perspective. This was to provide the doctors' view of the importance and performance of information tasks in the following areas:

1) Patient definition of problems.
2) Exploring patient ideas.
3) Dealing with patient concerns.
4) Exploration of patient expectations.
5) Discussion of the effects of problems.
6) Explanation of etiology.
7) Explanation of treatment and side effects.
8) Discussion of prognosis.
9) Provision of information
10) Answering patient questions.

These tasks are loosely based on those of Pendleton, Schofield, Tate and Havelock (1984) but are structured according to the information-processing model of chapter one. The use of structured rating scales enables the direct comparison of doctor and patient perceptions of actual consultations. The DCQ is included in appendix C.

In addition to rating performance, the PCQ and DCQ ask respondents to indicate the importance level they attach to each of the tasks. Finally, ratings of a selection of outcome measures are requested; some referring to individual outcomes and some directed at patient outcomes only. The outcomes which are explored are derived from the model in chapter one and include:

1. Concern.
2. View of treatment choice.
3. Patient treatment intentions.
4. Understanding.
5. Doctor's response.
6. Relationship.
7. Satisfaction.

Both performance on tasks and outcomes were scored on a 7-point scale and importance ratings were a three category choice: essential, desirable or unimportant.

Procedure: Immediately following the consultation, while the patient was completing the PCQ, the doctor was informed that the patient who had just left was the subject of the study. He or she was then asked to complete the DCQ with respect to that particular consultation. This was done immediately by all doctors with the exception of two who had emergency or prior duties. These two doctors completed the questionnaire as soon after the consultation as was practicable, in both cases this was within an hour after the patient left.

At the end of the study there were 35 full sets of doctor and patient questionnaires each relating to a specific consultation and the perceptions of its participants.

RESULTS

Performance on Information Tasks:

Table 5.1 shows the information task items from the questionnaire, the pole statements and the range of scores recorded by doctors and patients. The first two tasks are labelled as patient tasks but the doctor must provide the opportunity for the patient to engage in these tasks so has some responsibility for their fulfilment.

The use of 7-point scales made possible the direct comparison of numerical scores from doctors and patients, however, consideration must be given to the possibility that the subject groups used the rating scales differently.

The evidence shown on table 5.1 suggests that the results of the present study are relatively free from such artifact and direct comparison of the scores is viable. Both doctors and patients utilise the scale poles, and examination of raw data indicates that some use of poles by doctors is widespread throughout the sample; only four of the 35 doctors avoided the poles entirely.

Table 5.1. Information tasks, pole statements and range of doctor and patient scores.

| INFORMATION TASKS | PERFORMANCE SCALE bottom (1) | | PERFORMANCE SCALE top (7) | RANGE OF SCORES doctor | RANGE OF SCORES patient |
|---|---|---|---|---|---|
| PATIENT | | | | | |
| Defining reasons for attending | not very clearly | - | very clearly | 3-7 | 5-7 |
| Providing information about symptoms, onset and development of problem(s) | not very clear information | - | very clear information | 2-7 | 1-7 |
| DOCTOR | | | | | |
| To explain the cause or basis of problem | no explanation | - | full explanation | 2-7 | 1-7 |
| To explore patient ideas about the problem | no exploration | - | full exploration | 2-7 | 3-7 |
| To explore patient concerns | no exploration | - | fully explored | 2-7 | 2-7 |
| To explore patient expectations about diagnosis and treatment | not explored | - | fully explored | 2-7 | 2-7 |
| To discuss effects of problems with patient | not discussed | - | fully discussed | 2-7 | 4-7 |
| To explain the treatment and how it works | no explanation | - | fully explained | 1-7 | 2-7 |
| To discuss possible side effects of treatment | not discussed | - | all possible side effects discussed | 1-6 | 1-7 |
| To inform patient about what to expect as the condition gets better or worse | no information | - | full information | 1-7 | 1-7 |

Table 5.2. Information task ratings: Doctor and patient scores compared, between groups and within dyads.

| SCORES COMPARED | DOCTORS' MEAN (& MED) | PATIENTS' MEAN (& MED) | MEAN OF ABSOLUTE DIFF | SIG OF FRIEDMAN TEST | CORRELATION BETWEEN DR/PAT SCORE |
|---|---|---|---|---|---|
| Patients' reasons for attending | 5.97 (6) | 6.83 (7) | 0.97 | 0.002 | -0.07 |
| Patients' provision of information | 5.54 (6) | 6.57 (7) | 1.54 | 0.001 | -0.13 |
| Doctors' explanation of etiology | 5.06 (5) | 6.23 (7) | 2.09 | 0.001 | -0.04 |
| Exploration of patients' ideas | 5.23 (5) | 6.27 (7) | 1.62 | 0.002 | 0.12 |
| Exploration of patients' concerns | 5.31 (5) | 6.60 (7) | 1.40 | 0.000 | 0.38 |
| Exploration of patients' expectations | 5.11 (5) | 6.29 (7) | 1.68 | 0.000 | 0.15 |
| Discussing the effects of problems | 5.06 (5) | 6.69 (7) | 1.80 | 0.000 | 0.23 |
| Explanation of treatment | 5.04 (5) | 6.48 (7) | 1.46 | 0.000 | 0.64 ** |
| Discussion of side effects | 3.09 (3) | 3.74 (2) | 1.00 | n.s. | 0.88 ** |
| Explanation of prognosis | 4.50 (5) | 5.77 (7) | 2.30 | 0.002 | 0.14 |

1-tailed significance: * - 0.01 ** - 0.001

Table 5.2 provides a 'break-down' comparison of doctor and patient perceptions of their consultations on a task by task basis. The measures of central tendency indicate that patient ratings are generally higher than those of doctors and the Friedman's non-parametric test indicates the group differences are significant. In addition, the within dyad correlations suggest that the perceptions of doctors and patients, about their shared consultations are not well matched, for the majority of information tasks.

The two exceptions are explanation of treatment and discussion of side effects. Table 5.2 shows that for these two tasks, doctor and patient performance ratings are significantly correlated; however, these figures reflect only the ratings where both parties agree that a treatment was offered and side effects could not be ruled out. As table 5.3 shows there were a number of alternative responses not encountered in the straightforward rating of the other tasks. Clearly there was disagreement within a number of doctor-patient dyads about what actually happened quite apart from the ratings of how well it was done.

Once the analysis for discussion of side effects was restricted to the 11 valid cases, $r^2$ decreased to only 0.59, indicating a substantial reduction in the shared variance.

Table 5.3. Classification of cases in the comparison of 'explanation of treatment' and 'discussion of side effects'.

| TASK | CASES INCLUDED | CASES EXCLUDED |
|---|---|---|
| Explanation of treatment (N = 35) | 24 - agreeing that a prescribed treatment was offered | 7 - agreeing that no prescribed treatment was offered<br>4 - disagreeing about whether a prescribed treatment was offered |
| Discussion of side effects (N = 35) | 7 - agreeing that side effects were not discussed<br>11 - agreeing that side effects were discussed | 7 - agreeing no treatment :- no side effects<br>1 - agreeing the prescribed treatment has no side effects<br>9 - disagreed about whether treatment has side effects |

The Friedman's non-parametric test indicates there is no significant difference between the group scores, though the patients' mean rating for discussion of side effects is higher than the doctors' and the medians suggest the reverse is true. The Friedman's test of group rankings for explanation of treatment indicates that patient group scores were, in fact, significantly higher than the doctor group scores ($p<0.0001$) - the same general trend that occurs in the other ratings.

The overall picture generated so far is one of a poor general match between doctor and patient perceptions about the information tasks, taken one at a time. As a check on the extent of set overlap between the doctors' ratings and the patients' ratings, a canonical correlation analysis was undertaken. This took the set of doctor ratings as the independent variables and the results showed that there was no significant match between the canonical variates of doctor and patient ratings.

The two multivariate tests of significance (Pillai's and Wilk's) showed that there was no significant relationship between the two sets of information task ratings. Furthermore, the dimension reduction analysis showed that the eigenvalues and canonical correlations for roots one to ten were also non-significant. The total variance explained by all ten canonical variates of patient ratings was only 0.29, while the redundancy given the doctor variables is a little higher at 0.40. Since the canonical variates are orthogonal and the range of values is limited there is little evidence of true set overlap. The full statistical analysis is included in appendix C.

Importance of Tasks:

Further differences in the way patients and doctors view consultation are apparent from the comparison of the importance attached to each of the information tasks which were rated. Doctors and patients rated each of the information tasks as either essential, desirable or unimportant in terms of whether it should be undertaken during the consultation.

Patients, on average, felt that it was essential to undertake all of the information tasks within consultation while the doctor group considered all but one to be important but not essential. The exception was exploration of patient concerns which doctors, overall, thought was an essential task of consultation.

Table 5.4 shows the mean importance ratings for each group, the significance of group differences, the mean for within dyad differences and the correlations between doctor and patient scores.

Table 5.4. Importance of information tasks: Doctor and patient scores compared, between groups and within dyads.

| IMPORTANCE RATINGS COMPARED | DOCTORS' RANGE,MEAN (& MED) | PATIENTS' RANGE,MEAN (& MED) | MEAN OF ABSOLUTE DIFF | SIG OF FRIEDMAN TEST | CORR BETWEEN SCORES |
|---|---|---|---|---|---|
| Patients' reasons for attending | 1-3, 2.29 (2) | 2-3, 2.83 (3) | 0.60 | 0.002 | 0.11 |
| Patients' provision of information | 1-3, 2.26 (2) | 2-3, 2.91 (3) | 0.66 | 0.002 | 0.16 |
| Doctors' explanation of etiology | 1-3, 2.37 (2) | 1-3, 2.77 (3) | 0.63 | 0.028 | 0.10 |
| Exploration of patients' ideas | 2-3, 2.45 (2) | 2-3, 2.77 (3) | 0.51 | 0.043 | 0.06 |
| Exploration of patients' concerns | 2-3, 2.54 (3) | 2-3, 2.83 (3) | 0.40 | n.s. | 0.19 |
| Exploration of patients' expectations | 2-3, 2.26 (2) | 2-3, 2.86 (3) | 0.59 | 0.001 | 0.25 |
| Discussing the effects of problems | 2-3, 2.20 (2) | 2-3, 2.89 (3) | 0.69 | 0.000 | 0.18 |
| Explanation of treatment | 2-3, 2.31 (2) | 1-3, 2.75 (3) | 0.55 | 0.007 | 0.30 |
| Discussion of side effects | 2-3, 2.20 (2) | 1-3, 2.83 (3) | 0.74 | 0.002 | 0.02 |
| Explanation of prognosis | 1-3, 2.15 (2) | 1-3, 2.77 (3) | 0.73 | 0.002 | 0.03 |

* a rating of 1 = task is unimportant
* a rating of 2 = task is desirable
* a rating of 3 = task is essential

There was, once again, no evidence that the doctors and patients were using the definitions differently and the ranges of scores were similar for both sets. Clearly there is no perceptible match between either groups or individuals on the importance they attach to any information task with the exception of considering patient concerns. Both doctor and patient groups had a median score of 3 for this item, indicating that most people felt this task was an essential part of consultation. Unfortunately, the correlation between doctor and patient scores (r=0.19) did not reflect any high degree of within dyad matching.

A canonical correlation analysis confirmed that there was no significant match between the set of doctor ratings of task importance and those of patients. Once again, there was no significant association between the canonical variates of the two sets and redundancy was only 0.34 for the doctor importance ratings and 0.33 for the set of patient ratings.

Comparing Outcomes:

The final comparison of the perceptions of doctors and patients with respect to their consultation was for the ratings of several outcome measures. These are summarised on table 5.5 which shows the outcomes rated and also the ranges for doctor and patient scores.

Table 5.5. Outcome ratings, pole statements, and ranges of doctor and patient scores.

| OUTCOME RATINGS | LIMITS OF THE SCALE bottom (1) | | top (7) | RANGE OF SCORES doctor | patient |
|---|---|---|---|---|---|
| Patient concern before consultation | not worried | - | extremely worried | 2-7 | 1-7 |
| Patient concern after consultation | not worried | - | extremely worried | 1-5 | 1-7 |
| Reduction in patient concern | calculated as | | (before minus after) | 0-4 | 0-6 |
| Appropriateness of treatment choice | inappropriate | - | best possible choice | 4-7 | 3-7 |
| Patient treatment intentions (compliance) | doesn't intend to adopt trtmt | - | intends to fully adopt treatment | 4-7 | 6-7 |
| Patient understanding of problem | doesn't understand | - | fully understands | 2-7 | 2-7 |
| Doctor understanding of patient health needs | no understanding | - | full understanding | 3-7 | 2-7 |
| Perception of doctor's response to patient | didn't take patient seriously | - | took patient very seriously | 3-7 | 2-7 |
| Climate of the relationship | very difficult | - | very easy | 2-7 | 3-7 |
| Personal satisfaction with the consultation | highly dissatisfied | - | highly satisfied | 2-7 | 2-7 |

Once again, there is little evidence of the scales being used differently and both groups contained scores at the top end of the scale. Similarly, when the bottom end of the scale represented their true perception of patient anxiety, respondents in both groups utilised the minimum score.

Table 5.6 shows the outcomes rated by both doctor and patient groups with the between group comparisons and correlations of intra-dyad scores. The results in this section were more variable but the inevitable mis-match in perceptions dominates the table.

The canonical correlation analysis reflected this variability in perception match with a significant root one, and a non-significant association between sets. The Pillai's Trace test of significance was above the 0.5 level and since this statistic is the most robust and most powerful of the four, it is taken as the most accurate; the hypothesis of no perceptible impact is therefore retained.

Interpretation of root one was difficult because there were no loadings above 0.466 on either set and the greatest redundancy was only 0.09. It seems that the relationship between the canonical variates of root one is probably spurious, especially since the non-significant root two has loadings up to 0.689 and redundancy of 0.10.

Table 5.6. Outcome measures: Doctor and patient scores compared, between groups and within dyads.

| OUTCOME RATINGS COMPARED | DOCTORS' MEAN (& MED) | PATIENTS' MEAN (& MED) | MEAN OF ABSOLUTE DIFF | SIG OF FRIEDMAN TEST | CORRELATION BETWEEN DR/PAT SCORE |
|---|---|---|---|---|---|
| Patient concern before consultation | 4.69 (5) | 3.71 (3) | 1.66 | 0.043 | 0.59 ** |
| Patient concern after consultation | 2.80 (3) | 2.14 (2) | 1.11 | 0.011 | 0.54 ** |
| Reduction in patient concern | 1.89 (2) | 1.58 (1) | 1.34 | n.s. | 0.48 * |
| Appropriateness of treatment choice | 6.09 (6) | 6.35 (7) | 0.85 | n.s. | 0.17 |
| Patient treatment intentions (compliance) | 6.45 (7) | 6.94 (7) | 0.55 | n.s. | 0.14 |
| Patient understanding of problem(s) | 5.29 (5) | 6.40 (7) | 1.51 | 0.001 | 0.21 |
| Doctor understanding of health needs | 5.71 (6) | 6.60 (7) | 1.29 | 0.000 | 0.23 |
| Doctor's response | 6.49 (7) | 6.62 (7) | 0.50 | n.s. | 0.57 ** |
| Relationship | 5.77 (6) | 6.74 (7) | 1.14 | 0.002 | 0.22 |
| Personal satisfaction with consultation | 5.14 (5) | 6.51 (7) | 1.71 | 0.000 | 0.23 |

1-tailed significance: * - 0.01 ** - 0.001

Total redundancy for roots one to nine was only 0.36 for the doctor ratings and 0.38 for the patient variables, further indicating the sets have little real overlap.

Looking at the individual ratings, it is clear that the only valid match in perception is for the doctor's response. Doctor ratings of how seriously they felt they took the patient and the patients' own ratings were reasonably similar. The Friedman's test of ranked values showed that there was no significant difference between the doctor group and the patient group, and there was also a modest correlation between the paired doctor and patient scores.

The three items dealing with patient concern also show significant correlations between the doctor score and the patient score within dyads. However, the Friedman's test of ranked scores for concern before consultation and concern after, indicates that the doctor scores are generally higher than patient scores. Observation of raw scores confirms this trend.

Despite the consistent over-estimates of patient concern made by doctors, their assessment of reduction in concern parallels that of the patients themselves. This shows up on table 5.6 as negligible group difference for change in concern and moderate positive correlation for the within dyad scores. However, the association is artificial and arises from the remarkable consistency of the doctor overestimates of initial and resultant patient concern.

The outcomes relating to treatment choice also show inconsistencies in the summary statistics of table 5.6. The low correlations clearly indicate the within dyad ratings are not well matched but the non-significant differences between groups suggests that the within dyad differences cancel one another out in terms of group scores. Overall the groups can be said to view the choice of treatment and the patients intention to comply in similar ways; but when the scores are paired according to consultations the individual participants are seen to have quite different views.

The remainder of the outcome variables are clearly viewed differently by doctors and patients, both as groups and within dyads. The issue of understanding is particularly important in terms of information exchange and, as table 5.6 also shows, doctors and patients have different views of both their own and the others level of understanding. Doctors consistently rate patient understanding of problems at a lower level than patients themselves do. This is reflected by the 2-point difference between group median scores with most patients feeling they have a good understanding of their own problems. Regarding the doctors' understanding of patient health needs the difference runs in the opposite direction with patients rating doctor understanding at higher levels than do the doctors.

Satisfaction with the consultation was significantly lower for the doctor group than for the patient group and the within dyad ratings were not significantly related either. In terms of mean absolute difference, this variable yielded the most difference between doctor and patient ratings of outcome. The median rating for doctor satisfaction was five on a 7-point scale from highly dissatisfied (1) to highly satisfied (7). Patients, on the other hand, felt that on average the doctors had done very well and the median patient score for satisfaction was seven, indicating most patients were highly satisfied.

## DISCUSSION

The inevitable conclusion is that the views which doctors and patients have regarding the communication within their shared consultations do not match. They clearly have different perceptions of the same events and exhibit little concordance in their ratings of information tasks. This confirms the findings of Rashid et al. (1989); there are significant disagreements between doctors' and patients' perceptions regarding the majority of communication variables studied.

The question that arises naturally from these findings is why do doctor and patient perceptions differ? It is likely that these differences arise partly from a difference in perspective (Shuy,1983; Paget, 1983) and partly from a difference in knowledge (Buckman, 1984). As Brown (1965) notes, a communicator cannot give meaning to a receiver; instead he gives a symbol to the receiver, who then subjectively takes meaning from the symbol. The meaning which the receiver takes depends on his or her own experience and attitudes not those of the communicator.

Gillian Rice (1990) quotes one of her doctor respondents as saying :

> "Sometimes when I ask the most basic of questions like, 'Have you ever felt your pulse?' and the patient hasn't, I realise just how far away many people are from knowing the first thing about what I'm saying."

In Rice's opinion this issue is probably one of the biggest stumbling blocks on the road to better communication between doctors and patients.

While the predominance of high patient ratings for doctor performance on the information tasks poses an apparent contradiction to the results of the community survey reported in chapter three, it serves to underline the influences of setting. Asking people about their own doctor, while on his or her premises and at a time when they are actually consulting the doctor could reduce the likelihood of critical responses and exaggerate existing reluctance to criticise the doctor (Fitzpatrick & Hopkins, 1983).

One interpretation of the results from this part of the present study is that patients appear to have low expectations of doctors' performance. As a result they tend to rate highly what is in the doctors' opinion a mediocre performance. Satterlund-Larsen, Svardsudd, Wedel and Saljo (1989) make the point that patient satisfaction can be interpreted as resulting from low expectations as easily as from premium performance.

It is perhaps pertinent to note here that Hays (1990) showed doctor ratings of their own performance were higher immediately after consultation than when they evaluated their own performance on video playback. When the actor becomes the observer his viewpoint changes. Perhaps patients have been too trusting for too long and now they remain grateful and appreciative simply because limited information means they have little control over the quality of medical care they receive.

Of course, this is speculation and fear of recrimination might be the motivation behind patients' positive evaluations. On the other hand the doctors might actually think they are totally brilliant but not like to be seen saying so and rate themselves as modestly average. Another more relevant point is that doctors may be more used to critically evaluating their own and others performance while, as discussed in the previous chapter, patients tend to give doctors the benefit of the doubt. As Tessler and Mechanic (1975) note, patient evaluations may simply reflect the fact that it is uncomfortable to believe that one's source of care is less than adequate.

The importance which patients in consultation attach to the information tasks affirms the results of chapter three and strengthens the argument in favour of the information-processing model. The current results show that patients approach consultation ready to engage in dialogue and believing that information exchange is an essential part of the process.

On the other hand, doctors regard much of the business of information flow to be less than crucial. Apart from the issue of patient concerns the remainder of the tasks are expendable; they are important but can be abandoned. This raises the issue of what doctors do consider to be the main business of consultation. Presumably it is the process defined by the traditional medical model: Take the history, formulate a hypothesis, diagnose the most likely option and treat accordingly. Above all don't waste time talking to the patient!

Britten (1991) makes a similar observation about consultants opposed to patient access to information and involvement in consultation -

"This [biomedical] model merely requires the patient's body to be present for examination by the doctor, and the patient's thoughts and feelings are irrelevant to the process of diagnosis and treatment." (p 95).

This difference in the amount of importance attributed to the exchange of information in consultation may have implications for compliance with medical advice. In a recently published series of guidelines for improving patient compliance, the author makes nine points based on published research findings; six of these involve information exchange and how to make this more effective (Carr, 1990). There are also implications for satisfaction since the three areas of dissatisfaction noted by Corboy (1982) includes the amount of information given to patients along with cost and waiting time.

Of course, patients in the present study were generally well satisfied and indeed, as noted earlier, studies conducted in clinical settings do tend to record high levels of reported satisfaction. Larsen, Attkisson, Hargreaves and Nguyen (1979) argue that these findings can be interpreted in several ways. At one extreme they could be dismissed as valueless since they could be solely due to patients' desire to give grateful testimonials or to other demand characteristics. At the other extreme they could be accepted at face value and used to avoid addressing the issue of poor communication because '86% of the patients surveyed are highly satisfied'.

Why doctors were less than highly satisfied with the consultations is not clear but considering the low ratings they made of their own performance it is possible that they recognise things could be managed better. As discussed in chapter four, low patient satisfaction is associated with perceptions of inadequate performance on information tasks and the patients indicating lower satisfaction also made lower ratings of doctor performance.

The findings of general lower doctor satisfaction and higher patient satisfaction are perhaps consistent with those of Taylor et al. (1980) who report that doctors also underestimate patient satisfaction with consultation. They suggest that encounters are more successful than doctors believe them to be in terms of meeting patient need and inspiring patient involvement in therapy. Putting themselves in the patient's place, the doctors in the present study apparently considered they would not have been totally happy with the way their needs had been met nor would they have been greatly committed to the therapy.

Furthermore, Kent and Dalgleish (1986) propose that in general practice consultations, the opportunity to gain information about illness and treatment is predictive of patient satisfaction. On this basis, the findings of higher patient satisfaction than doctor satisfaction would be expected since patients also recorded higher ratings for the informative tasks of consultation than did doctors. A slightly different interpretation stems from Ort, Ford & Liske (1964) who noted that physician satisfactions arise from personal affiliation and the giving of help and care; dissatisfactions frequently stem from lack of control and are mainly attributed to the patient.

One of the more interesting findings of the present study is that doctors perceive patient concern to be higher than the patients themselves indicate it is. Paradoxically, one of the reasons often given by doctors for withholding information from patients is to avoid raising patient anxiety (Quint, 1972; Comaroff, 1976; Davis, 1972). If, in fact, doctors do consistently over-rate patient concern then their fears about patient anxiety may be exaggerated as well.

Also of interest were the different levels of understanding attributed by doctors and patients with respect to each other. Patients consistently overestimated the doctors' own views of how well they understood patient health needs, while doctors underestimated the patients' views of how well they understood their own problems. This perhaps reflects patient expectations for their doctors to be understanding or it could simply be that patients are inclined to flatter the quality of the care they are receiving (Trussell, 1960).

Regarding patient understanding, the results are consistent with a number of other studies which suggest doctors underestimate patient health knowledge and comprehension of what they are told (Pratt, Seligman & Reader, 1957; McKinlay, 1974). Zola (1981) notes that doctors overwhelmingly attribute non-compliance to either the the patient's inability to understand or his uncooperative personality.

Low estimates of patient understanding are an effective a barrier to provision of explanation (Comaroff, 1976; McIntosh, 1974). One doctor in the present study noted:

> "Too much information can overload and confuse the patient and cause patient anxiety".

While another adds:

> "People would not take some tablet if they knew every side effect possible, and would be very anxious if they know every possible cause of certain symptoms".

Does this mean that when doctors are ill they don't take their medicine and they become paralysed with fear knowing all the dreadful things that may possibly be wrong? No, it is only patients who have such limited capacity for understanding - or do they? Rourk, Hock, Pursell, Jones and Spock (1981) noted that patients involved in treatment at the Cystic Fibrosis Centre of Duke University, were able to make rational evaluations about treatment and their disease when provided with the necessary information.

Furthermore, patient information leaflets designed to increase patient knowledge of penicillins and NSAIDs (non steroidal anti-inflammatory drugs) were shown to benefit patients of both sexes, all age groups and social classes; with no evidence of increased side effects (Gibbs, Waters & George, 1990). Kitching (1990) suggests that patient compliance is actually increased by the use of prescription information provided to patients. Of course, it is the primary responsibility of the prescriber, both legally and morally, to provide 'reasonable information to the consumer (Wells, 1990).

## CONCLUSION

The view that emerges from these results is one of well intentioned and grateful patients who are overly generous in their approbation of the doctors. For their part the doctors overemphasise their own role and have a diminished view of the patients' contribution and understanding. As Woolliscroft et al. (1989) also pointed out, there are clear differences between patient and physician judgments and perceptions of the medical interview process.

Mathews (1983) suggests the extent to which patients and doctors successfully exchange information is affected by the degree to which their realities are mutually compatible. The incompatibilities demonstrated in the present study are incontrovertible and to some extent echo the earlier findings of physician mis-perceptions and doctor-patient non-concordance recorded by Taylor, Burdette, Camp and Edwards (1980). These researchers showed doctors and patients held different views of many aspects of the consultation including the primary purpose of the encounter, intended patient compliance and satisfaction.

Perhaps the only example in the literature which shows consistent similarity between doctor and patient perceptions is between the self-assessed and observer-assessed presence and severity of colds (MacIntyre & Pritchard, 1989). But as we all know doctors can't actually treat a cold so it doesn't help much does it?

The results of the present study serve to illustrate just how different the perceptions of doctor and patient are. In all the consultations studied there was evidence of non-concordance and the sample displayed perceptual differences in almost all the areas investigated. As noted earlier, the differences could arise from differences in perspective and/or knowledge, and the communication between doctor and patient could benefit from greater acknowledgement of these differences and the potential difficulties they create.

Information-exchange depends on channel compatibility and clear communication is easier if 'noise' is minimised. Differences in perception may limit the compatibility of communication channels or may increase the noise in the system. Either way they are deleterious (Shuy, 1983; Paget, 1983; Taylor et al., 1980; Mathews, 1983) and should be minimised. Further research is needed to establish the extent of the range of differences, the impact on efficiency that results and potential means of overcoming the problem.

Education of both doctors and patients is possibly the best option for reducing differences or at least raising awareness of their existence. Patients particularly need to develop a critical awareness of the constraints inherent in the 'five-minute' consultation and the limits of their doctors' skills. Doctors need to be aware of how important information is to patients at an individual level and develop skills to communicate at the level of effective information exchange.

# CHAPTER 6

# BELIEFS AND BEHAVIOURS WHICH COMPROMISE EFFECTIVE CONSULTATION

## INTRODUCTION

The previous chapter showed clearly that doctors and patients have very different views of many aspects of shared consultations; and it was suggested that differences in both perspective and knowledge exist. In this chapter it is intended to explore these differences in relation to difficulties in communication and problems within the interaction between doctor and patient.

Pendleton (1979) defines communication difficulty as:

> "Any aspect of the interaction between doctor and patient which makes it harder or impossible for either to achieve his goals."

He further suggests three major sources of difficulty: problems in the consultation interaction, aspects of the patient, and (only rarely) the doctor!

A later study (Pendleton, Jaspars & Brouwer, 1983) reported that such difficulties occurred in 22% of 2070 consultations studies. Bennett, Knox and Morrison (1978) investigated the nature of communication difficulties from the doctors' perspective. They showed that the most difficult situations were those involving drug dependency and child abuse, while the most common specific problem was conveying to patients the triviality of a minor problem.

Many doctors are, in fact, routinely faced with a large number of consultations presenting trivial problems; and one study puts the incidence at 20% of all consultations (Cartwright, 1967). There is growing evidence that these consultations are especially frustrating for doctors (Mechanic, 1974; Cartwright & Anderson, 1981) as they clearly aren't necessary for the overt problems raised; and the underlying motivations are often not revealed. Conflict arises because the visit isn't trivial from the patient's point of view, even if he or she does not fully disclose the reasons for its occurrence.

Patients are not the only ones to withhold information, though, and doctors can be particularly selective in the information they share. The literature suggests at least three factors which have a bearing on the management of information in consultation: professional ideology; the relationship between power and information control; and the issue of who 'owns' the information (Mathews, 1983; Quint, 1972; Waitzkin & Stoeckle, 1976; Freidson, 1970; Mason, 1991). Individual physicians proceed by invoking personal rules of thumb, but Waitzkin and Stoeckle (1972) point out that the procedures by which doctors formulate their decisions are seldom stated explicitly.

However, despite the emotional difficulties, social conflicts, competence gaps, power ratios and reference points that exist, it is clear that providing information and advice is an integral part of daily medical work. The emphasis, therefore, needs to be on why this is difficult to achieve and what priority should be given to it.

In terms of priority, it seems that patients are keener to have information than doctors are to give it (McIntosh, 1974). Most doctors profess that some information should be provided and questions answered but mediate this according to perceptions of the patient's ability to comprehend and need to know (Comaroff, 1976). Unfortunately, doctors also tend to overestimate the time they spend informing patients and underestimate patients' desire for information (Waitzkin, 1985).

Boreham and Gibson (1978) showed that few patients asked questions in consultation, and what they were told depended on what doctors were prepared to tell them. Similarly Beisecker and Beisecker (1990) noted that while patients desire information about a wide range of medical topics, they do not actively seek information when communicating with doctors. Patients apparently don't wish to assert themselves in consultations and they don't wish to assume the responsibility for medical decision making (Beisecker &

Beisecker, 1990).

However, patient reticence can cause problems and the process of history taking often fails to elicit patients' key problems (Weiner & Nathanson, 1976). Failure to establish patient expectations has been observed at levels of up to 65% of consultations (Korsch, Gozzi & Francis, 1968) and Maguire (1976) shows how the doctors' attempts to reassure women suffering from breast disease were ineffective because of failure to identify specific concerns.

Because such communication difficulties can arise out of conflicts in perspective, criterion, need or notion, the present study aims to investigate doctor and patient views of the following factors:

1) The incidence of communication problems; how often they occur and what elements are implicated.
2) The issues of information exchange: control; desire; requests for information; and ultimate provision.
3) Behaviours that frustrate and conceptual ideals.

In addition the need for communication skills on the part of doctors is addressed and the source of these skills is considered.

METHOD

Subjects: The same 35 doctor-patient pairs as for the previous two studies; comprising a self-selected sample of doctors each paired with a single patient selected at random. The demographic profiles of both doctor and patient groups are described in chapter four.

Materials: In addition to the PCQ and DCQ, introduced in the previous two chapters, there were further separate questionnaires for doctors and patients called doctor general questionnaire (DGQ) and patient general questionnaire (PGQ) respectively. These contained a combination of checklist items and open questions to investigate experiences of communication difficulties, ideas about information flow and perceptions of the other party.

Items were chosen to explore the research interest in communication difficulties and the beliefs and behaviours which might contribute to such difficulties. Questions about reluctance to talk, dispreferred topics and trivial visits were included along with those which explore frustrating behaviour and ideal characteristics. Patients were asked about their desire for information and both parties were asked about the doctor's right to withhold information. Doctors were asked, in the DGQ, about both the importance of communication and source of appropriate skills. Full questionnaire sets are included in appendix D.

Procedure: Patients agreeing to take part in the study were asked to complete the general questionnaire (PGQ) while they waited for their turn to see the doctor. As noted earlier, they were instructed to keep their participation in the research a secret from the doctor to reduce reactivity on the part of the doctor.

After the consultation doctors were informed of the patient's participation; after completing the consultation questionnaire they were given the general questionnaire (DGQ). The doctors completed this in their own time and mailed it back to the researcher. At the end of the study there were 35 full sets of doctor and patient questionnaires each relating to a particular consultation and the general beliefs and perceptions of its specific participants.

## RESULTS AND DISCUSSION

### Communication Problems

All of the 35 doctors in the study had experienced communication difficulties in their own consultations. The estimates they made regarding the daily incidence of such difficulties are shown on figure 6.1, with a minimum of 5% and a maximum of 60%.

The mean estimate of problems per day is 18% of all consultations; but since the distribution is positively skewed, the median of 10% may better reflect the sample experience. On the other hand, the mean of 18% is comparable to the 22% of consultations posing communication difficulties for doctors found by Pendleton, et al. (1983).

```
 5      **
10      ****************
15      ***
20      ****
25      *
30      *****
35
40      *
45
50      *
55
60      *
        l___l_____l_____l____l
       1   5     10    15   20
```

<u>Figure 6.1. Distribution of doctors' estimates for the incidence of communication problems occurring on any day</u>

Patients were asked about their experience of communication difficulties as well, and 23% reported having had problems communicating their health needs to a doctor in the past. For 87% of these people the difficulty had caused them some anxiety. When asked if there was anything they were reluctant to talk to a doctor about, 26% of the patients answered yes. Reasons offered for the reluctance were that some things are easier to talk to a woman doctor about (22%); embarrassment (22%); and the fear of ridicule or the doctor forming a negative opinion of them for wasting time or bothering the doctor (44%).

Regarding their experience of communication difficulties, the doctors were asked if they occur in relation to specific patients and/or specific topics? Eighty percent of the doctors felt specific patients tended to be a problem and 40% found specific topics present difficulties; 37% of the doctors indicated both factors were implicated in the problems they encountered.

Table 6.1 shows the types of patients which doctors referred to as communication 'blackspots'. Contrary to what much of the existing literature would lead us to believe (Cartwright,1967; Pendleton, 1979; Cartwright & O'Brien, 1976), social class factors are not represented directly. The three main problem areas are patients with unrealistic expectations, anxious patients and those who won't accept that drug treatment is inappropriate.

Table 6.1. Types of patient implicated in communication difficulties within consultation.

| FREQUENCY | SPECIFIC PATIENT 'BLACKSPOTS' |
|---|---|
| 18% | patients with unrealistic expectations |
| 11% | anxious patients |
| 11% | those who won't accept drug treatment is inappropriate |
| 7% | demanding patients |
| 7% | embarrassed patients |
| 7% | those who don't listen |
| 7% | those who don't understand |
| 4% | hypochondriacs |
| 4% | aggressive patients |
| 4% | patients with hidden agendas |
| 4% | frequent attenders for trivia who develop genuine illness |

The unrealistic expectations generally involved the patient believing the doctor or the treatment could achieve more than was actually possible. This is really an effect of the limited technical knowledge which is shared by doctors, perhaps due to a vested interest in the myth of medical infallibility as Britten (1991) suggests. However, it has been noted that patient expectations may be minimal or inappropriate as well as unrealistic (Larsen, Attkisson, Hargreaves & Nguyen, 1979) and if they are not made explicit in consultation the process may not be totally to blame for not dealing with them.

Zola (1981), on the other hand, contends that by sharing information and also uncertainty doctors will reduce their own psychological burden and also reduce the chances of complaint or litigation. At the very least such open communication may help patients to have realistic expectations of what the doctor can do for them.

It is interesting to note that uncertainty is a factor in anxiety and patient anxiety needs to be openly acknowledged as Paget (1983) pointed out. Many patients genuinely want to be trusted with more knowledge of their condition and to have the opportunity of discussing their feelings (Buckman, 1984).

The issue of whether to prescribe drugs may also be interpreted differently by doctors and patients and there is evidence that patients tolerate no-drug treatments better than doctors might anticipate (Bain, 1983; Marsh, 1981). Patients clearly expect action or explanation but with about 20% of patients failing to have their prescriptions filled (Rashid, 1982) one could argue that doctors are more willing to prescribe drugs than their patients are to take them!

Forty percent of the doctors felt that certain topics presented difficulties in communication but not all of them indicated which specific topics which caused them bother. As table 6.2. shows, the problem topics were relatively doctor specific, unlike the 'problem patient' reports where frequency counts revealed common difficulties facing doctors.

Table 6.2. Specific topics implicated in communication difficulties within consultation.

| RESPONDENT | SPECIFIC TOPIC 'BLACKSPOTS' |
|---|---|
| 32 | Endogenous depression & cancer. |
| 27 | Sleep problems & tranquillisers. |
| 22 | sex; menstruation; menopause & incontinence. |
| 20 | Socially embarrassing problems & long term chronic illness. |
| 19 | Alcohol; drug abuse; sex abuse & disorders of family dynamics. |
| 9 | Personal problems. |
| 8* | Psychosomatic illness. |
| 6 | Psychiatric - neurotic symptomology. |
| 4* | Mental disorders - anxiety, depression, insomnia. |
| 3 | Health promotion. |
| 2 | Illness prevention. |

* indicates the respondent specified topics but did not actually state that 'specific topics' were a problem.

Each doctor respondent had a particular cluster of topics that cause him or her problems in consultation. These topics somehow made communication difficult for the individual doctor and he or she was obviously aware of this fact.

The information discussed in consultation is largely determined by the way the doctor conducts the exchange and Kent & Dalgleish (1986) point out there have been several indications that a physician's viewpoint can affect the care he or she offers. For instance, the personal feelings of doctors towards sexual matters are related to patients' willingness to discuss them (and thus to gain help). Similarly, the doctor's personal attitude towards the drugs and alcohol also affects his or her ability to discuss and give help in these areas (Kent & Dalgleish, 1986).

It appears, then, that communication problems in medical consultation arise from at least two basic sources. The first involves interpersonal factors; there are several patient 'types' which are commonly cited as presenting problems for the doctor-patient interaction. Secondly, individual doctors find certain topics difficult to handle; a number of these echo the findings of Bennett et al.(1978).

It is tempting to label these patient-centred problems, and doctor-centred problems, respectively, and clearly patients who experience difficulties in communicating about particular topics may well find the problem disappears when a different doctor is consulted. Unfortunately, 'doctor-shopping' is still viewed in a negative light by doctors and patients and is therefore seen as a last resort (Kasteler, Kane, Olsen & Thetford, 1976). Of course, there still remains a mutual responsibility for doctors and patients to work out their communication problems rather than simply blame one or the other party. However, significantly more doctors noted problems occurring with specific patients than with specific topics ($t=3.69$, $p<0.001$, $df=65$). This shows that quite apart from their own dispreferred topics, doctors are having trouble understanding and being understood by a number of their patients - in particular.

The Issues of Information Exchange.

Both doctors and patients in the sample were asked if they thought it is the doctors prerogative to place limits on the information given to patients. The results clearly showed the difference in the opinions of the two groups. Sixty-nine percent of the doctors believed that it is the doctors prerogative to limit information flow to the patient while only 18% of the patients believed this was true. The group difference was statistically significant ($t=4.91$; $p<0.001$; $df=65$) and clearly the results agree with much previous research, indicating a different perspective on information control held by doctors and patients (McIntosh, 1974; Mathews, 1983; Quint, 1972; Kelly & Frieson, 1950)

Obviously a difference in individual doctor- patient pairs would present some serious communication difficulties and the study design enables exploration of this issue. Regarding individual doctor-patient dyads, there were only 12 matches in opinion on this point; four dyads were agreed that it is the doctors prerogative to limit information given to patients and eight doctor-patient pairs agreed that it is not.

Clearly the majority of doctor-patient dyads (66%) were not agreed on this important issue of full information disclosure. More than half the patients in the sample (57%) were in the difficult position of believing they have a right to full information about their own health and bodies while consulting a doctor who believes otherwise.

It was clear from the reasons given by doctors in support of withholding information from the patients that it is often seen as being in the patients' best interests. However, Britten (1991) suggests that some doctors may actually see it as being in their own best interests as well. As Freidson (1970) noted, there is a clear strategy of information control on the part of doctors, coupled with piecemeal revelation of the plan of action. This contrasts strongly with the patients' obvious conviction that they have a right to know all facts about their disease. It has been further stated that this right extends beyond an explanation of the disease, its treatment, and its prognosis to the right to be informed accurately and promptly of new information relating to the disease (Rourk, Hock, Pursell, Jones & Spock, 1981).

It seems that unless a patient clearly communicates a wish to know specific information, the doctor assumes a desire not to know and it is at this level that the potential problem of disclosure must be addressed. Patients have been shown to be poor at volunteering information about needs and expectations (Weiner & Nathanson, 1976; Korsch et al., 1968) so must accept some of the fault is their own. Effective information flow means the patient telling the doctor what he or she wants to know as well as the doctor providing the required information.

As a measure of patients' general desire for information, they were asked to indicate how much detailed information about their condition they would want from their doctor. Using a 7-point scale from none (1) to everything (7), the overwhelming majority scored 7 (86%); the lowest rating was 5 (6%) and the mean was 6.8. This result confirms earlier findings that most people want to know as much as possible about their illness (Cartwright, 1964; Ley & Spelman, 1967; Reader, Pratt & Mudd, 1957).

It was interesting that of the patients who didn't want to know everything, 60% also held the view that doctors have no right to limit the information they give. Thus even among patients who don't want full disclosure for themselves, the majority believe that it is not the doctor's prerogative to decide the limits of information provided.

Desire for information is a common patient characteristic and, as in the present study, Boreham and Gibson (1978) showed that patients were interested in finding out about their condition. Patients place considerable importance on the informative aspects of consultation and patient expectations for information play a role in the doctor-patient relationship (Hatcher & Richtsmeier, 1991). However, desire for information does not always translate into patients actively seeking it within consultation (Roter, 1977; 1984; Boreham & Gibson, 1978; Tuckett, Boulton, Olson & Williams, 1985).

In the present study, patients were asked how comfortable they felt in asking questions of a doctor, using a scale from not comfortable (1) to comfortable (7). Figure 6.2 shows the skewed distribution of scores with 71% of the sample feeling comfortable about asking the doctor questions and only 6% rating comfort at less than 6.

```
  not comfortable 1
                  2  *
                  3
                  4  *
                  5  **
                  6  ******
comfortable       7  *************************
                     I__I___I___I___I___I___I
                     1  5   10  15  20  25  30
```

Figure 6.2. Frequency distribution of scores regarding how patients feel about asking the doctor questions.

Because of the possibility that patients would report feeling confident about asking questions generally, especially from the relative safety of the waiting room, the next few questions probed how they felt about specific types of questions. The results clearly showed that while most patients felt happy about the prospect of asking for more information from the doctor (97%), far fewer were prepared to question either the diagnosis (53%) or the treatment offered (56%). Statistical analysis showed that in fact the proportions of patients prepared to question either diagnosis or treatment were significantly less than would seek more information generally ($t=5.42$, $t=4.52$; $p<0.001$, $df=40$).

The trend of these results agrees with the earlier findings of Tuckett et al. (1985) that 76% of the patients in their study would have liked to ask a question or express doubts about the physician's views but were reluctant to do so. Reasons for not speaking up included believing it was not a patient's right or fearing the doctor would not think well of them. Maguire (1984) proposes that other reasons for not asking questions would include lack of time, forgetting what they wanted to ask because they were worried, expecting to be fobbed off or being afraid of the answer.

Data collected from patients about what had occurred during the consultation showed that of the 35 patients involved in the study only 19 (54%) actually reported asking questions during the consultation. Because previous research indicates that patients ask relatively few questions in consultation (Roter, 1977; 1984; West, 1983), the relationship between doctors' perceived attitude and patients' question asking was investigated. A comparison of mean scores for the patients' perceptions of their doctor's attitude towards them asking questions (on a 7-point scale from negatively disposed (1) to positive (7)) was undertaken using Friedman's test. This showed there was no significant difference between the ratings for the group of patients who did ask questions and those who did not. Thus, although some patients did rate their doctor as feeling less than positive about them asking questions in the consultation, this did not appear to prevent the patients asking questions if they really wanted to.

The frequency distribution for patient ratings of their doctor's attitude is shown to the left of figure 6.3 while the doctors' own ratings of how they feel about the patient asking questions are shown to the right

```
                 PATIENT    (NEG)    DOCTOR
                              1
                              2
                              3
                              4  *
                     ******   5  *****
                *************   6  *****
             ****************   7  ************************
                            (POS)
I____I____I____I____I___I      I___I____I____I____I____I
25   20   15   10   5   1      1   5    10   15   20   25
```

Figure 6.3. Rating scores for perceived and actual doctor attitudes to patient question asking.

There was no significant difference between the group scores for patient ratings of how their doctors feel about them asking questions and the doctors' own ratings of how they feel. The overall mean rating was 6.39, indicating a generally positive feeling about patient question asking.

In terms of matching within dyads though, the relationship is a little less straightforward. A low negative correlation (r=-0.36) exists between paired doctor and patient scores, suggesting that patients do not have particularly accurate perceptions of their own doctor's attitude toward them asking questions. It is precisely this kind of "he thinks she thinks" basis for the doctor-patient interaction that contributes to communication problems and which adequate information exchange should effectively eliminate.

Middleton (1989) interprets these problems as conflicts of meta-perspectives and provides an example:

> "the doctor asks 'What can I do for you?' - the patient's meta-perspective is: 'He thinks I want tablets'; the doctor's meta-perspective is: 'He thinks that I don't want to give him any tablets'." (p 385).

He further suggests that these conflicts can be the basis of misunderstandings between doctor and patient, particularly when they are based on incorrect assumptions. Earlier research showed that information flow in consultation is of supreme importance in teasing out the meta-perspectives of doctors and patients (Tuckett et al., 1985).

On a positive note, the majority of patients in this study (60%) reported getting all the information they required during their consultation and a large percentage received nearly all the information they required (31%). However, there was a sizeable minority (9%) who felt they were supplied with only half the information they required or less.

The frequency distributions for patient ratings of information received (from nothing (1) to everything (7)) are shown to the left of figure 6.4. There was no significant difference between those asking questions and those who didn't, in terms of getting all the information they required and the mean overall level of information provision was 6.34.

```
           PATIENT    (NOTHING)      DOCTOR
                       1
                    *  2
                    *  3
                    *  4  ***
                       5  ***************
          ***********  6  ***************
*********************  7  **
                     (EVERYTHING)
I____I____I____I____I__I     I__I____I____I____I____I
25   20   15   10   5  1     1  5    10   15   20   25
```

Figure 6.4. Scores for doctors' (estimated) and patients' (actual) ratings of information provision in terms of patient need.

The ratings shown to the right of figure 6.4 are for the doctors' assessments of how much information required by patients they actually supplied. These doctor estimates are significantly lower than the ratings made by their patients (chi-square=22.4, $p<0.001$, df=1) and clearly indicate that the doctors did not provide all the information they thought their patients wanted.

Observation of raw scores showed that, in fact, only four doctors overestimated the amount of required information they had given their patients. Three of these were the doctors consulted by the comparatively uninformed patients who had each rated information provision a full 3 points lower than their doctor's estimate.

This, of course, raises the issue of how well doctors 'read' their patients' needs or wants. Perhaps the doctors had no real idea of what the patients wanted to know and just assumed they probably didn't meet all their needs. Waitzkin (1985) compared patient and doctor responses (on a 7-point scale) regarding how much information the patient required. The mean discrepancy of -1.7 showed the trend toward underestimation by doctors and misperceptions occurred in 71% of all cases. This is, indeed, one of the problems which occurs when patient needs are not made explicit.

Pendleton et al. (1984) note that patients are generally poor at making their needs known regarding what they want from the consultation and that this creates problems for doctors. The present study asked patients what they wanted from the consultation and doctors what they thought the patient had wanted. Table 6.3 shows the low level of concurrence between doctor and patient across the whole sample. Only 29% of the doctors correctly judged all of their patient's purposes and 17% had read it completely wrong. Further analysis shows that most of the doctors achieving 100% accurate perceptions also reject the concept of the doctor's prerogative to limit information available to patients (70%).

An earlier study of 200 medical encounters also revealed that doctors are poor judges of why their patients have initiated consultation (Taylor, Burdette, Camp & Edwards, 1980). Katon & Kleinman (1981), further, note that doctors are relatively uninformed regarding what patients think about their illness.

Table 6.3. Recorded levels of concurrence between patient expectations and doctors' perceptions of these expressed as a percentage match.

| PERCENTAGE MATCH IN EXPECTATIONS | NUMBER OF DYADS ACHIEVING | % FAVOURING LIMITS |
|---|---|---|
| 100% | 10 | 30% |
| 67% | 2 | |
| 50% | 5 | |
| 33% | 9 | 84% |
| 25% | 3 | (ave for all) |
| 0% | 6 | (other groups) |

A formal test of the relative performance of doctors in the limit information/no limitation groups showed that the no limit group were significantly more likely to have 100% matches with patients than the supporters of information limiting (t=4.17, p<0.001, df=33).

This suggests that doctors who are guided by the principle of open information exchange tend to be better receivers of information than those who seek to control the information flow themselves. This extends the finding of Waitzkin (1985) that doctors holding general attitudes favourable to informing patients spent more time in informative behaviour and offered more explanations.

Consultation Frustrations

Patients were asked to comment on the consultation behaviour of doctors which they find frustrating. Twenty-eight patients provided the examples listed on table 6.4 and, as the table shows, there were two frequently cited complaints. The first was the doctor fobbing the patient off, not properly attending to his or her concerns; and the second was rushing the patient, giving the impression of lack of time and impatience. These two complaints made up 45% of the total comments on frustrating behaviour.

Twenty percent of the patients noted, either directly or indirectly, that there was no behaviour of doctors that was frustrating to them. By contrast only 9% of the doctors refrained from commenting about the patient behaviours they found frustrating; and those that did comment tended to write at length.

Table 6.4. Doctors' behaviour that patients find frustrating.

| DOCTOR BEHAVIOUR | % PATIENTS COMPLAINING |
|---|---|
| Not attending to concerns (fobbing/brushing off) | 26% |
| Rushing, not enough time, impatience | 26% |
| Unreceptive manner | 14% |
| Superior/ condescending | 9% |
| Not telling/ not explaining | 9% |
| Lack of understanding | 6% |
| No eye contact | 6% |
| Sharpness/ abruptness | 6% |
| Unsympathetic | 3% |
| Lack of care | 3% |

The doctors generally made more points regarding the behaviour of patients which they find frustrating and these were more forcefully put than was the case for patients describing frustrating doctor behaviour. Table 6.5 shows the main categories of complaint and the proportion of doctors reporting the behaviour.

Clearly, the inappropriate use of services, especially night calls, is a common source of frustration for doctors; many of whom feel their service is often abused. Within the consultation, though, the most common source of frustration is poor communication by patients. The forms of poor communication cited by the doctors were fairly diverse and wide-ranging but the message is clear; patients who mutter, mumble, beat about the bush and leave the doctor guessing what they really want are very frustrating to deal with.

Table 6.5. Main categories of frustrating behaviour noted by doctors in respect of patients.

| % DOCTORS REPORTING | BEHAVIOUR CATEGORY & SUB GROUPINGS |
|---|---|
| 40 | Poor communication |
| | Lack of clarity |
| | Slow responses |
| | Talking too much & not too the point |
| | Aggression |
| | Dishonesty, game-playing |
| | Presenting multiple problems |
| | Making late requests |
| 29 | Contentious patients |
| | Disagreeing with the doctor |
| | Not accepting dr's diagnosis/treatment |
| | Proposing own views on diagnosis/trtment |
| 29 | Inappropriate use of services |
| | Home visits |
| | Out of hours/night calls |
| | Frequent attendance for trivial reasons |
| 17 | Demanding patients |
| | Demanding to be seen immediately |
| | With inappropriate/unreasonable demands |
| 17 | Rudeness |
| 14 | Patients who won't take responsibility for their own health |
| 11 | Lack of appreciation |

Some doctors also appear to be easily frustrated when their views are not meekly accepted with due deference. As one doctor notes; he is infuriated by patients who arrive already convinced of the wrong diagnosis and treatment but he is even more infuriated when they have it right! Demanding and rude patients are certainly not enjoyed and people who won't take responsibility for their own health obviously make the doctors' job more difficult.

The general impression from the comments on frustration is that doctors feel they have an important job to do and like to fulfil their function with a minimum of impediment. As one respondent notes -

> "The elements I have listed as being frustrating could be quite enjoyable if seen in isolation".

It is clear that when these little irritants occur frequently they can become major annoyances.

<u>Presentation with Trivial Problems.</u>

Inappropriate use of services is clearly a major issue with doctors and many feel that attendance and/or call out for trivial problems is a source of considerable frustration. Cartwright (1967) reported that 56% of the doctors in her sample felt that more than a quarter of their consultations were for trivial, unnecessary or inappropriate reasons. A subsample of doctors was also asked to record a single day of consultation with each attendance marked as trivial or not. These records showed that the incidence of trivial consultations ranged from 0% to 72% with an average of 20%.

In a later study (Cartwright and Anderson, 1981) it was reported that 47% of doctors estimated that more than a quarter of their consultations were 'trivial'. The average of the estimates was 33% and Cartwright and Anderson propose that a high estimate of triviality suggests a degree of alienation from patients and their problems.

In the present study doctors were asked once again to estimate the proportion of patient visits they considered were for trivial problems. The average response was 40% and the range of responses extends from 10% of consultations to 90%; higher than in previous studies. Perhaps more worrying is that, in this sample of doctors, 72% report that more than a quarter of their consultations are for trivial problems. This is nearly twice the number cited ten years ago (Cartwright & Anderson, 1981) and provides some confirmation for Mechanic's (1974) view that doctors' frustrations would not necessarily be alleviated through group practice. Nearly all the doctors in the present study (94%) indicated they worked in a partnership or 'group' situation thus had the benefit and support of partners and ancillary staff.

One possible interpretation is that doctors are merely reaping the consequences of their own information control and many patients are consulting inappropriately because they have insufficient knowledge to do otherwise. Support for this view comes from a recent intervention study which showed that rational practice policy together with a program of patient education produces modified consulting behaviour (Rutten, van Eijk, Beek & van der Velden, 1991). Results showed that educating patients about coughs (handling symptoms, their self limiting nature and the criteria for medical consultation) produced a reduction in unnecessary consultations and led to greater responsibility being taken by patients for their own illnesses.

Ideal characteristics

The concept of the 'ideal' doctor or patient is hard to define and Stimson (1976) approached the problem using the dimensions of most and least trouble. He notes that the patients who are least trouble for doctors are those who communicate directly, rationally and effectively. The results of the present study clearly support this view and table 6.6 shows a number of frequently cited 'ideal' patient characteristics including the 'least trouble' characteristics (*), mentioned by 24 doctors in the sample.

Table 6.6. Characteristics which define the ideal patient.

| | CHARACTERISTIC | FREQUENCY CITED |
|---|---|---|
| | Compliant | 12 |
| * | Clarity of expression | 8 |
| | Motivated; takes responsibility for own health | 8 |
| * | Open; genuine; honest | 7 |
| * | Succinct; concise | 5 |
| * | Able to communicate | 4 |
| | Healthy | 4 |
| | Coming for appropriate reasons | 4 |
| | Appreciative; grateful | 4 |
| | Pleasant | 4 |

The single most often cited characteristic was compliance; the ideal patient apparently follows his or her doctor's advice! However, compliance is related to the doctor's ability to elicit and respect patient concerns, and provide appropriate information (Griffith, 1990). As Stimson and Webb (1975) point out, in the consultation the doctor makes treatment decisions but after the consultation decision-making lies with the patient. The patient is more than just a passive, obedient, unquestioning recipient of medical instructions (Stimson, 1974). This suggests that the concept of compliance would be better replaced by one of participation to ensure that the contents of the consultation and the decisions taken within it are compatible with the 'after consultation' situation.

Besides the more common features noted on table 6.6, there were some interesting additional comments including one which listed the ideal patient as "rich, stoical and totally trusting of the doctor". In fact, the range of the 'ideal' characteristics offered by doctors provides insight to underlying preferences for patients who are: clean, punctual and patient; present a single, treatable, medical or physical problem; and listen without confrontation and without being too inquisitive. Patients, for their part, had equally clear ideas about what makes an ideal doctor and showed a large amount of agreement about a few popular characteristics.

Table 6.7. Characteristics which define the ideal doctor.

| CHARACTERISTIC | FREQUENCY CITED . |
|---|---|
| Understanding | 14 |
| Listens | 12 |
| Competence; efficiency | 10 |
| Patient | 9 |
| Explains | 6 |
| Friendly | 5 |
| Helpful with health needs | 4 |
| Approachable | 4 |
| Kind | 4 |
| Sympathy | 4 |
| Honest; frank | 3 |
| Time to talk | 3 |

Table 6.7 shows that understanding, listening, competence and patience are the characteristics desired by many patients, while explanations, help with health needs and honesty are valued by a substantial minority.

## Communication Skills

It is clear from the traits valued by patients that doctors need to be skilled communicators. They must listen, show empathy and understanding, obtain and provide information, and appear competent in all situations. This suggests that communication must be an important part of medical practice and data collected in the present study provide an indication of just how important.

Doctors were asked to rate the importance of communication in their daily work with patients. The clear majority of respondents (86%) indicated it is of primary importance. The remaining 14% rated communication importance at 6 on a scale from no importance (1) to primary importance (7).

Reason would suggest that such an important skill would be taught in medical school, along with the other skills doctors need in order to practice medicine. Unfortunately, this doesn't appear to be the case and, as table 6.8 shows, the most common, and in many cases the only source of such skills is accumulated experience.

Table 6.8. Sources of communication skills described by doctors in the survey sample.

| SOURCE OF COMMUNICATION SKILLS | % DOCTORS CITING |
|---|---|
| Accumulated experience | 100% |
| Natural ability | 37% |
| Applying skills and techniques doctors have read about | 31% |
| Voluntary courses since registration | 20% |
| Medical school | 14% |

Despite the importance which doctors in practice attach to communication, it is clear that in most cases medical school has failed to provide them with appropriate training. Some of the spontaneous comments about medical schools as a source of communication skills, reveal that doctors are acutely aware of their failure:

D9 "DEFINITELY NOT!"

D34 "Training at medical school is virtually nil."

D29 "NIL"

D28 "No formal training at medical school."

D20 "Medical school training [is] slight - most benefit from watching others do it badly."

All these comments came from doctors in the youngest age group - the most recent graduates - who should have had the most enlightened training. Communication skills play an all important part in consultation and doctors deserve to be better prepared. Trial and error may work in the long run but the cost in poor service and mutual dissatisfaction may in reality be too high.

From the evidence collected in the present study, it appears that medical schools are not providing adequate training in communication skills to the doctors they produce. Furthermore, they never have. It is the medical schools which make the doctors of today; they are the source of much of what doctors bring to consultation in terms of knowledge, skill and attitudes. Further research is needed to establish the utility of social skills training in medical schools, particularly the provision of communication skills training and the part this plays in the wider curriculum.

Maguire (1984) suggests that many doctors remain complacent about their communication skills because patients give them little feedback about any deficiencies. Even when asked directly, patients are reluctant to express dissatisfaction (Ware & Hays, 1988), although they can and do judge physician performance in terms of desired actions (Rashid, Forman, Jagger & Mann, 1989; Ware & Hays, 1988; Larsen & Rootman, 1976).

## CONCLUSION

It is obvious that the opinions and beliefs of both doctor and patient have a material impact on the effectiveness of communication. It is also clear that the interaction of these opinions and beliefs is extremely complex. For this reason alone these factors should not be left to intuition; the doctor cannot be expected to absorb the knowledge from simply being with the patient or experiencing many consultations. Rather, the beliefs and opinions of the participants should be made explicit within the consultation and differences that exist should be dealt with openly. This is what information exchange is about and it is by these means that effective information flow offers a viable solution to many communication difficulties.

As Carl Rogers notes
"Good communication, free communication, within or between men, is always therapeutic."

(Rogers & Roethlisberger, 1957; p295)

# CHAPTER 7

# AN APPRAISAL OF COMMUNICATION SKILLS TRAINING IN BRITISH MEDICAL SCHOOLS*

## INTRODUCTION

It has been shown in the forgoing chapters that the ability to communicate with patients is a basic and necessary skill for medical practitioners. Furthermore it has been demonstrated that the information exchanged between doctor and patient is important in terms of successful diagnosis and treatment, for the successful resolution of patient problems, and for positive outcomes from the consultation.

The following study attempts to establish the extent to which medical education recognises the importance of communication skills in preparing for a career in medicine and the level of commitment within medical schools for the provision of meaningful training.

Broadly speaking, communication refers to the transmission of information from one unit in a system to another unit. The process of information exchange is dynamic and because we all take communication for granted familiarity tends to obscure the need for systematic attempts to better

* The material presented in this chapter has recently been published in an article entitled 'An appraisal of the current status of communication skills training in British medical schools' by L. Frederikson and P. Bull in Social Science and Medicine, 34(5), 515-522, 1992.

understand it. However, this basic activity - communication - is a central process in the medical consultation.
The General Medical Council, in fact, makes very specific recommendations to the medical schools outlining the aim and purpose of communication skills training in medical education. These form part of the Recommendations on Basic Medical Education issued by the G.M.C. Education Committee (1980) which prescribe the 'knowledge and skill' required for medical qualifications.

Generally, the medial schools' response to the GMC Recommendations was disappointing and by 1983 communication skills training was still not universally adopted. It was suggested that disinclination to adopt such training could be due to lack of evidence that it has any significant effect (Wakeford, 1983). However, Carroll & Monroe (1979) had already reviewed a total of 73 studies and found plenty of evidence. They concluded that instruction in medical interviewing has generally promoted significant gains in students' interview skills, as measured by various cognitive tests, affective instruments and observed behaviour. Furthermore, Carroll and Monroe report that by 1979 most United States medical schools were offering courses in interpersonal skills. A number of British studies also provided evidence that skills training can produce significant improvements in students' performance.(Sanson-Fisher & Poole, 1979; Maguire, 1979; Wright, Green, Fleetwood-Walker, Bishop, Wishart & Swire, 1980; Maguire, Clark & Jolley, 1977; Rutter & Maguire, 1976)

The Education Committee of the General Medical Council has continued to argue strongly that communication skills training be given greater prominence within medical curricula (G.M.C. Education Committee, 1987; 1991). However, despite a growing trend among medical educators to include some communication skills training (G.M.C., 1987) change has been slow and hard won. There remains a lack of consensus on suitable course content and, inevitably, competition for curriculum share against other clinical topics.

In the current review of its Recommendations on Basic Medical Education, the Education Committee Working Party comment on the continued relevance of the 1980 Recommendations and also the limited extent to which they have been implemented (G.M.C. Education Committee, 1991). Article seven of the report notes that patients have a growing knowledge of medicine and are sometimes critical of their doctors' ability or willingness to listen to them. This is taken to reflect on the quality of undergraduate medical education. The new proposals outline an integrated, core-plus-options system, which incorporates communication skills training within the core curriculum.

These proposals are entirely laudable but change in institutions is inevitably a slow process and it remains to be seen how readily they will be incorporated into the medical institution - the organised body of medicine with all its beliefs, values, habits and methods. It must be recognised that there is inherent resistance to fundamental change; furthermore, superficial changes may occur to indicate that something is being done and thus avoid any of the deep and meaningful changes that would truly be necessary if the job was to be done properly.

Medical education in Britain remains bound by tradition; the medical schools continue to select students who show ability in science and maths and are able to do well in exams (McManus & Richards, 1984). Training remains centred in hospitals and universities; once basic prescribed skills are mastered, students move on to clerkships where they refine their "interviewing" or "history taking" skills. These tend to be highly routinized, mechanistic procedures often resembling a cross-examination rather than an interaction.

Part of the problem, as Metcalfe (1983) suggests, is that medical students are particularly sceptical of the behavioural sciences. Such an attitude would merely reflect the institutional attitude within medical schools (Acheson, 1986) and help perpetuate the old order. Some years ago Bandura and Walters (1963) defined imitative learning as the tendency to reproduce the behaviour of living or symbolic models. This process of imitation and identification appears to operate when student doctors acquire behaviours which reflect 'professional' attitudes. Listening and talking with patients is an essential skill and, if it is to be treated seriously, requires not only room in the curriculum for appropriate training but also assessment which must be critical to the students advance.

The literature on skills training programmes identifies several key areas crucial to effective training. Firstly teaching methods and environment must be congruent with the models of communication being taught. "In any educational programme it appears to be fundamental to avoid the charge of advocating things other people should practice in their work while failing to practise them oneself." (Day, 1977; p 17.)

In addition a reasonable framework incorporating purpose and goals must explicitly guide the training scheme. Without such a framework training tends to drift from method to method allowing the techniques to become the ends in themselves with little understanding of the meaning and purpose of what is being attempted (Brislin & Pederson, 1976).

Evaluation is the third important component of training; goals should be capable of being evaluated so they can be modified or eliminated as a result of study. Of course the effectiveness of training must be evaluated both immediately and long term (Maguire, Fairbairn & Fletcher, 1986).

The present study incorporates these critical aspects of training into an appraisal of communication skills training in medical education. Previous surveys have investigated communication skills training in medical education only superficially and in doing so have provided a distorted view of the real situation. It has been all to easy for medical schools to adopt a minimum standards approach to communication skills training and maintain the pretence that communication skills are inherently taught as part of the traditional apprenticeship method.

The study which follows uses a multi-perspective approach to consider, in depth, three dimensions of the communication skills issue: Firstly, as a selection consideration; secondly, in terms of the methods of training; and thirdly, with respect to evaluation and assessment. This approach should provide a clearer, more accurate picture of the way medical schools are dealing with an important curriculum topic.

## METHOD

Subjects: The survey population comprised all 27 universities in the United Kingdom which incorporate a medical school as listed in University Entrance: The Official Guide, 1990. The individual targets were the Deans of Undergraduate Medical Training. Because of the idiosyncratic nature of the organization of teaching within each school it was decided that identifying such a target would enable direction of the request for information to the appropriate member of staff at each university.

<u>Materials:</u> A concise one page questionnaire and an official prospectus from each university. The questionnaire, which is shown in Appendix E, was intended to be short enough to encourage a response yet open ended to allow for a variety of replies reflecting different approaches. The instrument was designed to 'tap into' three aspects of communication skills in medical training: 1) as a factor in selecting candidates for medicine; 2) as part of the total curriculum offered; and 3) the manner, purpose and evaluation of training in communication. The study was planned to collect anonymous responses in order to encourage frank and honest replies and thus gain an overview of the educational processes currently prevailing.

<u>Procedure:</u> The single page questionnaire was sent with a covering letter, shown in Appendix E, to all 27 Undergraduate Deans in a single mailshot. The letter specifically asked the addressee to pass on the questionnaire for completion by another member of staff should this be more appropriate. All respondents were provided with an envelope already addressed to the researcher to facilitate the return of the completed forms.

In addition, a request was sent to the Admissions Registrar at each university for a medical school prospectus. These were scanned to obtain information regarding student selection criteria and references to communication skills programmes.

## RESULTS

The results of the present study were derived from: 1) information provided in the prospectuses of the 27 medical schools in Britain; and 2) responses to the survey questionnaire returned by 24 of these medical schools.

### SURVEY OF PROSPECTUS MATERIAL

All medical schools provided their most recent prospectus and table 7.1 summarizes the information derived from these publications. This clearly shows the predominance of science subjects among the A-level requirements for admission to medical school.

Initial selection of candidates is made on the basis of the UCCA form, including the referee's report, and for 37% of the schools this is the only basis for selection. The majority of schools confirm final selection following a 10 - 15 minute interview.

Table 7.1. A-level requirements, selection methods, and social/psychological aspects of the curricula at the 27 medical schools in Britain.

| A-LEVEL SUMMARY | NO OF SCHOOLS |
|---|---|
| chemistry + 2 of biology/ maths/physics | 16 |
| chemistry + 1 of biology/ maths/physics + 1 approved | 9 |
| chemistry/physics + 2 approved | 9 |
| chemistry + physics/maths + biology/zoology | 1 |
| chemistry + physics + 1 of maths/biology | 1 |
| biology + 2 of chemistry/ maths/physics | 1 |

| SELECTION PROCEDURE | NO OF SCHOOLS |
|---|---|
| UCCA form only | 4 |
| UCCA form + interview for a few | 5 |
| UCCA form + interview for all | 17 |
| Information not available | 1 |

| SOCIAL/PSYCHOLOGICAL ASPECTS | | NO OF SCHOOLS | (EXAMINED) |
|---|---|---|---|
| behavioural science | year 1) | 1 | |
| n = 9 | 2) | 1 | |
| | 1&2) | 4 | (1) |
| | 3) | 2 | |
| | 2&3) | 1 | |
| psychology | year 1) | 2 | |
| n = 19 | 2) | 8 | (5) |
| | 1&2) | 6 | (1) |
| | 3) | 2 | |
| | 1,2&3) | 1 | |
| sociology | year 1) | 2 | (1) |
| n = 13 | 2) | 5 | (3) |
| | 1&2) | 5 | (1) |
| | 1,2&3) | 1 | |
| communication skills | year 1) | 1 | |
| n = 7 | 2) | 1 | |
| | 3) | 3 | |
| | 5) | 1 | |
| | integrated) | 1 | |

Table 7.1 also shows that only seven schools (29%) mention communication skills training as a formal and specified part of the curriculum. As most of the schools covered course content in great detail including subject areas, stages occurring and the aims of teaching, it is reasonable to assume that only the schools mentioning communication skills consider it a legitimate and necessary part of the curriculum.

This information provides evidence of the institutional attitudes to the role of communication skills training in basic medical education. It is therefore instructive that only seven schools make explicit mention of the part this topic plays in their outline of formal course requirements.

ANALYSIS OF QUESTIONNAIRE RESPONSES

The results of the survey were tabulated from the total responses available after three months. The response rate was high with 89% of the questionnaires completed and returned.

Results of the first part of the questionnaire are shown in table 7.2 and here a slightly different picture emerges from that provided by information in medical school prospectuses. Firstly, 71% of the respondents claim that their schools consider the communication skills of applicants with respect to their prospects of admission to the undergraduate course in medicine. Secondly on the question of formal training in interpersonal communication all 24 (100%) respondents indicate their courses include such training.

In all probability this group of 24 respondents includes the seven schools who explicitly mention communication skills training within their prospectus; leaving at least 17 schools who chose to omit this aspect from their curriculum outline.

Table 7.2. Communication skills in the process of selection, teaching and assessment at medical schools.

| | Yes | No |
|---|---|---|
| Communication skills of applicants considered with respect to admission to course. | 17 (71%) | 7 (29%) |
| Course provides formal training in inter-personal communication | 24 (100%) | - |
| Are communication skills of trainees assessed formally? | 6 (25%) | 18 (75%) |

From the evidence so far, it seems safe to conclude that some training in communication skills is being offered at all of the medical schools. With respect to assessment, however, the questionnaire results shown on table 7.2 indicate that the commitment to truly effective training in communication skills is really quite weak. Only 25% (6) of the undergraduate medical courses report that they actually undertake formal assessment of communication skills. The rest indicate that they teach the topic but make no formal attempt to evaluate the acquisition of communication skills among students.

Figure 7.1 shows the general uniformity across medical courses regarding the amount of curriculum content devoted to developing communication skills. Of the 21 schools responding to this item, 95.24% devoted less than 10% of their total course to communication skills and a clear majority of schools (71.43%) allocated less than 5% of the curriculum to the topic.

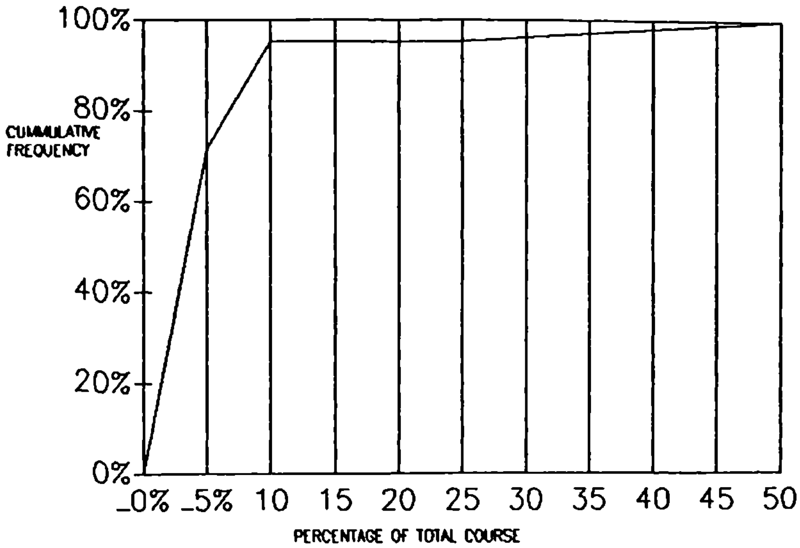


Fig 7.1 Proportion of courses devoting less than the specified percentage of total course content to the development of communication skills.

Only one respondent reports more than 10% of the curriculum devoted to developing communication skills and in this school they believe they spend more than 25% of the total course on this subject. A further three schools were not included in the analysis since the respondents did not feel able to indicate how much communication skills training occurs in their courses.

The variety of teaching methods which have been adopted for communication skills training are shown on table 7.3. Clearly the most favoured methods for undergraduates are video feedback, tutorials, roleplaying and lectures. Other means of teaching included the use of simulated patients with feedback, observation with real patients, self teaching, workshops, seminars and group discussion. These were used by only few schools and always in conjunction with the previously mentioned 'mainline' methods.

Table 7.3. Teaching methods for communication skills.

| | No of Schools using the method |
|---|---|
| tutorials | 22 |
| video feedback | 21 |
| roleplaying | 19 |
| lectures | 12 |
| simulated patients | 4 |
| real patients | 3 |
| self teaching | 2 |
| workshops | 2 |
| seminars | 1 |
| group discussion | 1 |

There were a total of 37 objectives offered by the 24 medical schools in response to the question "What is the purpose of communications training?" Table 7.4 shows eight disparate, composite statements derived from the responses.

Table 7.4. Purposes of communication skills training.

| PURPOSE | NUMBER ASCRIBING |
|---|---|
| To provide students with communication skills they can utilise in their professional interactions. | 10 |
| To improve/promote doctor-patient communication & to encourage mutually satisfactory interactions. | 8 |
| To enhance clinical skills including history taking & patient interview. | 6 |
| To understand the nature of interpersonal communications, problems & solutions | 6 |
| To increase self awareness | 3 |
| To facilitate communications with medical colleagues & ancillary staff. | 2 |
| To introduce counselling techniques. | 1 |
| Because it is regarded as vital skill for medical practitioners | 1 |

In considering the purposes of communication skills training ten medical schools sought to provide their students with skills they could utilise in a professional capacity. Eight aimed to improve or promote satisfactory doctor-patient interactions. For six respondents the objective was for students to gain understanding of the nature of interpersonal communications and six courses were concerned with the application of the skills in history taking.

Other purposes offered were improving awareness, communication with colleagues and the introduction of counselling techniques. One respondent indicated that instruction in communication skills was necessary because such skills are vital for medical practitioners.

Only six of the 24 medical schools responding indicated that they explicitly undertake formal assessment of communication skills. Table 7.5 lists the methods of assessment used by the schools and, in three cases, those responsible for the assessment. Four of the respondents indicate that communication skills are practically assessed as part of OSCE stations (Objective Structured Clinical Examinations) but Psychiatry, Obstetrics/Gynaecology and General Practice are the only specialties involved. In addition, Modified Essay Questions are used to assess knowledge of skills.

Video playback is used in assessment of the practical application of skills by one school and subjective ratings of practical communication skills are included in clerkship reports by another. One school relies on end of course assessments according to the standards of interested staff while another has examiners observe patient interviews during the mental health block.

Table 7.5. Assessment of communication skills.

| MEANS OF ASSESSMENT | BY WHOM | ADEQUACY DETERMINED |
|---|---|---|
| OSCE | Medical & GP staff | - |
| Knowledge of skills assessed formally. Subjective ratings of practical skills as part of clerkship reports. | - | Subjective impression on wards. |
| -By video & MEQ at start of clinical course.<br>-By video in year 5.<br>-At 2 OSCE stations during year 5. | Psychiatry, Obstetrics/ Gynaecology | - |
| End of course assessment in CS & in clinical subjects especially GP. | - | Standard set by senior staff with interest, learning & skills in CS. |
| -In 4th year Mental Health block students are observed during 40 min interview with patient and CS are part of assessment.<br>-Two end-of-block OSCE's include aspects of CS. | 2 examiners<br>Dept of GP & Obst/Gyn | Ratings of trained observers. |
| OSCE in phase II clinical medicine. | - | - |

Responses to the item requesting details of what determines adequacy of communication skills were limited, as can be seen from table 7.5. None of the respondents were able to respond in terms of a rating score or level of achievement. Adequacy is determined by 'impression gained', subject to arbitrary standards or, in one particular case, by the ratings of trained observers. However, no details are provided of the rating scale or scores which distinguish adequacy from inadequacy. Similarly there is no indication in any of the responses of how well a candidate must perform in order to be considered adequate in terms of the communication skills he had been taught.

## DISCUSSION

It is perhaps pertinent to make two points about the data under discussion at this point: 1) data collection depended on the goodwill of respondents to expend time and effort to complete and return the questionnaire; 2) this method of data collection forced a trade off between complexity and likelihood of response. Despite the obvious need for brevity, a coherent and integrated questionnaire was formulated to address the single issue of how medical schools are dealing with communication skills training.

From perusal of the completed forms it is clearly apparent that some respondents contributed more to the survey than others. However, the relatively speedy response from the 24 medical school respondents was gratifying and provided a general indication of the prevailing awareness within medical schools of the current concern regarding communications skills in basic medical education.

This is equable with the initial conclusion drawn from the results of the survey: no-one is denying the importance of communication skills and every one wants to be seen to be doing something about them. What is disturbing, however, is that the display of positive attitudes is not backed up by appropriate behaviour within all the institutions charged with providing basic medical education and this is the survey's 'bottom line'.

Take as a starting place the selection of students; the synopsis of A-level requirements showed overwhelmingly that ability in physical sciences is recognised as the primary basis of a career in medicine. This occurs despite the fact that a doctor's working day is filled with people he must communicate with effectively in order to do his job. Metcalfe (1983) noted this as a shortcoming in the selection of medical students and Bradshaw (1978) points out the long standing tradition it supports. Clearly, the present study shows that change is not occurring in the area of student selection.

The process of selection for entry to British medical schools begins with consideration of standard UCCA forms. These provide information about the education, background and examination results of candidates and also include a confidential statement by a referee. The referees are asked to comment on 23 items of interest to the selection committees. These items include eight which cover education and two which address the "power of expression" and "social abilities" of candidates (UCCA,1990).

Obviously it is difficult to assess the communication skills of candidates from such a form yet for nine of the medical schools this is the only consideration of communication skills prior to admission. The remaining schools pre-select on forms and make offers after seeing candidates in a 10-15 minute interview. A face to face encounter can, certainly, reveal more about a candidate's communicative manner than a mere form. However, the interview becomes an essentially confirmatory decision tool when one considers the large scale elimination of candidates which proceeds on the basis of information contained in the UCCA form.

One can only conclude that in the absence of a reliable and valid predictive criterion for career success, medical schools have merely prolonged the use of traditional means and heuristic methods. As McManus and Richards (1984) showed, A-level achievement is the major determinant of acceptance and personality factors have no noticeable effect in the selection of candidates.

While it can be argued that not all candidates seek medical training in order to be practising clinicians it remains that by virtue of such training they are deemed 'qualified' to be bedside physicians. It is precisely this element of qualification that makes an adequate standard of communication skills imperative in all cases rather than only in those anticipating a need for them.

The school prospectus is the interface between the institution and the public from whom its students are drawn. As such it is both an account of course content and a reflection of the organizational 'climate'. It is therefore instructive that only a minority of schools mention formal training in communication skills as part of their curriculum in the prospectus but 100% claim to be providing such formal training in the present survey. The obvious conclusion is that for a number of schools communication skills are given insufficient weight and prominence when medical curricula are considered as a whole.

From the questionnaire responses it is clear that acquisition of communication skills is accepted as desirable; it is also clear that communication skills training is still being treated as a minor subject of low significance and denied its proper place in an already overcrowded curriculum. Medical education pays lip service to communication and interpersonal relations while remaining disease oriented in its approach. The results of the present study show that nearly three-quarters of the medical schools in Britain devote less than 5% of their course to interpersonal skills; yet it is hard to imagine any field of human activity where effective communication is more important.

Many schools deny the need for specific courses in communication skills and orient towards the concept of integrated teaching. However, comments like "the importance of communication is stressed in all our courses" tend to undermine the validity of a claim to be providing formal training in the subject. It must be said that true integration of communication skills training in other subject areas has clear advantages, especially in terms of generalising skills and practical application, but this relies upon a sound basis of specialist teaching of communication theory and interpersonal skills. This of course assumes a curriculum slot for formal training as the basis of integration. Integration without this formal anchor results in diffusion of responsibility across many separate departments with concomitant organizational difficulties and limitation of resources and commitment.

A common strategy for dealing with communication skills training is to embed the topic within a behavioural science module, perhaps psychology or sociology, yet these disciplines are themselves only tolerated rather than wholeheartedly embraced as a coherent part of the structure of medicine. Acheson (1986) points out that from the educational viewpoint those responsible for teaching behavioural sciences in medical schools may experience difficulties because of antagonism (overt and covert) from teachers of clinical practice and biological sciences.

In the sphere of medical education there appears to be excessive emphasis on pathology, physiology and disease while the importance of interpersonal influences on medical care receives little attention. Support for this view comes from The Alternative Prospectus for St Georges Hospital Medical School. Written by students, it reports that medical statistics and behavioural sciences are not taken seriously by students unlike physiology which is described as the best taught and most interesting course for the first year.

Further doubt about the general level of commitment among medical schools towards meaningful and truly effective training in communication skills is provided by the large number of schools claiming they do not explicitly assess the skills obtained by students. Obviously, unassessed curriculum content is more likely to be discounted by students in favour of the topics in which successful performance is critical to advancement. As Maguire, Fairbairn and Fletcher (1986) conclude, assessment is an integral part of effective teaching of communication skills and it is necessary to ensure competence before qualification as a medical practitioner.

While procedures such as OSCE, modified essay questions and video analysis are undoubtedly in common use throughout the medical schools, they consider communication skills only indirectly. The main purpose of most of these activities is the assessment of clinical skills, making communication skills a subsidiary issue.

From the survey responses regarding assessment it is clear that communication skills are taken quite seriously by only a few specialties, notably psychiatry, obstetrics & gynaecology, and to a lesser extent general practice. However, explicit evaluation occurs relatively rarely and appears in the main to be ineffective. None of the respondents provided any criterion of adequacy and while one school mentions the use of rating scales there is no indication of any minimum standard. Clearly failure in communication skills is not critical and while acquisition of these skills by students is desirable the medial schools do not currently see it as essential.

Assessment is important for evaluating both individual performance and effectiveness of training. Maguire et al. (1978) for example showed, by mean group scores, that training based on constructive feedback was generally effective in improving students' ability to elicit information. But only video and audio feedback groups showed significantly improved interview techniques. With respect to individuals, though, it was revealed that there were some students in each group who failed to show improvement, continuing to interview in a way which alienated their patients. This underlines the importance of monitoring the outcomes of training in order to effectively modify course content and methods.

Responses to the present survey show that currently videofeedback, tutorials, roleplaying and lectures are the most commonly used methods of training. Each of these has both advantages and limitations. Feedback of any kind can be useful only if it is constructive, highlights existing strengths and seeks the development of strategies to overcome apparent weaknesses. For this reason it is to be hoped that the key features of British medical education noted by Smith (1989); "failure, disappointment, survival, humiliation and stuckness", do not occur in the sphere of communication skills training.

Rutter and Maguire (1976), in fact, assessed the contribution made by the feedback component of a training programme, previously shown to significantly improve students skills at history-taking. Contrary to expectations, the video feedback contributed very little to the training; the observed improvement was apparently produced by reading, discussing, and studying a printed hand out.

The use of roleplaying is interesting because its effectiveness depends on emotional involvement (Mann & Janis, 1968), a characteristic normally excluded from medical practice. However, it appears that the emphasis is acting out the doctor role rather than appreciation of how a patient feels. This is consistent with the implicit role patients themselves play in the education of medical students - providing a supply of sick bodies from which to learn.

Tutorials and lectures are of course a good way to establish the theoretical basis of training and to provide the rationale for methods, aims and objectives of training. Unfortunately the majority of purposes for training elucidated in the present study are so general as to suggest rationalization rather than rationale; they also tend to state the obvious. It is hard to see how statements of purpose such as: "to help students communicate with patients" or "to improve doctor-patient communication" can possibly provide the logical, theoretical basis for training.

It is worthwhile considering whether these superficial responses might have been offered because they provided an easy way to answer the question. However, if this were the case it would surely indicate the respondents had no formal 'mission statement' available; no meaningful concepts already determined which would adequately explain the aims and objectives of communication skills training in their own school.

There were, of course, a number of respondents who answered in detail but many of the specific purposes offered (such as "taking a history" or developing "clinical skills") revealed an underlying bias toward a doctor-centred rather than a patient-centred approach.

There were disappointingly few enlightened objectives which emphasized understanding and awareness together with the importance of achieving effective and sensitive interpersonal communication. It is perhaps instructive that only one school, out of the 24, referred to communication skills as vital for medical practitioners. In consideration of the results of the present study it is clear that only a few individual schools are currently committed to teaching communication skills in a positive and meaningful way. It is a shame that medical education as a whole does not adopt the same approach.

There is a real need for all teaching staff in medical schools to be knowledgeable about and committed to practising effective communication with patients. Otherwise, students will continue to struggle with the dissonance aroused by conflicting messages. On the one hand they will be told good doctors employ effective communication skills; and on the other they can daily observe practitioners with excellent technical skills and high professional status who display few positive interpersonal skills at all.

Sanson-Fisher and Maguire (1980) point out that a substantial proportion of practitioners display a less than adequate level of skill in their interactions with patients; and therefore, question whether they can teach skills in communication effectively and provide appropriate role models. Suggestion, imitation and identification provide a 'fast track' to learning (Brislin & Pederson, 1976; Bandura & Walters, 1963) and until there is a profession-wide adoption of training that successfully integrates didactic, experiential and modelling sources of learning, the acquisition of communication skills by doctors will remain problematic.

In conclusion it is perhaps worth noting that recently, in one month alone, the Medical Defence Union was notified of 59 people who felt so incensed by their practitioners' inability to communicate that they resorted to making a complaint (Nesbitt, 1990). The patient's problem ultimately becomes the doctor's problem and unless the issue of communication is adequately and appropriately addressed at the level of basic medical education, doctors will have to labour on with a disappointing legacy of dissatisfaction.

# CHAPTER 8

# PATIENT EDUCATION: AN ATTEMPT TO IMPROVE COMMUNICATION

## INTRODUCTION

In previous chapters a number of factors relating to the information-processing model have been tested in both general practice surgeries and in the community. Information exchange has been shown to be important to patients in the context of medical practice and direct relationships have been found between information flow in the consultation and outcomes such as satisfaction, perceptions of the doctors response and view of the appropriateness of treatment.

The model proposes that if patients state their reasons for coming, say what they want, share their view of the problem and provide all relevant information then the communication will be clearer and consultation more effective. Patient education is seen as one of the means of implementing a better attitude to information exchange on the part of patients and bringing real change for the better. It has been assumed that activated patients will be more involved and better equipped to take responsibility for their own health (Putnam, Stiles, Jacob & James, 1985; Roter, 1977; Eisenthal, Koopman & Lazare, 1983; Greenfield, Kaplan & Ware, 1985; Benarde & Mayerson, 1978); thus relieving some of the communication difficulties faced by doctors.

Tuckett, Boulton, Williams and Olson (1985) investigated patient input to the consultation and found that most of the patients studied provided selective input and kept a great deal of the information to themselves. A categorization system was employed for content areas and results showed that for each category more than 60% of the patients withheld relevant information that the doctor was considered unaware of. They also found that 76% of patients would have liked to ask a question or express a doubt but were reluctant to do so. Reasons preventing patients from such actions seemed to be fear of negative sanctions or belief that it was not their place to do these things.

Analysis of the consultation atmosphere indicated that patients who questioned doctors were in fact more likely to experience a consultation characterized by evasive attitudes and behaviour, increased tension, talk at cross purposes and confused verbal sparring. Maguire (1984) further suggests that patients learn not to question or offer information in order to avoid the negative consequences.

> "When patients have persisted in asking a question the doctor has often been brusque, irritated or ended the consultation". (p 165)

It is important for patients to provide relevant information in the initial stages of the consultation since at this time doctors are constructing particular sorts of interactions with their patients through what they both say and how they say it (West, 1984). However, Byrne and Long (1976) report that even when doctors explicitly ask "Is there anything else?" at the close of the consultation it is extremely rare for patients to volunteer anything further. More usually it is seen as a closing strategy and in 99% of cases studied both doctor and patient were up and out of their seats within seconds (Byrne & Long, 1976; p 57).

Roter, Hall and Katz (1988) summarized the literature in doctor-patient communication and conclude that while attempts to change physician behaviour have been quite common only few interventions have been aimed at patient behaviour. Two of the more notable studies were attempts to increase patient participation through question asking (Roter, 1977; Greenfield, Kaplan & Ware, 1985). Both studies involved sessions with health educators prior to the patients seeing the doctor and both successfully increased patient involvement in the consultation.

Unfortunately, the increased question asking in Roter's study was accompanied by greater tension, anxiety, and anger within the consultation. The 'activated' patients were less satisfied with their visits but achieved higher internal locus of control scores than the control group. The Greenfield et al. intervention produced an effect on two dependent variables; the number of patient utterances per minute increased and there were improvements in functional status. However, the increased involvement had no apparent effect on the patients' disease and there was no obvious link between patient activity and enhanced wellbeing.

The use of a health educator to work with each individual patient makes the method unsuitable for wide scale application. However, it seems two of the factors leading to improved information flow are patient encouragement and the conveyed message that the doctor welcomes the input. It is clear that the doctor must want the patient to pick up the responsibility for providing appropriate and timely input in order to avoid the negative consequences observed by Roter (1977).

Tuckett and his colleagues (1985) attempted to influence the participation of patients with a fairly wordy pamphlet entitled 'Speak for Yourself: A Guide to Asking Questions of Your Doctor'. They did not formally evaluate the impact of the pamphlet but make the comment that doctors and patients valued the experience. Two examples are given of patients who 'opened up' areas of discussion previously considered closed. However, the leaflet was very long and it would be difficult for patients to organise the material and use it spontaneously.

A recent intervention to improve patients' contribution to communication suggested that simple methods may be just as effective in producing positive change (Thompson, Nanni & Schwankovsky, 1990). Thompson and colleagues assigned patients to three conditions: 1) no intervention; 2) asked to list three questions to ask the doctor in the visit; and 3) given a message from the doctor encouraging question asking. Both the experimental groups asked more of the questions they had wished to, had greater feelings of control and were more satisfied with the visit in general and the information received. These two simple interventions were equally successful, suggesting that either thinking one's questions out or knowing that the doctor is open to questions produce more effective communication from the patients' point of view.

This research in patient involvement has marked a timely change away from theorizing about why information flow is restricted towards contributing to how the flow can be improved. However, the studies have implicitly equated involvement with question asking when in reality a much wider definition is deserved. Patient involvement extends beyond questioning and includes the provision of information about concerns, beliefs, doubts, needs and views. Furthermore, none of the studies have explicitly measured the physicians' response to the interventions. Patients are clearly pleased to have the opportunity to ask more questions, but does this translate into improved information flow or better communication?

The aim of the present study is to extend evaluation of the effects of patient education to include the doctor's response. The impact of a patient leaflet encouraging a more thoughtful and prepared approach to consultation will be evaluated using doctor ratings of the communication. Using the information-processing model as a guide, the quasi-experimental design offers three basic improvements: Firstly, a wider view of involvement expressed through explicit requests for patient information, explicit directions about the need to organize thoughts and encouragement to ask questions if desired. Secondly, patients are explicitly informed that the doctor welcomes all these behaviours. Thirdly, the intervention is linked to a distinct positive outcome - the communication experience.

The patient education leaflet entitled 'The Patient's Guide to Consultation' is intended to encourage patients to make more effort to provide the necessary information for successful encounters. The efficacy of the intervention will be demonstrated by more successful communication between patient and doctor. It is hypothesized that better communication will occur between the doctor and experimental patients than with the control group and that more of the experimental group consultations will be characterized by 'good' communication.

METHOD

Subjects: Eighty patients consulting with a single doctor at normal surgeries during the week the study was conducted. This constituted the entire general consulting population for the week; diabetic and baby clinic attenders were excluded.

Materials: The education material was a single page A4 leaflet folded in half with the title 'The Patient's Guide to Consultation' on the upper side. Inside the leaflet were items instructing the patient to think about why he or she was attending, the problem experience, worries and what the doctor can do. The patient was also instructed to tell the doctor all these things clearly, concisely and early on in the consultation. Lastly, the patients was urged to listen to the doctor and specifically to ask for more information on particular points of interest. The leaflet concludes by pointing out that the doctor is not a mind reader and relies on the patient to stop, think and tell; a copy of the leaflet is included in appendix F.

Procedure: The dependent variable in this study is the doctor's rating of communication in consultation, so during the week immediately prior to the study the doctor rated all normal consultations (special clinics excluded). This was to provide practice at using the three point scale, to ensure the rating system was workable and to allow the doctor to reach an acceptable level of reliability at rating through experience. The rating scheme consisted of categorising the communication into one of three levels: poor, average or good communication.

During the study period the doctor continued to rate all patients remaining blind to group membership which was allocated randomly. For each patient arriving at the reception desk a card was turned over from a shuffled pack containing 40 green and 40 brown cards. A green card indicated the patient was to be given the leaflet while a brown card meant being a control. Group membership (control or experimental) was noted beside the patient's name and at the end of surgery the doctor's rating for communication was added and names deleted.

Experimental group patients were given the leaflet and told that the doctor was thinking of giving them to all patients. They were asked to read the leaflet and mark the back with 'yes' if they thought it was a good idea or 'no' if not. They were also asked to add any comments that occured to them about the advice inside and to help the doctor by complying with the instructions in the leaflet. The leaflets were handed back to reception before the patient went in to see the doctor and patients were all advised that the trial depended on the doctor not knowing who had read the leaflet and who had not.

At the time of the study, the practice was processing a number of new patients calling in to register pending the retirement of a nearby, single-handed doctor. This meant that there were a number of people besides the experimental patients reading and filling in forms, so it was unlikely that the control patients felt they were missing out on anything. In addition, the waiting room was shared by two practices with a total of up to five doctors on duty so once again the control patients were not likely to feel singled out as not receiving any documentation

RESULTS

Table 8.1 shows the distribution of communication scores for the experimental and control groups. This clearly shows the greater number of experimental patient consultations rated as 'good communication' encounters.

Table 8.1. Distribution of communication scores for the experimental and control groups.

| | POOR COMM | AVE COMM | GOOD COMM |
|---|---|---|---|
| CONTROL | 3<br>7.5% | 14<br>35% | 23<br>57.5% |
| EXPERIMENTAL | 1<br>2.5% | 7<br>17.5% | 32<br>80% |

Because of the low numbers in the 'poor' communication cells raw scores were converted to binary scores 'good communication' or not 'good communication'. This enabled the use of the Chi-square statistic to test the research hypothesis that more of the experimental group consultations will be characterized by good communication.

The proportion of control consultations having good communication was 57.5% and for patients who read the leaflet the proportion was 80%. There is a significant association between reading the leaflet and good communication (Chi-square = 4.71, $p<0.05$ ~~$p<0.5$~~, df=1).

The research hypothesis also predicted a group difference for communication scores and this was tested by a comparison of group mean scores. Based on a value rating of 1 for poor communication, 2 for average communication, and 3 for good communication, group means were calculated. The mean score for the group who read the leaflet was 2.77 while the control group mean was 2.5. These mean scores are significantly different at the 0.05 level ($t = 2.17$ $p=0.033$, df=78) thus the research hypothesis was supported on both counts.

As far as patients were concerned, all 40 of the experimental group marked the leaflet with a 'yes' indicating they thought the leaflet and contents were a good idea. Many of them included comments expressing their own desire to undertake the actions suggested and some noted that writing down points to remember would be helpful. One patient is deterred from taking along a reminder list because - "A piece of paper is handy but frowned upon!!"

Three of the respondents pointed out they already do the things requested and four people admitted they usually forget to mention things they did wish to talk about. The following examples will convey a little of the flavour of patients' reaction to the leaflet and its contents:

> " ... when one sits down in front of the doctor it is noticeable that ones head suddenly empties until one is outside again..."

> " Good communication is essential."

> "In a way doctors are like computers, if you don't give all the information they cannot do their job properly."

> "I think [the leaflet] is a good idea. It may also help to keep appointments running to time."

> "It gives you the courage to open up..."

It appears that although the effects of the intervention were not evaluated from the patients' point of view the leaflet itself contained a message they were well disposed to hear.

## DISCUSSION

The results of the present study clearly support both parts of the research hypothesis and exposure to the leaflet 'The Patient's Guide to Consultation' was associated with more effective consultation. Consultations with patients who had read the leaflet were more likely to be characterized by good communication than consultations with control patients. Thus there was a measurable consequence of reading the leaflet and the positive benefits were apparent to the doctor involved.

The main message in 'The Patient's Guide to Consultation' is that the doctor relies on patients to provide information about their own personal view of the problem they are experiencing. This indicates that patients are not being presumptuous if they talk about what they think the problem is or what they hope the doctor can do they are simply providing information which can help the doctor as he formulates a plan. The idea of mutual information exchange is clearly presented as the 'proper' consultation format with patients being urged to think about why they are attending and to let the doctor know what information they require.

That this was the received message is clear from the comments quoted above. Patients noted the benefits of both organizing their information before seeing the doctor and also being able to talk openly. The design of the present study doesn't allow separate consideration of the effects of these two factors and clearly some people may find it easier to organise thoughts than to voice them. However, the experience of one particular patient is instructive. The lady was elderly and normally quite submissive but after reading the leaflet she went into the doctor and asked for a specific drug which had been recommended by a friend. She prefaced her request with the paraphrased statement below:

> - Having read your leaflet I'm going to ask you outright; I did think it was unethical but now I know it is all right to ask -

Her communication was much more direct than the doctor had previously experienced and he commented on this at the end of the session. Of course, since the doctor was not blind to the patient's group membership she was not included in the sample but the incident is worth relating. It is, perhaps, pertinent to note at this point that the doctor was asked during and after the study if he was aware of the group status of any other patients. Apart from the one case mentioned, he remained completely blind.

'The Patient's Guide to Consultation' didn't appear to provoke the negative reactions which were evident in Roter's (1977) study. Instead, general communication tended to be improved. Furthermore, patients didn't present with vast checklists of things to know and consultations did not take more time or effort. In fact, the consultations with experimental patients were more efficient since the improved communication was gained with no extra cost to the doctor.

The findings of the present study are entirely consistent with the information-processing model of consultation which predicts that by making information flow a priority doctor-patient communication can be improved. In the present study, the leaflet instructed patients to actively engage in information exchange within consultation; when they did this the information flow was improved and the communication was better.

Clearly, there are limitations to the study. Firstly, the relatively small sample size limits generalizability and secondly, no information was collected on patient variables such as social class, education, age or medical condition. In hindsight, it would have been useful to look at the characteristics of 'good' communicators both within groups and overall. However, this doesn't seriously threaten the general conclusion that reading the leaflet did lead to clearer, more effective communication between patient and doctor.

Although the leaflet had very positive effects, it must be noted that not all the patients who read 'The Patient's Guide to Consultation' went on to communicate well. It is possible that they tried to 'tell' more things but perhaps their style of interacting limited the success. However, without an individual before and after measure of communication quality it is impossible to rule out the chance that even the 'poor' communication was improved.

Previous studies attempting to increase patient activation suggest the interventions affect a socioemotional component of the interaction through the conveyed message that the doctor is open to communication (Thompson et al, 1990; Greenfield et al, 1985; Tuckett et al, 1985). The present study suggests there is a also a cognitive element to improved communication in medical consultation and patients can be 'taught' to do it better. Argyle (1983) points out that all situations have rules about what may or may not be done in them and socially inadequate people are often ignorant or mistaken about the rules. The rules of consultation have never been made explicit to patients thus are open to problems of meaning and interpretation (Frankel, 1983). The patient quoted in the present study 'knows' that bringing a list into the consulting room is 'against the rules'. His knowledge is based on an interpretation of experience rather than explicit statement of this rule.

It appears that in the absence of explicit rules, patients build up a profile of 'proper' behaviour in consultation and often this involves deferring to the doctor and awaiting instruction or direction (Freidson, 1970; Mechanic, 1974; Maguire, 1984; ten Have, 1991). They may believe that the physician is denying them access to full expression and that belief forms part of their frame of reference (Frankel, 1983).

Patients need to be encouraged to state their reasons for attending, say what is troubling them and what they hope the doctor can do about it. They also need to be explicitly informed that it is acceptable to join in the discussion and tell the doctor what they want to know. This is what the leaflet set out to do and it is what information-exchange is all about. The emphasis is on mutual effort toward the common goal of effective information exchange. This concept is compatible with self help and autonomy but avoids the antagonistic element inherent to a focus on question asking.

The patient education leaflet tested in the present study may well have worked through setting out some of the rules of consultation. In the leaflet patients are told that they should organize their input and present it directly to the doctor. The doctor's need for information is formally stated and this extends beyond symptoms to items of interpretation and meaning. Lastly it is pointed out that the doctor can provide specific information if the requirement is made known.

The present study puts the concepts of the information-exchange theory into practice and shows quite clearly that patient education provides a viable means of improving doctor-patient communication.

# CHAPTER 9

# EVALUATION OF THE INFORMATION-PROCESSING MODEL BY PRACTITIONERS AND TEACHERS

## INTRODUCTION

The information-processing model of medical communication has been offered as something of a new paradigm to inform and guide the doctor-patient interaction. It grew out of an attempt to integrate much previous research, which itself is suggestive that a new approach is needed. The concepts of the model have been tested by the research contained in this thesis and the validity of the model has been supported. However, for the main part, the emphasis has been on the patient's point of view. This was a conscious decision, made at the outset, and represented an attempt to redress the balance of interaction research which has tended to focus on doctors and their actions. Patients are often seen as mere responders to the words and actions of their physicians, yet the research in this volume shows that patients have definite opinions and preferences regarding the medical care they receive.

There is no doubt that the information-processing model presents a concept of consultation which works well from the patients' point of view. However, experience has shown that most modern health care systems have been developed to work for the doctors (Freidson, 1970; Mechanic, 1974; Rawlings, 1975) and there is inherent resistance to initiatives that would require greater input in terms of time or skills not directly medical (Metcalfe, 1983; Korsch, 1989).

The information-processing model is intended to provide a guide to consultation which, if adopted, could make consultations more effective and more satisfying for doctor and patient, without requiring more time, more energy or greater emotional involvement. The patient education study reported in chapter eight provided evidence that applying the principles of the model resulted in improved consultation from the doctor's point of view. The use of the 'Patient's Guide to Consultation' was a relatively simple application of the model, designed to raise patient awareness of the part they can play in medical consultation. It was applied in isolation and neither doctor nor patients were aware that the leaflet was based on the model. Despite this, the results showed quite clearly that the doctor's rating of communication within the consultation was significantly higher for patients who had read the leaflet than for controls. The results suggested that the model, itself, will have value for doctors in their day to day practice and that a greater degree of patient education may also yield greater dividends.

One of the main themes of the information-processing model is that patients have an important and integral part to play in consultation. They must contribute to the work of the interaction and bear some responsibility for the process and outcomes. This doesn't imply any shift in power or control, rather it means that power and control have no place in the doctor-patient interaction which should operate as a mutual process of information exchange and decision making, in terms of the values, needs and aims of the two participants.

The benefits for doctors include a sharing of the responsibility for decision making and greater assurance that mutually appropriate decisions are reached. Also, there is the prospect of improved communication, as shown in chapter eight, and greater satisfaction for doctor and patient with individual consultations and with their relationship in general. However, the possibility remains that doctors may find the model unacceptable or even consider it unrepresentative of medical consultation. If this were the case, it would reduce the likelihood of widespread adoption and make the delivery of the proposed benefits more difficult to effect.

There appears to be a widely held belief among doctors that patients are too ignorant, too emotional and too incompetent to have an active role in consultation and that they lack the proper training and insight to be trusted to make choices which affect their own health care (Britten, 1991; Jaffe, 1969; Zola, 1981; Comaroff, 1975). On the other hand, western society is beginning to seriously question medical paternalism; the growth of litigation and media exposure of abuses of power have contributed to the growing tide of criticism. Doctors can no longer afford to dictate the terms of care to their patients and must take their patients' views into account (Katon & Kleinman, 1981) but do they realize it?

The aim of the present study is to explore the responses of doctors to the information-processing model in terms of its utility, benefits, disadvantages and credibility. The objective is, primarily, to gain insight to the way the model is viewed by both teachers of medical practice and practitioners themselves. It is, essentially, a descriptive exercise, designed to capture opinions from the other side, so to speak. The intention is neither to canvas a representative sample of doctors and teachers, nor to generate definitive statements about the value of the model; rather, it is hoped a selection of views from those engaged in the field of doctor-patient communication will provide a practical evaluation of the academic theory. It is anticipated that the doctors' responses will provide useful additional knowledge about how the concepts of the model are interpreted by them, in terms of practice and teaching. This will extend the findings from the experimental studies and provide a broader view of the model's viability and its potential use as a teaching aid for basic medical education.

METHOD

Subjects: The model was presented to 20 doctors; 10 of them GP Trainers, contacted through the York District Post-Graduate Office, and 10 of them GP principals who had taken part in the consultation study of chapter four. Neither of these groups is representative of the general population of doctors in practice. Rather, they were chosen because they were expected to have an interest in improving consultation, aiding education and in making doctor-patient communication more effective. No personal or demographic information was collected from the subjects as the groups were not large enough to allow any analysis on the basis of subject characteristics. However, the respondent group is predominantly male.

Materials: Each doctor was provided with a diagram of the model and a detailed explanation of the nature and meaning of the model. This was based on the material presented in chapter one and outlined the basis and application of the model. The evaluation guide is included in appendix G. It is a semi-structured instrument, intended to explore views on how well the model fits as a definition of consultation, how it might work in practice and what benefits or disadvantages can be construed. The evaluation instrument also asks about patient contributions in terms of the model and the concluding page seeks comments on any aspect of the model. This is to provide an opportunity to record thoughts and opinions other than those specifically asked for.

Procedure: The written paper was submitted to all doctor respondents together with the pictorial representation and the evaluation guide. Follow-up phone calls were made to ensure the material had been received and answer any questions arising. All respondents were provided with a stamped envelope already addressed to the researcher to facilitate the return of the evaluation guides. Results were analysed from the available responses at one month from despatch.

RESULTS

The response from the doctors was pretty reasonable considering they had been approached 'cold' with the study mailed to them in order to participate. Ten of the doctors completed the evaluation, making a response rate of 50%. This is perhaps more than some would expect judging by the comment made by one of the respondents: "Most GPs are too busy to read and answer the paper"; and suggests there is real interest among some in the profession to seriously think about consultation skills. As most of the responses were returned anonymously, it is impossible to report the exact proportions of trainers and principals. However, from the comments, and in some cases the names given, it was clear that at least four respondents were trainers and four were principals.

The results are reported in sections relating to the evaluation guide questions, with the numeric results first, followed by a selection of comments. It should be noted that not all respondents made comments at every point and some made very few comments over all.

*Does the model fit conceptually as a definition of consultation?*

YES - 10 NO - 0 DON'T KNOW - 0

This unanimous affirmation by the doctors suggests that the model achieves what it sets out to do. It provides an adequate conceptual definition of consultation that is acceptable to practitioners and teachers. Obviously, it is not a perfect model, but it does represent a good working definition upon which to base further research and educational initiatives.

R2 It fits conceptually because it allows for pre consultation and post consultation behaviour and an appreciation of their influence on the consultation.

R4 Yes, in broad outline. But - acknowledgment of problem is the primary step - i.e. if working to different agendas then further information exchange etc. is unlikely to lead to a satisfactory outcome.

R7 It acknowledges the <u>dual</u> responsibility for input and processing of information.

It also allows for expression of outcomes at several different levels, depending on what each party is expecting of the consultation.

*Does it draw together different areas of skill and knowledge?*

YES - 10 NO - 0 DON'T KNOW - 0

All respondents seemed to recognise the integrative nature of the model. This suggests that it has succeeded as a means of bringing together many aspects of consultation skill and knowledge which are covered in a piecemeal fashion within the existing literature.

R1 It covers many possible approaches.

R4 Yes - I like the visual concept of input from both patient and doctor.

R6 If it encourages patients to share their knowledge it helps the doctor to adjust his content and presentation of information appropriately.

R8 It involves skills of communication (speaking and listening), interpersonal relationships, diagnosis and management.

*Is the model applicable/workable?*

YES - 7 NO - 2 DON'T KNOW - 1

Opinions were divided on this point with most of the doctors feeling that it could indeed work in practice while others had some reservations especially regarding applications requiring change, time or patient involvement.

R1 Yes - In studying, describing and classifying consultation.

R2 Don't know - Because most doctors develop their own style and stick to it - see Byrne & Long.

R5 No, because of lack of time - Patients can't always start to understand all that is involved. Many just can't "conceptualise" and formulate their ideas like this.

R7 Yes - It can be applied in personal reflection on working practice, particularly when trying to identify why communication is not effective and in teaching others (trainees, students etc).

R8 No - The model makes basic assumptions that communication skills and interpersonal skills are adequate/good in both doctor and patient. I do not think this is the case.

*Are there any practical benefits?*

YES - 9 NO - DON'T KNOW - 1

The majority of respondents perceived the model as being useful and having some practical benefits. These were expressed in terms of practice, teaching, analysis and technique.

R2 There may be practical benefits in using the model for teaching students and trainees about consultation.

R4 It would be useful in video analysis of consultations.

R6 The patient feels supported, respected and encouraged. The doctor feels satisfied, respected and encouraged.

R8 It would certainly help to be able to get the patients to be responsible in some degree for their health. The model may also persuade some doctors that the patients have some responsibility for their health.

R9 It gives thought to GPs' consultation technique.

R10 Yes - Because analysing the consultation is something that trainees find difficult and are wary of.

*Do you have any objections to the model?*

YES - 4 NO - 5 DON'T KNOW - 1

Half of the sample had no objections to the model at all and four of the respondents made comments at this point. The objections noted were not major violations of principle rather they tended to be points which the respondents felt the model had overlooked.

R1 It does not provide any answers for what to do if things go wrong. (Perhaps this is too much to ask).

R5 It doesn't fit for a patient with preconceived ideas which they are unwilling to change.

R7 I disagree with the statement that the medical information brought to the consultation by the doctor is largely scientific knowledge. The doctor brings to the consultation and has at his disposal, a great deal of social, environmental, and personal information about that patient picked up from previous consultations with him and his family, and awareness of what is going on in his community. This can be more important/relevant than the doctor's scientific knowledge input.

*Do you see any disadvantages in utilizing the model?*

YES - 4 NO - 4 DON'T KNOW - 2

Although some of the respondents made comments about possible disadvantages they weren't of the opinion that it would reduce the quality of the consultation, medical care or the doctor-patient relationship. One of the doctors raised the issue of time being a disadvantage but purely in the context of the N.H.S. In the context of better medical care and satisfaction, spending more time with patients was seen as advantageous to consultation.

R4 I'm unsure how it can be used outside of learning.

R5 I believe the consultation time would be enormously prolonged - hence it is impractical in the N.H.S.

R9 At times, if used, it could be for packaging the unpackagable.

*Do you think patients could contribute to more effective consultation in terms of this model?*

YES - 6 NO - 3 DON'T KNOW - 1

A few doctors were unable to see how patients could contribute to consultations and this was mostly put down to patients' lack of competence or skills for rational discussion. The majority, however, could see some potential for patient education and participation.

R1 This would be a matter of devising a 'health education' approach using the model.

R2 With the exception of a few middle class patients, the preconsultation analysis of self would be beyond them.

R5 Most are too anxious and self absorbed if they have a real problem. Old hands and 'heart-sinks' would have a field day and no real work would get done.

R6 Patients could contribute by giving more appropriate information and accepting the limits of medicine.

R7 I think it would be most helpful to medical practice, patient well being and health education, if patients were more aware of how they can contribute to the consultation. Too often, I feel, the blame for an unsatisfactory outcome is put on the doctor. It would be helpful if there were a wider awareness of the consequences of blocking information and being too preoccupied with their own problems. The model might help patients to prepare better for the consultation, get more out of it, and not put us on pedestals!

*Do you see the model as helpful in teaching trainees about interactions with patients?*

YES - 9 NO - 0 DON'T KNOW - 1

Most of the doctors felt that the educational aspects of the model were worthwhile and would enhance a program of explanation and teaching for consultation theory and skills. One was unsure about the prospects of teaching theory to practitioners while another thought the model might be just the right tool.

R1 Trainees are hands-on doctors as a rule. They are not very keen on new conceptual maps, especially complicated ones.

R2 Trainees are surprisingly difficult to enthuse about consultation analysis and this model, which is solidly based, might just 'spark' some of them.

R6 It encourages mutual respect and discourages the false idea that the doctor always has all the answers.

R7 It allows one a framework, a theoretical approach, to which one can bring practical examples of consultations, to analyse what is going on. This should lead to greater understanding of what makes a consultation effective or ineffective, for both parties, and provides an opportunity for change and improvement of working practice. All models have their limitations, but with an attitude of expecting it to be useful, I'm sure this model will be a success in educational settings.

R8 It brings together, I think, a lot of the existing theories and ideas of how to conduct a consultation.

R10 I use one or two of the references quoted to teach difficult ways of analysing the consultation. I will study using this one.

DISCUSSION

The results of the present study are interpreted as indicating a generally positive response to the information-processing model. Bearing in mind that the sample was neither large nor representative, and that, as respondent seven noted, all models have their limitations, it is still concluded that the information-model is acceptable from the point of view of both medical educators and medical practitioners and a number of practical applications exist.

The purpose in developing the information-processing model, as stated in chapter one, was to provide a rational view of medical consultation; one which incorporates previous findings and also provides a more theoretical understanding of the process of consultation. To the extent that all the respondents in the present study accepted the model as a conceptual definition of consultation, which drew together many different aspects of skill and knowledge, the purpose has been achieved. The comments raised by the doctors indicate that the model is not a complete definition and, like all theoretical models, has its limitations; but the encouraging conclusion from the present study is that the model stands up to real scrutiny by people working in the field.

The nature of some of the comments suggested that some points of the model might have benefited from a more detailed explanation; especially the recursive nature of the structural framework as it allows for the process components to be utilised in any order and as many times as required. For example, it was noted by one respondent that acknowledgement of the problem should be a primary step of consultation but that the model shows it as secondary. In fact, the model shows acknowledgement of the problem as a processing 'sub-routine' which may or may not be entered from the information exchange structure and which returns the process to further information exchange. This route can be taken as many times as is necessary to achieve full acknowledgment of all problems relevant to the consultation or consultations.

This concept of multiple consultations is worth elaborating because the model is like a snapshot of the medical care process. It is assumed that the cycle of medical care is an ongoing phenomenon in which a number consultations occur over time. For people with numerous or difficult problems, consultations may occur quite frequently, and some of the processes depicted in the model may be spread over a number of sessions. The information exchange may take some time to complete and since it is a dynamic entity, the content may also change over time. The important point is to make information exchange a priority action and to keep the channels open, rather than to aim for complete and comprehensive information exchange at a single point in time.

It seems that one of the points of information that the doctor may often need to convey is the limitation of time. He or she can use this as a statement of fact and can help the patient to set up targets for information exchange to occur over several sessions. If doctors are pressured for time, it is preferable to be open about it, deal with the items that can be accommodated immediately and to schedule further appointments to complete the process. This has to be a more rational approach than that alluded to by respondent five, where patients must be subtly discouraged from rattling on when there is 'real work' to be done.

From the comments offered by a number of respondents it is clear that several of the doctors would like to spend more time with their patients but feel that the 'system' doesn't allow it. An earlier study of how doctors spend their time in general practice showed a maladaptive rigidity to a self-imposed timetable; some practitioners spent on average only two minutes per patient in the consulting room (Eimerl & Pearson, 1966). It was noted that the observed rigidity had hardly changed in 50 years and that doctors might do better for their patients and themselves if they arranged appointments over a much longer part of the working day.

Pendleton, Schofield, Tate and Havelock (1984) also point out the need for a more appropriate allocation of time for consultations in the surgery and other activities. They suggest that if enough time is taken in one consultation to define, manage and explain a patient's problems fully, the patient may not need to return a second time. In this case, the time invested in dealing fully with the patient at the outset will be repaid by a reduction in repeat visits and, possibly, better management by getting it right first time. On the other hand, it cannot be denied that very long visits can be disruptive to appointment schedules if they haven't been anticipated and built into the system. For this reason, it may be necessary to arrange a follow up visit, but if the information exchange has been established, the time between consultations can be used to organise thoughts or to observe the effects of interim therapy.

It was interesting, in the light of the generally acknowledged time pressure imposed on doctors, that one respondent took exception to the notion of patients attending because doctors have specialist knowledge. He suggests, alternatively, that people may also attend in response to pressure from other people (with no suggestion as to why they may be applying this pressure towards consulting the doctor), because the doctor is available or because the doctor is free. The information-processing model does, of course, acknowledge that 'other people' do play a role in the decision to consult (see figure 1.1) but the suggestion that people go to the doctor simply because he is there does not fit the evidence from the voluminous literature on delay in seeking medical aid. As Zola (1983) notes, the statistical norm for any population is to delay (perhaps indefinitely) and many types of disease and disorder remain untreated.

Similarly, in response to respondent seven whose sole objection to the model stems from the statement that the doctor's informational input is mainly scientific knowledge, it is argued that this is what the doctor offers in terms of information exchange. The knowledge of the patient and his circumstances is mainly built up by the doctor as a function of information exchange. Admittedly, it should be taken into account in decision making, but it is not helpful for the patient to be offered back information derived from his or her own self. It is unlikely to be helpful in terms of increasing health knowledge or understanding, while the sharing of the doctor's medical knowledge can be a profitable response.

The sharing of knowledge allows patient enlightenment on matters of health and provides access for meaningful involvement. It is recognised that not all patients in every circumstance will want to, or be able to, participate in medical decision making. There will be some who are unconscious or otherwise too ill; in emergencies doctors will have to make fast and often independent decisions. Other patients will lack the ability to understand, and some will simply prefer to rely on the doctor. However, as Kassirer (1983) notes, the patient should always be given the benefit of the doubt:

> "The physician initially should assume that the patient is capable of becoming a full partner in the decision-making process and encourage active participation. This means the patient will have to assume more responsibility for the outcomes of medical decisions and the physician will have to relinquish some." (Kassirer, 1983; p900)

A further reason for engaging in detailed explanations of all the relevant issues to facilitate patient knowledge and decision-making is the concomitant reduction in legal liability for bad outcomes. As Justice Cardazo notes, every adult of sound mind has a right to determine what shall be done with his or her own body (Teff, 1992).

The issue of what constitutes truly informed consent has been vigorously debated among legal, medical and patient groups, and a recent Japanese study reported that more than 10% of the malpractice suits in that country allege breach of duty to obtain truly informed consent. A legal precedent for the upholding of patient rights to self determination is acknowledged by Teff (1992) who quotes Lord Scarman's ruling in the case of Sidaway versus Bethlem Royal Hospital:

> "If it be recognised that a doctor's duty of care extends not only to the health and well-being of his patient but also to a proper respect for his patient's rights, the duty to warn can be seen to be part of the doctor's duty of care." (Teff, 1992; p5).

As Slack (1977) points out, physicians need to let go of the idea that they are responsible for controlling their patients and develop skills in presenting possible plans of action to patients who want to make informed decisions on the basis of their own values. He suggests that rather than offering a crash course in pathophysiology doctors will need to focus on discussing the benefits, inconveniences, embarrassment, pain, incapacitations and likelihood of death that accompany the available options as well as the uncertainties and financial costs. Well informed patients will be responsible for the consequences of their decisions and more realistic in their clinical expectations. Furthermore, if the well-informed patient decides against an investigation or treatment neither the patient or the doctor has failed; the patient is merely exercising freedom of choice - after all, it is his pain, his body, his right to decide.

The notion of patient responsibility for health, as outlined in the information-processing model, was seen as a positive point by several of the doctor respondents. It was noted as a benefit to doctors, from shedding some of the burden of responsibility, and also in terms of the education value of the model in teaching this approach to both doctors and patients. As respondent two pointed out, doctors tend to get set in their ways and the information-processing model can be useful in learning, relearning or simply in refreshing consultation technique. Respondent seven noted the need for working doctors to take time to reflect on what they are trying to achieve and to work more effectively. The information-processing model provides a convenient summary and update of modern consultation practice that challenges patients and practitioners to really think about the process in which they are mutually engaged.

Respondent eight points out that for the model to work properly both doctor and patient need to have adequate communication skills. He doesn't believe that this is presently the case and, certainly, the results of chapter seven suggest that doctors are not being adequately prepared in this respect. However, the model does not assume that communication skills exist, rather it points to the vital need for them in establishing a viable clinical relationship between doctor and patient. The model serves to highlight just how necessary these interpersonal skills are; as an education tool it is hoped that the model will show the relevance of mastering these skills to medical students and prompt them to take more care to learn and develop them properly.

Clearly, the educational aspects of the model are its greatest strength and this was noted by nearly all of the respondents in the present study. As expected, educational benefits derive from the comprehensive nature of the model, its integrative structure and its ability to represent the dynamic process of consultation. As Levenstein, McCracken, McWhinney, Stewart and Brown (1986) point out, part of the physician's job is to receive and respond to cues offered by the patient. This results in the need for a more flexible process of consultation than would be required by the disease-centred traditional method. The information-processing model allows for a flexible route to be taken through the process of consultation, moving from subprocess to subprocess as the information exchange directs. An example of the process moving from information exchange to diagnostic option and back to information exchange over several moves is given by respondent ten.

> "It is recognised that in consultation GPs actually make presumptive diagnoses and re-asses continually as the consultation progresses - e.g. a man with a limp:
> I see him walk in and presumptive diagnosis is osteoarthritis; hip.
> He explains he has pain in his foot - presumptive diagnosis is osteoarthritis; ankle.
> He shows me his foot and I notice a rash - presumptive diagnosis is cellulitis of skin.
> Then he says where pain is very severe - actual diagnosis is shingles."

The information-processing model has real value for educating doctors and patients because it can represent what actually happens in consultation and show where and how changes need to be made. The positive response from the sample of doctors and teachers who evaluated the model for this study allows an increase of confidence in the model and suggests it will be useful in guiding future research and teaching.

# CHAPTER 10

## CONCLUSIONS

Throughout this thesis the role of information in medical consultation has been explored and tested. It has been consistently argued that mutual information exchange is the basis of good clinical practice and, as such, should be the primary focus of the doctor-patient encounter.

At the outset of the project a great deal of existing literature was consulted and from this review it was concluded that the most prominent features were fragmentation and diversity. It appeared that despite the enormous amount of work undertaken and the numerous 'prescriptions' for change, very little had been achieved in terms of real orientation away from medical paternalism. One of the main barriers to change was the lack of coherence and integration among and between the studies; information provided the key to creating a more unified view.

The information-processing model of medical consultation was developed to provide a rational framework within which to integrate research findings and by which to guide the teaching of consultation skills. This was a theoretical initiative which incorporated existing knowledge and extended the concepts of patient participation and influence. It is conceptually simple and yet profoundly complex; it can be applied with an increasingly deeper interpretation as patients and practitioners take on board the notions of explicit input and exchange.

Chapter three presented a community field study which explored what people require of their doctors in terms of information exchange and examined the shortcomings which they perceive. The results suggested that information exchange is central to consultation from the patients' point of view and that patients require the opportunity to both give information to the doctor and to receive relevant information in return. It was shown that using a set of information-exchange behaviours provided an effective means of discriminating between patient reports of good and bad experiences of medical consultation. These findings have important implications for social skills training, effectively answering the long standing question of what skills to teach. The behaviours required to appropriately give and receive information can be readily taught as part of basic medical education, regardless of the existing personality traits of the individuals themselves. An important barrier to the acceptance of the social skills approach is, therefore, removed and insight to development of the social skills model is gained.

The information-processing view of consultation is, in fact, a very 'common sense' approach which recognises and accommodates the complexities of the doctor-patient interaction. It affirms the many facets of reality that exist and requires that these be explicitly acknowledged and incorporated in medical decision making. For example, non-English speakers will have problems with communication regardless of the model of interaction which guides the doctor. The information-processing model would hold that the non-Englishness of the patient is an explicit piece of information which must be incorporated in the exchange and assumptions based on the English-speaking majority of patients would, therefore, not hold. It would become even more important for the doctor to explore the patient's reasons for coming and the beliefs that he or she might have about causation, symptoms and treatment.

This could involve a third party in the consultation in order to translate or explain; again the information-processing model does not assume that the interaction is merely one-to-one. Where the third party is a family member, the information exchange could be enhanced as extra knowledge of the patient is added in to the process. In some cases it could provide valuable insight to the patient's familial context and the relationships within it.

The information-processing model also offers a degree of flexibility, in that it allows for both omission and repetition of actions. The input-process-outcome sequence is part of an ongoing cycle of care and it is implicitly assumed that the experiences of each consultation feed back into the next occurrence modifying or consolidating attitudes, beliefs and expectations. Thus, although diagnosis and treatment options are included as components of consultation, the system readily incorporates visits where the information exchange is inconclusive or incomplete and will be carried over to the next visit. The important principle of the model though, is that the inconclusiveness or incompleteness is explicitly acknowledged. The doctor will explain what he knows and what he doesn't know, also what the facts are, how they are selected and how they are interpreted.

The complexity of the information-processing model, with multiple input variables which extend beyond the mere recitation of symptoms, is a deliberate attempt to rectify the tendency toward over-simplification that has arisen from cause and effect determinism. It acknowledges multiple causes and effects and the different presentation of illness in different individuals. The model explicitly incorporates the influence of interpretation and frame of reference. It attempts to overcome the rigidity of traditional medical science and its desire for certainty that have prevented many doctors from adapting to the demands for a more flexible consultation milieu.

The 'promise' of traditional medicine is control through knowledge of cause and effect, and for the most part of this century it has been extremely effective (Cassel, 1986). Medical science has determined the cause and eliminated the effect for disorders as wide ranging as diphtheria, polio small pox, haemophilia, diabetes and rubella. Unfortunately, many people now present to the doctor with chronic degenerative diseases, stress related disorders and problems with multiple and indeterminate causes such as heart disease and cancer.

Subjective judgement now plays a more important part in consultation as doctors assess the patient's condition and determine appropriate treatment. Specific conditions often require specific management but frequently the certainty of diagnosis is lacking. In these situations the doctor needs information about the patient, his lifestyle, personality and history, as well as statistical indices of diagnostic probability. In determining treatment, there will be times when the patient and family may be more effective judges of the preferred choice of action. However, they will still need to be informed and guided by the doctor in making a final judgement. In other cases multiple judgements may be required as a condition develops or deteriorates and, once again, admitting the patient to the decision-making process will be preferable to the imposition of a purely medical solution.

In the past, doctors have tended to present themselves as all knowing and in control. Indeed, this is how they were trained to be; but it is not an approach suitable for modern consultations. The survey of medical schools in chapter seven showed just how firmly medical paternalism is lodged in the psyche of the medical profession. There is an inertia to overcome in order to produce a change and a new model which accentuates mutual responsibility, effective information exchange and informed decision making must be explicitly applied throughout the system.

Medical consultation can no longer be driven solely according to the doctors' scientific principles but needs to admit the influence of the patient and allow open discussion. The patient education intervention tested in chapter eight showed quite clearly that encouraging patient input improved the consultation for the doctor rather than making it more difficult. Making effective information exchange a specific objective of the consultation had discernible benefits and this was predicted by the information-processing model.

The issue is not one of patient control versus doctor control, rather, the information-processing model is an outline for co-determination. Patient participation should not be granted as a beneficent gesture nor should it occur as a grudging response to pressure from society. Instead, it should be embraced by doctors as a means of extending their scientific method of observation and action. Patients are observers too and they have a stake in and, to some extent, influence outcomes (Burstajn, Feinbloom, Hamm & Brodsky, 1990). They do not observe or influence in the same way as doctors but a different perspective is not an invalid one; doctors can use the extra information as part of the consultation data. Potential benefits include the chance for patients and their families to take part in the decision making thus their values and feelings will be taken into account. The doctor can share the responsibility and decision making and be more sure that the choices reflect the patient's best interests. It also affords greater flexibility in admitting the prospects of new strategies, consideration of a wider range of options plus the possibility of individual treatment regimes.

Within consultation, the range and variety of information that can be exchanged extends to values, feelings, subjective views, interpretations, probability estimates, needs, desires, anticipations and individual perspectives. The sharing of perspectives or realities enables the doctor and patient to engage in common action. The doctor no longer has the role of sole processor but becomes a co-processor. The patient can take some responsibility for choices, be aware of consequences and be prepared for possible outcomes. With experience patients may learn to have more appropriate expectations, make better decisions and have a greater feeling of control (Slack, 1977). In this way they will be an active participant in their own health care rather than a passive recipient of medical service and thereby suffer less stress from the inherent uncertainty of illness (Cassel, 1986). The doctor who does not share information is in effect forcing the patient's trust. The doctor who engages in honest discussion deserves the patient's trust. Blind trust can be quickly eroded and turn to anger and mistrust when things turn out worse than hoped for (Blumgart, 1969).

This allusion to honesty should not be taken to mean that the doctor tells all. Information exchange has to be sensitive to need and the doctor must listen carefully to the message from the patient. If the patient is saying "I don't want to know" or "I'm not ready for this" the doctor has to heed that message and structure his role accordingly. His ultimate aim must be to develop the relationship so that the patient can be made ready. An alternative to fostering hope and encouraging denial is to acknowledge uncertainty and be ready to listen and learn in order to help the patient to cope with it. The doctor can be honest to the extent that the patient is ready and still help him or her to deal with the problem at hand. Uncertainty should not be used to justify vagueness and lack of awareness should not lead to imposition of medical solutions.

Uncertainty is sometimes used by doctors to avoid facing unpleasant and emotional encounters (Davis, 1972). There is a strong desire among doctors to keep control of their own feelings and they often encourage suppression of their patients' feelings as well. The information-processing model suggests that doctors should instead, be listening to their patients, accepting their input and trying to understand their feelings, without needing to give false reassurance. A realistic assessment of problems and options has to be better than false expectations of certain treatment or a definite cure. The doctor needs to articulate the medical view but he should also state what biases underpin that view and what his personal standpoint is; both doctor and patient need to discuss values and perspectives in order to think critically about facts, choices and consequences (Burstajn et al., 1990). This is especially important in cases of serious or terminal illness where the ultimate choice may be death with dignity or prolongation of an already non-viable life.

In many cases, particularly where the problem is not life-threatening, explicit information exchange would lead to open conflict. However, it is reasoned that open argument, conducted in a rational manner, has to be more healthy than suppressed anger, resentment and hostility hidden beneath a cloak of empty civility. Even the most recalcitrant patient may be persuaded to try and see the doctor's point of view, if the doctor reciprocates by trying to understand the patient's perspective as well. Once the issues are out in the open they can be addressed and it is to be hoped that doctors and patients can find ways of working together and accepting that they disagree. Where differences are unable to be resolved then new partnerships will need to be formed.

That the groups have differing perspectives of consultation is clear from the results of the comparison of views reported in chapters five and six. Patients' and doctors' perceptions and beliefs were found to differ in terms of the importance of tasks within consultation, the performance of those tasks, the outcomes that resulted and the satisfaction obtained. They both enter and leave consultation with differing views of themselves and the other; their concepts of the consultation process hardly ever coincide. The objective should not, however, be for one party to emerge dominant, having converted the other to a similar value orientation, rather, they should work as allies to deal with the problems important to patients without violating their own principles. The goal is to acknowledge and accept conflict but to focus on cooperation.

Much of the conflict which occurs in the medical context arises from the doctors' steadfast adherence to mechanistic science. Their paradigm requires that they remain objective and try to work in a value free environment but in practice this can never be achieved. Objectivity is a misconception which holds that whatever is subjective is inherently personal and irrational (Burstajn et al., 1990). This makes it difficult for many doctors to take patient input seriously or to admit the patient as a partner in consultation. In contrast, the information-processing model holds that the subjective view, by being articulated and rationally explored, can become incorporated in the knowledge base of the interaction and accounted for in the scientific enterprise.

The patient is owed a realistic assessment of problems and options even if they could derive temporary comfort from false expectations of certain treatment. Offering certainty may accentuate professional competence but the recognition of individual rights and patient autonomy is a more effective long term strategy. Chapter four of this thesis showed, quite plainly, that patients tolerate poor information exchange only up to a point and that the widespread failure of doctors to inform and be informed leads to poor outcomes and low levels of satisfaction. Doctors themselves can fall into the certainty trap as well, often as a result of inadequate information gathering. One of the doctors contributing to the data in chapter six noted that he feels intensely frustrated when he treats people and they don't get better! The inference of the statement is that the patients are in some way defying his professional certainty. The alternative explanation - that he judged it incorrectly - didn't seem to occur to him.

The information-processing model probably will not be fully appreciated by doctors or patients until the ritual aspects of medical care are replaced by a more sophisticated societal health understanding. When this happens, medical consultation will be expressed in explicit terms rather than affective notions and the process will be guided by a science of informed participation. The essence of medical paternalism has been to oppress patient autonomy in the name of patient welfare (Teff, 1992); however, it cannot be denied that it is the patient's pain and the patient's body that are involved, not the doctor's. Thus, the patient has a right to information and knowledge about his or her condition, treatment and prospects for recovery. Barriers to the delivery of these rights are pervasive and entrenched, stemming from the Hippocratic admonition to conceal most things from patients lest they take a turn for the worse. Other impediments were suggested by doctors in their evaluation of the information-processing model reported in chapter nine: Sometimes the doctor is too tired or too busy; doctors must work within strict time constraints; and doctors do not see patients as having anything useful to contribute.

It is, of course, all too easy to blame the patient and to class them as incompetent or obstructive. One respondent in the evaluation study of chapter nine wrote -

> "Most [patients] are too anxious and self absorbed if they have a real problem. Old hands and 'heart-sinks' would have a field day and no real work would get done."

The underlying belief is that doctors have all the knowledge and skill: therefore they should make all the decisions. In reality, what they have is medical knowledge and skill; they don't necessarily know what is best for the patient, for that they must truly know the patient.

The information-processing model does not provide all the answers. It is a theoretical ideal - something on which to base medical practice and to aspire to. It implicitly acknowledges that patients will differ in their ability to understand, to reason and to elucidate their own perspectives. The mastery of language will differ among patients and for some, English will be difficult to use. There is no doubt that cultural perspectives can be hard to express or explain, even using a common language. Furthermore, some people will be more open to communication while others will require more certainty and reassurance. Some will be committed to the concept of abandonment to the doctor's care while others will demand their 'rights' of self-determination. What the information-processing model offers is a new definition of consultation which breaks the mould of the rigid, hierarchical relationship between doctor and patient and replaces it with diffused responsibility and increased flexibility in the doctor and patient roles.

This thesis presents the case for a more flexible, responsive relationship between doctor and patient with notions like compliance and consent being replaced by cooperation and conscious choice; the result of consideration of options within the context of shared experience, shared expectations and shared cognitions. Future research will be most profitably directed to the areas of social education and social skills training. Patients must be taught and encouraged to take responsibility for their own health; sharing the responsibility for medical consultation could be seen as a natural extension of the current philosophy of health education.

The research reported in this thesis not only supports the information-processing model but identifies behaviours which contribute to information exchange and, thereby, to good communication. There is great potential for development of social skills programmes based on the model and its associated research, with the opportunity for ever greater refinement of skills. In addition, the barriers to more effective consultation which have been identified can now become the focus of research to establish how they can be overcome. The effects of direct communication need to be investigated further and doctors and patients need to take a chance and say what they really mean.

The information-processing model has direct application as a teaching aid for use in basic medical education. It provides a useful overview of consultation practice and allows integration of the many existing approaches. It clearly outlines what the consultation process is about and what it should achieve. It is my sincere hope that it may be adopted for use in this context.

# APPENDIX A

STATISTICAL ANALYSIS FOR THE COMPARISON OF RECALL OF BAD EXPERIENCES FOR THE FAIL AND NO-FAIL GROUPS - CHI-SQUARE AND WILK'S LAMBDA

```
CROSSTABS BADO BY FAILSUM
/OPTIONS=3 4 5
/STATISTICS=1 2 3 4 5 11.
```

***** Given WORKSPACE allows for 5310 Cells with
2 Dimensions for CROSSTAB problem *****

Page 36 SPSS/PC+ 3/21/91

Crosstabulation: BADO
By FAILSUM

| FAILSUM-> BADO | Count / Row Pct / Col Pct / Tot Pct | .00 | 1.00 | Row Total |
|---|---|---|---|---|
| NO BAD EXP | 0 | 21<br>41.2<br>84.0<br>21.6 | 30<br>58.8<br>41.7<br>30.9 | 51<br>52.6 |
| BAD EXP | 1 | 4<br>8.7<br>16.0<br>4.1 | 42<br>91.3<br>58.3<br>43.3 | 46<br>47.4 |
| | Column Total | 25<br>25.8 | 72<br>74.2 | 97<br>100.0 |

Page 37 SPSS/PC+ 3/21/91

| Chi-Square | D.F. | Significance | Min E.F. | Cells with E.F.< 5 |
|---|---|---|---|---|
| 11.69389 | 1 | .0006 | 11.856 | None |
| 13.33771 | 1 | .0003 | ( Before Yates Correction ) | |

| Statistic | Symmetric | With BADO Dependent | With FAILSUM Dependent |
|---|---|---|---|
| Lambda | .16901 | .26087 | .00000 |
| Uncertainty Coefficient | .11780 | .10748 | .13030 |

| Statistic | Value | Significance |
|---|---|---|
| Phi | .37081 | |
| Contingency Coefficient | .34768 | |
| Pearson's R | .37081 | .0001 |

Number of Missing Observations = 3

STATISTICAL ANALYSIS FOR FAILURES BY EXPERIENCE - MEANS, ANOVA, TUKEY'S

```
15-Apr-91 SPSS-X RELEASE 3.1 FOR VAX/VMS                                Page   2
12:55:18  University of York VAXcluster  on VAXA::              VMS V5.4

       D E S C R I P T I O N   O F   S U B P O P U L A T I O N S

Criterion Variable    TOTFAIL
    Broken Down by    GROUP

Variable        Value  Label                          Mean     Std Dev     Cases

For Entire Population                                5.2268    4.1092        97

GROUP               1  BAD ONLY                      7.4000    3.5214        15
GROUP               2  BAD & GOOD                    6.3226    3.4194        31
GROUP               3  NO BAD OR GOOD                5.0000    4.4222        19
GROUP               4  GOOD ONLY                     3.2813    4.0738        32

  Total Cases = 100
Missing Cases = 3 or    3.0 Pct
```

```
15-Apr-91 SPSS-X RELEASE 3.1 FOR VAX/VMS                                Page   3
12:55:18  University of York VAXcluster  on VAXA::              VMS V5.4

               A N A L Y S I S   O F   V A R I A N C E

Criterion Variable    TOTFAIL
    Broken Down by    GROUP

     Value  Label                  Mean    Std Dev  Sum of Sq     Cases

         1  BAD ONLY             7.4000     3.5214   173.6000        15
         2  BAD & GOOD           6.3226     3.4194   350.7742        31
         3  NO BAD OR GOOD       5.0000     4.4222   352.0000        19
         4  GOOD ONLY            3.2813     4.0738   514.4688        32
                              -----------------------------------------
Within Groups Total              5.2268     3.8672  1390.8429        97


                           Sum of                  Mean
Source                     Squares      D.F.       Square        F       Sig.

Between Groups            230.1674        3.      76.7225     5.1301    .0025

Within Groups            1390.8429       93       14.9553
```

```
15-Apr-91 SPSS-X RELEASE 3.1 FOR VAX/VMS                                  Page
12:55:18  University of York VAXcluster  on VAXA::             VMS V5.4

Preceding task required .47 seconds CPU time;   3.87 seconds elapsed.

     7  ONEWAY TOTFAIL BY GROUP(1,4) /RANGES=TUKEY
     8

ONEWAY problem requires 448 bytes of memory.

There are 1,355,360 bytes of memory available.


15-Apr-91 SPSS-X RELEASE 3.1 FOR VAX/VMS                                  Page
12:55:20  University of York VAXcluster  on VAXA::             VMS V5.4

- - - - - - -   - - - - - - - - - - O N E W A Y - - - - - - - - - - - - - - - -


      Variable  TOTFAIL
   By Variable  GROUP
                                    ANALYSIS OF VARIANCE


                                       SUM OF        MEAN             F       F
        SOURCE                D.F.     SQUARES      SQUARES         RATIO   PROB.

BETWEEN GROUPS                  3     230.1674      76.7225        5.1301   .0025
WITHIN GROUPS                  93    1390.8429      14.9553
TOTAL                          96    1621.0103
```

```
15-Apr-91 SPSS-X RELEASE 3.1 FOR VAX/VMS                                  Page  (
12:55:20  University of York VAXcluster  on VAXA::               VMS V5.4

- - - - - - -  - - - - - - - - - - - O N E W A Y - - - - - - - - - - - - - - - - -


      Variable  TOTFAIL
   By Variable  GROUP

MULTIPLE RANGE TEST


TUKEY-HSD PROCEDURE
RANGES FOR THE 0.050 LEVEL -

          3.70    3.70    3.70
THE RANGES ABOVE ARE TABLE RANGES.
THE VALUE ACTUALLY COMPARED WITH MEAN(J)-MEAN(I) IS..
        2.7345 * RANGE * DSQRT(1/N(I) + 1/N(J))
   (*) DENOTES PAIRS OF GROUPS SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL


                           G G G G
                           r r r r
                           p p p p

     Mean      Group       4 3 2 1

     3.2813    Grp 4
     5.0000    Grp 3
     6.3226    Grp 2       *
     7.4000    Grp 1       *


15-Apr-91 SPSS-X RELEASE 3.1 FOR VAX/VMS                                  Page  7
12:55:21  University of York VAXcluster  on VAXA::               VMS V5.4


Preceding task required .23 seconds CPU time;  2.31 seconds elapsed.

   9

          8 command lines read.
          0 errors detected.
          0 warnings issued.
          1 seconds CPU time.
         12 seconds elapsed time.
      End of job.
```

# STATISTICAL ANALYSIS OF GROUP MEMBERSHIP FOR EXPERIENCE

## CHI-SQUARE

```
:6-Apr-91   SPSS-X RELEASE 3.1 FOR VAX/VMS
l1:10:38    University of York VAXcluster  on VAXB::          VMS V5.4

/AX 8550             University of York VAXcluster    License Number 61855
fhis software is functional through April 30, 1991.

fry the new SPSS-X Release 3.0 and 3.1 features:

k Interactive SPSS-X command execution          * The new RANK procedure
k Online,VMS-like Help                          * Improvements in:
k Nonlinear Regression                          *   REPORT and TABLES
k Time Series and Forecasting (TRENDS)          *   Simplified Syntax
k Macro Facility                                *   Matrix I/O

See SPSS-X User's Guide, Third Edition, for more information on these features.

   1  0  GET FILE=DAT3DEF

File DISK$PSYC:[LGF1]DAT3DEF.SPSSXSAV;
   Created:  15-APR-91 11:24:54 - 119 variables

   2  0  SET WIDTH = 80
   3  RECODE GROUP (2=3) (3=2)
   4  VALUE LABELS GROUP 1 'BAD ONLY'  2 'BAD & GOOD'  3 'NO BAD OR GOOD'
   5   4 'GOOD ONLY'
   6  NPAR TESTS CHISQUARE=GROUP

There are 1,362,656 bytes of memory available.

***** Workspace allows for 63871 cases for NPAR tests *****


16-Apr-91 SPSS-X RELEASE 3.1 FOR VAX/VMS                         Page   2
11:10:44  University of York VAXcluster  on VAXB::          VMS V5.4

- - - - - Chi-Square Test

     GROUP

                                         Cases
                              Category  Observed  Expected  Residual

     BAD ONLY                       1        16     25.00     -9.00
     BAD & GOOD                     2        32     25.00      7.00
     NO BAD OR GOOD                 3        20     25.00     -5.00
     GOOD ONLY                      4        32     25.00      7.00
                                            ---
                                Total       100

         Chi-Square            D.F.          Significance
            8.160               3               .043
```

## POOLED-WITHIN-GROUPS CORRELATION MATRIX FOR ITEMS RELATING TO GOOD AND BAD EXPERIENCE OF CONSULTATION

Pooled Within-Groups Correlation Matrix (For Items Relating To Good And Bad Experience of Consultation.)

| | SCORE1 | SCORE2 | SCORE3 | SCORE4 | SCORE5 | SCORE6 | SCORE7 |
|---|---|---|---|---|---|---|---|
| SCORE1 | 1.00000 | | | | | | |
| SCORE2 | .20787 | 1.00000 | | | | | |
| SCORE3 | -.19880 | .31853 | 1.00000 | | | | |
| SCORE4 | .20787 | .38636 | .14652 | 1.00000 | | | |
| SCORE5 | .20787 | .38636 | -.02548 | .53977 | 1.00000 | | |
| SCORE6 | -.11184 | -.20787 | -.17138 | .45243 | .28736 | 1.00000 | |
| SCORE7 | -.03296 | .07658 | .08586 | -.06126 | .21442 | -.11536 | 1.00000 |
| SCORE8 | -.40519 | .24927 | .33300 | -.03712 | .24927 | -.21116 | .50513 |
| SCORE9 | -.22361 | .02734 | .08584 | .02734 | .02734 | .06473 | .33412 |
| SCORE10 | -.22361 | .02734 | .08584 | -.12031 | -.12031 | -.09415 | .20146 |
| SCORE11 | -.08417 | .14527 | .05012 | .14527 | .29613 | .08417 | .19579 |
| SCORE12 | -.11414 | -.06895 | -.02379 | -.06895 | .21745 | .11414 | .30975 |
| SCORE13 | -.09702 | -.03712 | -.30922 | .24927 | .24927 | .09702 | .24780 |
| SCORE14 | -.09737 | -.00646 | -.13770 | .34257 | .34257 | .28516 | .11615 |
| - SCORE15 | .01026 | .01907 | -.31537 | .14779 | .14779 | .12825 | -.03427 |
| SCORE16 | -.13215 | -.07110 | .05073 | -.07110 | -.07110 | -.05564 | -.15100 |
| SCORE17 | -.19180 | .26052 | .15374 | .01371 | .13711 | .05902 | .41477 |
| SCORE18 | .09042 | .34257 | .05798 | .34257 | .51709 | .28516 | .11615 |
| SCORE19 | .06579 | .28736 | .01371 | .45243 | .28736 | .28947 | .18129 |
| SCORE20 | -.00622 | .30062 | .10371 | .30062 | .14453 | .17419 | -.17142 |

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| | SCORE1 | SCORE2 | SCORE3 | SCORE4 | SCORE5 | SCORE6 | SCORE7 |
|---|---|---|---|---|---|---|---|
| SCORE21 | -.22942 | .21320 | -.11952 | .37310 | .05330 | .22942 | -.14367 |
| SCORE22 | -.04336 | .10073 | .11294 | .46335 | .10073 | .23846 | -.05430 |
| SCORE23 | -.04336 | .28204 | .11294 | .46335 | .10073 | .23846 | -.05430 |

| | SCORE8 | SCORE9 | SCORE10 | SCORE11 | SCORE12 | SCORE13 | SCORE14 |
|---|---|---|---|---|---|---|---|
| SCORE8 | 1.00000 | | | | | | |
| SCORE9 | .39815 | 1.00000 | | | | | |
| SCORE10 | .39815 | .85789 | 1.00000 | | | | |
| SCORE11 | .46417 | .41407 | .26888 | 1.00000 | | | |
| SCORE12 | .35644 | .26543 | .12761 | .26077 | 1.00000 | | |
| SCORE13 | .33168 | .26033 | .12251 | .32336 | .22277 | 1.00000 | |
| SCORE14 | .39820 | .39814 | .23017 | .50849 | .31373 | .72400 | 1.00000 |
| SCORE15 | -.05340 | .27071 | .14683 | .14533 | -.00445 | .30705 | .36878 |
| SCORE16 | .05430 | .27372 | .27372 | .21611 | .06637 | .21720 | .12500 |
| SCORE17 | .36263 | .36510 | .36510 | .28315 | .45648 | .13225 | .22877 |
| SCORE18 | .07240 | .23017 | .06221 | .16526 | -.01207 | .07240 | .00735 |
| SCORE19 | -.05707 | .06473 | -.09415 | .08417 | -.03995 | .09702 | .09737 |
| SCORE20 | .00540 | .03895 | .18918 | .02274 | -.15649 | .00540 | .02631 |
| SCORE21 | -.09950 | .20520 | .05130 | .20966 | .04975 | .19901 | .24254 |
| SCORE22 | .03761 | .09695 | .09695 | .15849 | .09402 | .20685 | .18334 |
| SCORE23 | .03761 | .27145 | .09695 | .33678 | .26326 | .20685 | .38960 |

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| | SCORE15 | SCORE16 | SCORE17 | SCORE18 | SCORE19 | SCORE20 | SCORE21 |
|---|---|---|---|---|---|---|---|
| SCORE15 | 1.00000 | | | | | | |
| SCORE16 | .55860 | 1.00000 | | | | | |
| SCORE17 | .01534 | .11438 | 1.00000 | | | | |
| SCORE18 | .07593 | .12500 | .08839 | 1.00000 | | | |
| SCORE19 | .12825 | -.05564 | -.20656 | .47295 | 1.00000 | | |
| SCORE20 | .05336 | .11180 | -.18137 | .38145 | .51011 | 1.00000 | |
| SCORE21 | .35777 | .12127 | .00000 | .24254 | .57354 | .43386 | 1.00000 |
| SCORE22 | .06761 | .16042 | -.09723 | .18334 | .62865 | .69693 | .56695 |
| SCORE23 | .37187 | .16042 | .19446 | .18334 | .43355 | .32797 | .75593 |

| | SCORE22 | SCORE23 |
|---|---|---|
| SCORE22 | 1.00000 | |
| SCORE23 | .57143 | 1.00000 |

Correlations which cannot be computed are printed as '.'

---

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Wilks' Lambda (U-statistic) and univariate F-ratio
with 1 and 52 degrees of freedom

| Variable | Wilks' Lambda | F | Significance |
|---|---|---|---|
| SCORE1 | .82609 | 10.95 | .0017 |
| SCORE2 | .57895 | 37.82 | .0000 |
| SCORE3 | .85106 | 9.100 | .0039 |
| SCORE4 | .57895 | 37.82 | .0000 |
| SCORE5 | .57895 | 37.82 | .0000 |
| SCORE6 | .45714 | 61.75 | .0000 |
| SCORE7 | .60138 | 34.47 | .0000 |
| SCORE8 | .58297 | 37.20 | .0000 |
| SCORE9 | .53977 | 44.34 | .0000 |
| SCORE10 | .53977 | 44.34 | .0000 |
| SCORE11 | .50207 | 51.57 | .0000 |
| SCORE12 | .64229 | 28.96 | .0000 |
| SCORE13 | .58297 | 37.20 | .0000 |
| SCORE14 | .38149 | 84.31 | .0000 |
| SCORE15 | .68966 | 23.40 | .0000 |
| SCORE16 | .38149 | 84.31 | .0000 |
| SCORE17 | .81805 | 11.57 | .0013 |
| SCORE18 | .38149 | 84.31 | .0000 |

---

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| Variable | Wilks' Lambda | F | Significance |
|---|---|---|---|
| SCORE19 | .45714 | 61.75 | .0000 |
| SCORE20 | .54054 | 44.20 | .0000 |
| SCORE21 | .50000 | 52.00 | .0000 |
| SCORE22 | .36364 | 91.00 | .0000 |
| SCORE23 | .36364 | 91.00 | .0000 |

---

## DISCRIMINANT ANALYSIS OF GOOD AND BAD CONSULTATIONS USING INFORMATION TASK SCORES

```
RESULT30.LIS
get file='dat32a'.
The SPSS/PC+ system file is read from
    file dat32a
The file was created on  5/1/91  at 10:45:43
and is titled                     SPSS/PC+
The SPSS/PC+ system file contains
     64 cases, each consisting of
     32 variables (including system variables).
     32 variables will be used in this session.
-------------------------------------------------------------------------------
Page  16                          SPSS/PC+                              5/1/91

This procedure was completed at 13:59:59
dscriminant groups = typexp (1,2)
/variables=score2 score6 to score12 score18
/priors=size

Since ANALYSIS= was omitted for the first analysis all variables
on the VARIABLES= list will be entered at level 1.
/statistics=5 13 14 15.


This Discriminant Analysis requires     2688 (      2.6K) BYTES of workspace.
-------------------------------------------------------------------------------
Page  17                          SPSS/PC+                 -            5/1/91

- - - - - - - -   D I S C R I M I N A N T   A N A L Y S I S   - - - - - - - -

On groups defined by TYPEXP

            64 (unweighted) cases were processed.
             6 of these were excluded from the analysis.
               0 had missing or out-of-range group codes.
               6 had at least one missing discriminating variable.
            58 (unweighted) cases will be used in the analysis.

Number of Cases by Group

                 Number of Cases
  TYPEXP     Unweighted      Weighted  Label
       1             29          29.0  GOOD
       2             29          29.0  BAD
     Total           58          58.0
-------------------------------------------------------------------------------
Page  18                          SPSS/PC+                              5/1/91

- - - - - - - -   D I S C R I M I N A N T   A N A L Y S I S   - - - - - - - -

On groups defined by TYPEXP

Analysis number       1
```

Canonical Discriminant Functions

```
     Maximum number of functions..............        1
     Minimum cumulative percent of variance...   100.00
     Maximum significance of Wilks' Lambda....   1.0000
```

Prior Probabilities

| Group | Prior | Label |
|---|---|---|
| 1 | .50000 | GOOD |
| 2 | .50000 | BAD |
| Total | 1.00000 | |



Canonical Discriminant Functions

| Fcn | Eigenvalue | Pct of Variance | Cum Pct | Canonical Corr | | After Fcn | Wilks' Lambda | Chisquare | DF | Sig |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | : | 0 | .1666 | 92.284 | 9 | .0000 |
| 1* | 5.0010 | 100.00 | 100.00 | .9129 | : | | | | | |

* marks the 1 canonical discriminant functions remaining in the analysis.

Standardized Canonical Discriminant Function Coefficients

| | FUNC 1 |
|---|---|
| SCORE2 | .47586 |
| SCORE6 | .62490 |
| SCORE7 | .33892 |
| SCORE8 | -.06257 |
| SCORE9 | -.65299 |
| SCORE10 | .81608 |
| SCORE11 | .24387 |
| SCORE12 | .26134 |
| SCORE18 | .21276 |



Structure Matrix:

Pooled-within-groups correlations between discriminating variables
and canonical discriminant functions
(Variables ordered by size of correlation within function)

| | FUNC 1 |
|---|---|
| SCORE18 | .52736 |
| SCORE6 | .51230 |
| SCORE11 | .47189 |
| SCORE8 | .40321 |
| SCORE10 | .40321 |
| SCORE7 | .38942 |
| SCORE9 | .36288 |
| SCORE2 | .35079 |
| SCORE12 | .33215 |

Canonical Discriminant Functions evaluated at Group Means (Group Centroids)

| Group | FUNC 1 |
|---|---|
| 1 | 2.19739 |
| 2 | -2.19739 |

Symbols used in Plots

| Symbol | Group | Label |
|---|---|---|
| 1 | 1 | GOOD |
| 2 | 2 | BAD |

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All-groups stacked Histogram

```
             Canonical Discriminant Function 1
    20 +                                    +
       |                      1             |
       |                      1             |
       |                      1             |
    15 +                      1             +
       |                      1             |
       |                      1             |
       |                      1             |
    10 +                      1             +
       |                      1             |
       |                      1             |
       |             2        1             |
     5 +             2        1             +
       |          2  2 2     2  11          |
       |          222222 2 2  1 111         |
       |          222222 222 211111         |
        X----+----+----+----+----+----+----+----X
      Out -6.0 -4.0 -2.0    .0  2.0  4.0  6.0    Out
  Class   2222222222222222222221111111111111111111
Centroids                2         1
```

Classification Results -

| Actual Group | | No. of Cases | Predicted Group Membership 1 | 2 |
|---|---|---|---|---|
| Group GOOD | 1 | 29 | 29<br>100.0% | 0<br>.0% |
| Group BAD | 2 | 29 | 2<br>6.9% | 27<br>93.1% |

Percent of "grouped" cases correctly classified: 96.55%

Classification Processing Summary

64 Cases were processed.

0 Cases were excluded for missing or out-of-range group codes.

Standardized Canonical Discriminant Function Coefficients

| | FUNC 1 |
|---|---|
| SCORE2 | .47586 |
| SCORE6 | .62490 |
| SCORE7 | .33892 |
| SCORE8 | -.06257 |
| SCORE9 | -.65299 |
| SCORE10 | .81608 |
| SCORE11 | .24387 |
| SCORE12 | .26134 |
| SCORE18 | .21276 |

---

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Structure Matrix:

Pooled-within-groups correlations between discriminating variables
and canonical discriminant functions
(Variables ordered by size of correlation within function)

| | FUNC 1 |
|---|---|
| SCORE18 | .52736 |
| SCORE6 | .51230 |
| SCORE11 | .47189 |
| SCORE8 | .40321 |
| SCORE10 | .40321 |
| SCORE7 | .38942 |
| SCORE9 | .36288 |
| SCORE2 | .35079 |
| SCORE12 | .33215 |

---

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Unstandardized Canonical Discriminant Function Coefficients

| | FUNC 1 |
|---|---|
| SCORE2 | 1.329659 |
| SCORE6 | 1.942901 |
| SCORE7 | .8853138 |
| SCORE8 | -.1692263 |
| SCORE9 | -1.677770 |
| SCORE10 | 2.207252 |
| SCORE11 | .6984203 |
| SCORE12 | .6914459 |
| SCORE18 | .6499874 |
| (constant) | -3.963165 |

Canonical Discriminant Functions evaluated at Group Means (Group Centroids)

| Group | FUNC 1 |
|---|---|
| 1 | 2.19739 |

## DISCRIMINANT ANALYSIS OF GOOD AND BAD CONSULTATIONS USING DOCTOR CHARACTERISTICS

```
                              RESULT31.LIS
GET FILE='DAT32A'.
The SPSS/PC+ system file is read from
    file DAT32A
The file was created on  5/1/91  at 10:45:43
and is titled                      SPSS/PC+
The SPSS/PC+ system file contains
     64 cases, each consisting of
     32 variables (including system variables).
     32 variables will be used in this session.
------------------------------------------------------------------------------
Page    2                         SPSS/PC+                            5/1/91

This procedure was completed at 14:20:08
DSCRIMINANT GROUPS = TYPEXP (1,2)
/VARIABLES=SCORE19 TO SCORE22
/PRIORS=SIZE

Since ANALYSIS= was omitted for the first analysis all variables
on the VARIABLES= list will be entered at level 1.
/STATISTICS=5 13 15.


This Discriminant Analysis requires      1328 (        1.3K) BYTES of workspace.
------------------------------------------------------------------------------
Page    3                         SPSS/PC+                            5/1/91

- - - - - - - -   D I S C R I M I N A N T   A N A L Y S I S   - - - - - - - -

On groups defined by TYPEXP

            64 (unweighted) cases were processed.
             2 of these were excluded from the analysis.
                0 had missing or out-of-range group codes.
                2 had at least one missing discriminating variable.
            62 (unweighted) cases will be used in the analysis.

Number of Cases by Group

               Number of Cases
  TYPEXP    Unweighted     Weighted  Label
       1            31         31.0  GOOD
       2            31         31.0  BAD
    Total           62         62.0
------------------------------------------------------------------------------
Page    4                         SPSS/PC+                            5/1/91

- - - - - - - -   D I S C R I M I N A N T   A N A L Y S I S   - - - - - - - -

On groups defined by TYPEXP

Analysis number        1
```

Canonical Discriminant Functions

```
     Maximum number of functions..............       1
     Minimum cumulative percent of variance...  100.00
     Maximum significance of Wilks' Lambda....  1.0000
```

Prior Probabilities

| Group | Prior | Label |
|---|---|---|
| 1 | .50000 | GOOD |
| 2 | .50000 | BAD |
| Total | 1.00000 | |



Canonical Discriminant Functions

```
              Pct of   Cum  Canonical  After  Wilks'
Fcn Eigenvalue Variance  Pct     Corr     Fcn  Lambda  Chisquare   DF  Sig
                                        :   0   .3521     60.541    4  .0000
  1*    1.8400  100.00  100.00    .8049 :
```

* marks the 1 canonical discriminant functions remaining in the analysis.

Standardized Canonical Discriminant Function Coefficients

| | FUNC 1 |
|---|---|
| SCORE19 | .23977 |
| SCORE20 | -.05653 |
| SCORE21 | .18195 |
| SCORE22 | .73233 |



Structure Matrix:

Pooled-within-groups correlations between discriminating variables
and canonical discriminant functions
(Variables ordered by size of correlation within function)

| | FUNC 1 |
|---|---|
| SCORE22 | .96523 |
| SCORE19 | .81502 |
| SCORE21 | .75542 |
| SCORE20 | .70290 |

Canonical Discriminant Functions evaluated at Group Means (Group Centroids)

| Group | FUNC 1 |
|---|---|
| 1 | 1.33441 |
| 2 | -1.33441 |

```
Symbols used in Plots

Symbol  Group  Label
------  -----  --------------------
  1        1   GOOD
  2        2   BAD
```

```
------------------------------------------------------------------------
Page    8                        SPSS/PC+                        5/1/91
              All-groups stacked Histogram

               Canonical Discriminant Function 1
    40 +                                                  +
       |                                                  |
       |                            2                     |
       |                            2                     |
    30 +                            1                     +
       |                            1                     |
       |                            1                     |
       |                            1                     |
    20 +                  2         1                     +
       |                  2         1                     |
       |                  2         1                     |
       |                  2         1                     |
    10 +                  2         1                     +
       |                  2         1                     |
       |                  2         1                     |
       |                  2 2       1                     |
        X----+----+----+----+----+----+----+----+----X
      Out -6.0 -4.0 -2.0    .0  2.0  4.0  6.0     Out
   Class   222222222222222222222111111111111111111
Centroids                    2       1
------------------------------------------------------------------------
Page    9                        SPSS/PC+                        5/1/91
```

Classification Results -

| Actual Group | | No. of Cases | Predicted Group Membership 1 | 2 |
|---|---|---|---|---|
| Group GOOD | 1 | 31 | 31<br>100.0% | 0<br>.0% |
| Group BAD | 2 | 31 | 7<br>22.6% | 24<br>77.4% |

Percent of "grouped" cases correctly classified: 88.71%

Classification Processing Summary
64 Cases were processed.
0 Cases were excluded for missing or out-of-range group codes.

UNIVERSITY OF YORK
HESLINGTON, YORK, YO1 5DD
Telephone (0904) 430000
Telex 57933 YORKUL Fax (0904) 433433

DEPARTMENT OF PSYCHOLOGY

Direct line (0904) 4331

## CONSENT FORM

This survey is part of a study run by researchers at the University of York which examines communication difficulties between doctors and patients. The study aims to find practical ways to improve medical care and help patients with their health needs.

Your participation in the research will help us define ways in which doctors succeed or fail in the area of communication. Participation is entirely voluntary and you are free to withdraw at any time. All information you provide will be completely confidential and we do not need to record your name at all.

It is important that your answers reflect your honest opinions so that any improvements can be planned to meet actual needs in appropriate ways.

Thank you for your cooperation, your participation is greatly appreciated.

# INFORMATION EXCHANGE SURVEY

Please answer YES or NO to the following items:

| YES | NO | YOU GO TO THE DOCTOR BECAUSE: |
|---|---|---|
| ( ) | ( ) | You want to find out what is causing your problems. |
| ( ) | ( ) | You want to know what to do about it. |
| ( ) | ( ) | You want to get appropriate medicine or treatment if needed. |
| ( ) | ( ) | You want to make sure nothing serious is wrong with you. |

OTHER REASONS:

______________________________________________
______________________________________________
______________________________________________
______________________________________________
______________________________________________

| YES | NO | WHEN YOU SEE THE DOCTOR DO YOU USUALLY: |
|---|---|---|
| ( ) | ( ) | Tell the doctor <u>all</u> of your symptoms. |
| ( ) | ( ) | Tell the doctor what you think causes them. |
| ( ) | ( ) | Tell the doctor if you think it may be a serious illness. |
| ( ) | ( ) | Tell the doctor <u>all</u> that you have done about the problem so far. |
| ( ) | ( ) | Mention <u>everything</u> that you think the doctor might need to know. |
| ( ) | ( ) | Try to direct the doctors attention to the matters most important to you. |

OTHER COMMENTS:

______________________________________________
______________________________________________
______________________________________________
______________________________________________
______________________________________________

DO YOU THINK -

| DOCTORS SHOULD: YES | NO | | DOCTORS OFTEN FAIL TO: YES | NO |
|---|---|---|---|---|
| ( ) | ( ) | Give you an opportunity to properly explain your health problems. | ( ) | ( ) |
| ( ) | ( ) | Take you seriously and consider your ideas and concerns. | ( ) | ( ) |
| ( ) | ( ) | Be interested in knowing how you feel. | ( ) | ( ) |
| ( ) | ( ) | Provide a diagnosis or explanation of what is wrong with you. | ( ) | ( ) |
| ( ) | ( ) | Say what causes it so you can take care in the future. | ( ) | ( ) |
| ( ) | ( ) | Explain what treatments are available. | ( ) | ( ) |
| ( ) | ( ) | Suggest the best treatment, say how it works and what you have to do. | ( ) | ( ) |
| ( ) | ( ) | Warn about any side effects of medication. | ( ) | ( ) |
| ( ) | ( ) | Tell you what to expect as you get better or worse. | ( ) | ( ) |
| ( ) | ( ) | Explain fully about any tests or procedures you have to have. | ( ) | ( ) |
| ( ) | ( ) | Find out what you want to know and make sure you understand. | ( ) | ( ) |
| ( ) | ( ) | Be sympathetic to your needs. | ( ) | ( ) |

CAN YOU THINK OF A PARTICULARLY BAD EXPERIENCE THAT YOU OR YOUR FAMILY HAVE HAD WITH A DOCTOR:

BAD ( ) NONE ( ) GOOD ( ) NONE ( )

| YES | NO | | YES | NO |
|---|---|---|---|---|
| ( ) | ( ) | Was the doctor available when needed. | ( ) | ( ) |
| ( ) | ( ) | Was the patient given the opportunity to fully explain the problem. | ( ) | ( ) |
| ( ) | ( ) | Was all available information about the patient and problem given to the doctor. | ( ) | ( ) |
| ( ) | ( ) | Did he listen to it. | ( ) | ( ) |
| ( ) | ( ) | Did he act on it. | ( ) | ( ) |
| ( ) | ( ) | Did the doctor appear to take account of all the information given to him. | ( ) | ( ) |
| | | Did the doctor provide adequate information about: | | |
| ( ) | ( ) | The cause of the problem. | ( ) | ( ) |
| ( ) | ( ) | His diagnosis. | ( ) | ( ) |
| ( ) | ( ) | All treatment options. | ( ) | ( ) |
| ( ) | ( ) | All possible side effects. | ( ) | ( ) |
| ( ) | ( ) | The best treatment and why. | ( ) | ( ) |
| ( ) | ( ) | Did the doctor advise the patient on what to do about the problem. | ( ) | ( ) |
| ( ) | ( ) | Was the treatment effective. | ( ) | ( ) |
| ( ) | ( ) | Was the advice any good. | ( ) | ( ) |
| ( ) | ( ) | Did the doctor arrange for tests or procedures to get more information or relieve the problem. | ( ) | ( ) |
| ( ) | ( ) | Did he provide information about what was involved or what might be learned from them. | ( ) | ( ) |
| ( ) | ( ) | Did the doctor check that the patient understood all that he/she had been told. | ( ) | ( ) |
| ( ) | ( ) | Did the doctor tell the patient all that he/she wanted to know. | ( ) | ( ) |
| ( ) | ( ) | Was the doctor – sympathetic | ( ) | ( ) |
| ( ) | ( ) | arrogant | ( ) | ( ) |
| ( ) | ( ) | caring | ( ) | ( ) |
| ( ) | ( ) | insensitive | ( ) | ( ) |
| ( ) | ( ) | a good doctor | ( ) | ( ) |

NOW CAN YOU THINK OF A PARTICULARLY GOOD EXPERIENCE THAT YOU OR YOUR FAMILY HAVE HAD WITH A DOCTOR:

PLEASE CIRCLE APPROPRIATE RESPONSE TO ALL QUESTIONS

9. How would you describe your general health?

   poor fair average good excellent

10. To which age group do you belong?

    below 16 16-25 26-35 36-45 46-55 56-65 over 65

11. Are you MALE or FEMALE?

12. How long have you been a patient of your own doctor? (an approximate answer is sufficient e.g. 3 years)

    ______________________________

13. Do you have any formal qualifications from university, polytechnic, or work related?

    Please list: ______________________________

    ______________________________

    ______________________________

    ______________________________

    ______________________________

14. How would you rate your own communication abilities?

    I____I____I____I____I____I____I

    I am an excellent communicator — I am a poor communicator

DO YOU HAVE ANY OTHER COMMENTS ABOUT DOCTORS GENERALLY OR ABOUT YOUR EXPERIENCES WITH THEM?

## SURVEY INSTRUCTIONS

Begin at address chosen as START ADDRESS.

If no one is home mark O by the household number and continue.

If door is answered explain survey and ask for completion of the questionnaire by the adult present who is next due to have a birthday.

If refused mark X by the household number, thank householder and continue.

If participating mark V by the household number and ask subject to read consent form. Administer the questionnaire and ask participant to initial the bottom of the last page to indicate informed consent. Thank the householder and continue.

TO CONTINUE - Move to the left 3 households and proceed as before.

In this manner collect the required number of completed questionnaires by continuously moving to the left from each previous household.

Each time you go out collecting data restart from the place where you left off.

If it becomes impossible to move further to the left choose another reasonable start address and continue as before.

# APPENDIX B

# PATIENT CONSULTATION QUESTIONNAIRE
(PCQ)

QUESTIONNAIRE TO ASSESS YOUR VIEWS ON CONSULTATION

Please mark the 7-point scales at a point best reflecting your opinion with regard to the consultation you have just completed. For example:

I_____I_____X_____I_____I_____I_____I

Where choices are offered please simply circle the answer most appropriate to your response. E.G.

Is it essential / desirable / unimportant

1. To what extent do you feel satisfied with this consultation?

I_____I_____I_____I_____I_____I_____I

highly satisfied — highly dissatisfied

2. How clearly did you define your reasons for attending the surgery to the doctor?

I_____I_____I_____I_____I_____I_____I

not very clearly — very clearly indeed

* Is it essential / desirable / unimportant that you clearly define these reasons?

3. How clear was the information you gave to the doctor regarding 1.symptoms 2.onset 3.development of problem? (use X if all information was similar or 1. 2. 3. to differentiate)

I_____I_____I_____I_____I_____I_____I

very clear information — not very clear at all

* Is it essential / desirable / unimportant that you provide clear information?

4. How fully did the doctor explain the cause or basis of the problem to you?

I______I______I______I______I______I______I

| | |
|---|---|
| no explanation given | full explanation given |

* Is it essential / desirable / unimportant for the doctor to do so?

5. To what extent do you feel your ideas were explored adequately and appropriately?

I______I______I______I______I______I______I

| | |
|---|---|
| ideas fully explored | not explored at all |

* Is it essential / desirable / unimportant that this is done?

6. How adequately and appropriately do you feel your concerns were dealt with?

I______I______I______I______I______I______I

| | |
|---|---|
| not at all | concerns fully explored |

* Is it essential / desirable / unimportant that this is done?

7. To what extent were your expectations regarding diagnosis and treatment explored?

I______I______I______I______I______I______I

| | |
|---|---|
| they were fully explored | not explored at all |

* Is it essential / desirable / unimportant that this is done?

8. How adequately and appropriately were effects of the problems discussed?

I______I______I______I______I______I______I

| | |
|---|---|
| not at all | effects fully discussed |

* Is it essential / desirable / unimportant that this is done?

9. How fully was the doctor provided with the information (s)he needed for medical decision making?

I_____I_____I_____I_____I_____I_____I

| | |
|---|---|
| got all required information | got no required information |

10. How fully do you feel the doctor understood your health needs?

I_____I_____I_____I_____I_____I_____I

| | |
|---|---|
| feel (s)he had no understanding | feel (s)he had full understanding |

* Is it essential / desirable / unimportant for him/her to do so?

11. How appropriate was the treatment/action chosen for the problem(s)?
(use X for general rating or 1. 2. 3. to differentiate)

I_____I_____I_____I_____I_____I_____I

| | |
|---|---|
| best possible action was chosen | inappropriate action was chosen |

12. How extensively were the therapeutic effects of any prescribed treatments explained to you?
(if no prescribed treatments please tick __ )

I_____I_____I_____I_____I_____I_____I

| | |
|---|---|
| no explanation given | fully explained |

* Is it essential / desirable / unimportant that the doctor do this?

13. How fully were possible side effects of treatment discussed? (if no side effects please tick __ )

I_____I_____I_____I_____I_____I_____I

| | |
|---|---|
| all possible side effects were discussed | side effects not discussed |

* Is it essential / desirable / unimportant that this is done?

14. How fully were you informed regarding what to expect as the condition gets better or worse?

I_____I_____I_____I_____I_____I_____I

no information given — full information provided

* Is it essential / desirable / unimportant that the doctor provide such information?

15. In your opinion how well do you understand the problem now?

I_____I_____I_____I_____I_____I_____I

fully understand — don't understand at all

* Is it essential / desirable / unimportant for you to gain undersanding?

16. To what extent do you feel that the doctor took you seriously?

I_____I_____I_____I_____I_____I_____I

not at all — very seriously

17. What was the level of care and interest shown to you during the consultation?

I_____I_____I_____I_____I_____I_____I

maximum care & interest — minimum care & interest

18. How easy or difficult is it for you to relate to this doctor?

I_____I_____I_____I_____I_____I_____I

very difficult — very easy

19. How would you describe your problem using the following categories? (please circle one)

trivial   minor   routine   serious   critical   terminal

20. What would you rate your level of concern before the consultation?

I______I______I______I______I______I______I

not at all worried — extremely worried

And after the consultation?

I______I______I______I______I______I______I

not at all worried — extremely worried

21. What are your intentions regarding the treatment the doctor proposed?

I______I______I______I______I______I______I

don't intend to adopt treatment offered — intend to fully adopt the treatment offered

22. To what extent did you feel pressured for time during the consultation?

I______I______I______I______I______I______I

not at all — very pressured for time

23. How fully were you provided with the information that you wanted?

I______I______I______I______I______I______I

got no required information — got all required information

24. Did you need to ask questions in order to get the required information? (please circle one response)

Yes No

25. How do you think the doctor ~~felt~~ feels about you asking questions?

I______I______I______I______I______I______I

positive — negative

what did you want from the consultation?

information    reassurance    further investigations

prescription    other (please specify)

........................................................................................................................
........................................................................................................................
........................................................................................................................
........................................................................................................................
........................................................................................................................
........................................................................................................................
........................................................................................................................

please circle any of the above and/or write your comments.

PLEASE CIRCLE APPROPRIATE RESPONSE TO ALL QUESTIONS

26. How would you describe your general health?

poor fair average good excellent

27. To which age group do you belong?

below 16 16-25 26-35 36-45 46-55 56-65 over 65

28. Are you MALE or FEMALE?

29. How long have you been a patient of this doctor?
(an approximate answer is sufficient e.g. 3 years)

________________________________________

(if first visit please tick __ )

30. Do you have any formal qualifications from university, polytechnic, or work related?

Please
list:________________________________________

________________________________________

________________________________________

________________________________________

________________________________________

31. How would you rate your own communication abilities?

I_____I_____I_____I_____I_____I_____I

| | |
|---|---|
| I am an excellent communicator | I am a poor communicator |

# CONSENT FORM

This study is part of a project run by researchers at the University of York to investigate communication between doctors and patients. The study aims to find practical ways to improve medical communication and make consultations more effective.

Your participation in the research would be greatly appreciated. Participation is entirely voluntary and you are free to withdraw at any time. All information you provide will be completely confidential and we do not need to record your name at all. Your responses are totally anonymous and you can be sure that neither staff nor patients of the practice will ever know what you have said about medical consultation or care.

In order to study all aspects of medical care we would like you to fill in a brief question sheet before the consultation and another on completion. We will also ask you to return a follow-up sheet in a postage paid envelope after one week.

It is important that your answers reflect your honest opinions so that any improvements can be planed to meet actual needs in appropriate ways.

Thank you for your cooperation and please feel free to ask for any further information you may require.

---

I understand that this study is part of an independent research project which aims to find out more about the experiences of doctors and patients in order to make medical consultations more effective. I understand that any information I give will be strictly confidential and I am free to withdraw at any time.

____________________________ _______________
signature of respondent date

____________________________
signature of researcher

MULTIPLE REGRESSION OF INFORMATION TASK VARIABLES ON SATISFACTION FOR THE WHOLE SAMPLE.

FILENAME = INFSATHJ.DOC

```
get /file = 'x4datdef'.

regress varaibles = psat paet pidea pconc pexp peff pprog
/statistics = defaults cha
/dependent = psat
/method = enter paet
/method = enter pprog
/method = enter pexp
/method = enter pconc
/method = enter peff
/method = enter pidea.
```

```
--------------------------------------------------------------------------
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        * * * *   M U L T I P L E    R E G R E S S I O N   * * * *

Listwise Deletion of Missing Data

Equation Number 1    Dependent Variable..   PSAT

Beginning Block Number  1.  Method:  Enter       PAET
--------------------------------------------------------------------------
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        * * * *   M U L T I P L E    R E G R E S S I O N   * * * *

Equation Number 1    Dependent Variable..   PSAT


Variable(s) Entered on Step Number
   1..    PAET


Multiple R           .10988
R Square             .01207          R Square Change      .01207
Adjusted R Square   -.02086          F Change             .36665
Standard Error      1.33313          Signif F Change      .5494

Analysis of Variance
                    DF       Sum of Squares       Mean Square
Regression           1               .65162            .65162
Residual            30             53.31713           1.77724

F =        .36665       Signif F =  .5494
```

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* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PAET | .07959 | .13144 | .10988 | .606 | .5494 |
| (Constant) | 5.97631 | .84672 | | 7.058 | .0000 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PIDEA | .82781 | .77136 | .85779 | 6.527 | .0000 |
| PCONC | .86572 | .86607 | .98872 | 9.329 | .0000 |
| PEXP | .86125 | .86114 | .98767 | 9.122 | .0000 |
| PEFF | .80765 | .74250 | .83499 | 5.969 | .0000 |
| PPROG | .04703 | .03130 | .43753 | .169 | .8673 |

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* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

End Block Number 1 All requested variables entered.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * *

Beginning Block Number 2. Method: Enter PPROG

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* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

Variable(s) Entered on Step Number
2.. PPROG

| | | | |
|---|---|---|---|
| Multiple R | .11420 | | |
| R Square | .01304 | R Square Change | .00097 |
| Adjusted R Square | -.05502 | F Change | .02844 |
| Standard Error | 1.35526 | Signif F Change | .8673 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 2 | .70385 | .35193 |
| Residual | 29 | 53.26490 | 1.83672 |

F = .19161 Signif F = .8267

---



* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PAET | .05404 | .20200 | .07461 | .268 | .7910 |
| PPROG | .02836 | .16815 | .04703 | .169 | .8673 |
| (Constant) | 5.97222 | .86112 | | 6.935 | .0000 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PIDEA | .83166 | .77432 | .39967 | 6.475 | .0000 |
| PCONC | .87059 | .86744 | .43359 | 9.225 | .0000 |
| PEXP | .86498 | .86421 | .43215 | 9.089 | .0000 |
| PEFF | .82739 | .75403 | .37740 | 6.075 | .0000 |

---



* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

End Block Number 2 All requested variables entered.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

Beginning Block Number 3. Method: Enter PEXP

---



* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

Variable(s) Entered on Step Number
3.. PEXP

| | | | |
|---|---|---|---|
| Multiple R | .86612 | | |
| R Square | .75016 | R Square Change | .73712 |
| Adjusted R Square | .72339 | F Change | 82.61128 |
| Standard Error | .69394 | Signif F Change | .0000 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 3 | 40.48534 | 13.49511 |
| Residual | 28 | 13.48341 | .48155 |

F = 28.02430 Signif F = .0000

---



* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PAET | -.05086 | .10408 | -.07022 | -.489 | .6289 |
| PPROG | .06756 | .08621 | .11206 | .784 | .4398 |
| PEXP | .86100 | .09473 | .86498 | 9.089 | .0000 |
| (Constant) | .98886 | .70358 | | 1.405 | .1709 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PIDEA | .39575 | .55687 | .39480 | 3.484 | .0017 |
| PCONC | .50399 | .66431 | .41980 | 4.618 | .0001 |
| PEFF | .17998 | .19296 | .28717 | 1.022 | .3159 |

---



* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

End Block Number 3 All requested variables entered.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * *

Beginning Block Number 4. Method: Enter PCONC

---



* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

```
Variable(s) Entered on Step Number
   4..    PCONC


Multiple R           .92759
R Square             .86042          R Square Change     .11026
Adjusted R Square    .83974          F Change          21.32733
Standard Error       .52821          Signif F Change    .0001

Analysis of Variance
                    DF      Sum of Squares      Mean Square
Regression           4           46.43570         11.60893
Residual            27            7.53305           .27900

F =      41.60879       Signif F =  .0000
-----------------------------------------------------------------------------
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        * * * *   M U L T I P L E    R E G R E S S I O N   * * * *

Equation Number 1    Dependent Variable..   PSAT


------------------ Variables in the Equation ------------------

Variable               B         SE B        Beta          T  Sig T

PAET        -5.09338E-03     .07984 -7.032E-03     -.064  .9496
PPROG       7.229365E-03     .06691     .01199      .108  .9148
PEXP              .48762     .10833     .48988     4.501  .0001
PCONC             .61950     .13414     .50399     4.618  .0001
(Constant)       -.68880     .64713                -1.064  .2966


------------- Variables not in the Equation -------------

Variable     Beta In  Partial  Min Toler         T  Sig T

PIDEA         .32346   .55606     .37410     3.411  .0021
PEFF         -.07253  -.09323     .24412     -.477  .6370
-----------------------------------------------------------------------------
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        * * * *   M U L T I P L E    R E G R E S S I O N   * * * *

Equation Number 1    Dependent Variable..   PSAT


End Block Number   4   All requested variables entered.



        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

Beginning Block Number  5.  Method:  Enter      PEFF
-----------------------------------------------------------------------------
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```

* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PSAT

Variable(s) Entered on Step Number
5..   PEFF

| | | | |
|---|---|---|---|
| Multiple R | .92824 | | |
| R Square | .86163 | R Square Change | .00121 |
| Adjusted R Square | .83502 | F Change | .22798 |
| Standard Error | .53592 | Signif F Change | .6370 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 5 | 46.50118 | 9.30024 |
| Residual | 26 | 7.46757 | .28721 |

F =   32.38084   Signif F = .0000



* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PSAT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PAET | .01854 | .09492 | .02559 | .195 | .8467 |
| PPROG | -1.02205E-03 | .07005 | -1.695E-03 | -.015 | .9885 |
| PEXP | .52277 | .13228 | .52518 | 3.952 | .0005 |
| PCONC | .64679 | .14762 | .52619 | 4.381 | .0002 |
| PEFF | -.11814 | .24742 | -.07050 | -.477 | .6370 |
| (Constant) | -.40216 | .88966 | | -.452 | .6550 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PIDEA | .44493 | .63994 | .14906 | 4.164 | .0003 |



* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PSAT

End Block Number   5   All requested variables entered.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * *

Beginning Block Number 6. Method: Enter PIDEA

---

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* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

Variable(s) Entered on Step Number
6.. PIDEA

| | | | |
|---|---|---|---|
| Multiple R | .95828 | | |
| R Square | .91830 | R Square Change | .05667 |
| Adjusted R Square | .89869 | F Change | 17.33882 |
| Standard Error | .41997 | Signif F Change | .0003 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 6 | 49.55934 | 8.25989 |
| Residual | 25 | 4.40941 | .17638 |

F = 46.83104 Signif F = .0000

---

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* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PSAT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PAET | -.22637 | .09483 | -.31254 | -2.387 | .0249 |
| PPROG | .06391 | .05707 | .10601 | 1.120 | .2734 |
| PEXP | .14358 | .13798 | .14424 | 1.041 | .3080 |
| PCONC | .36398 | .13414 | .29611 | 2.713 | .0119 |
| PEFF | .52659 | .24813 | .31426 | 2.122 | .0439 |
| PIDEA | .47183 | .11331 | .44498 | 4.164 | .0003 |
| (Constant) | -2.25197 | .82668 | | -2.724 | .0116 |

End Block Number 6 All requested variables entered

---

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This procedure was completed at 13:47:35

---

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FINISH.

MULTIPLE REGRESSION OF INFORMATION TASKS ON EACH OF THE OUTCOME MEASURES.

---

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This procedure was completed at 16:21:11

```
REGRESS VARIABLES =PPUND PAET PIDEA PCONC PEXP PEFF PPROG
/DEPENDENT =PPUND
/METHOD =STEPWISE.
```

---

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**** M U L T I P L E   R E G R E S S I O N ****

Listwise Deletion of Missing Data

Equation Number 1    Dependent Variable..  PPUND

Beginning Block Number  1.  Method:  Stepwise

---

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* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PPUND

Variable(s) Entered on Step Number
1..    PCONC

| | |
|---|---|
| Multiple R | .67206 |
| R Square | .45166 |
| Adjusted R Square | .43339 |
| Standard Error | .87094 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 1 | 18.74409 | 18.74409 |
| Residual | 30 | 22.75591 | .75853 |

F =    24.71107    Signif F =  .0000

---

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* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PPUND

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PCONC | .72441 | .14573 | .67206 | 4.971 | .0000 |
| (Constant) | 1.59843 | .97314 | | 1.643 | .1109 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PAET | .09422 | .12651 | .98872 | .687 | .4977 |
| PIDEA | .15118 | .16548 | .65701 | .904 | .3736 |
| PEXP | -.09456 | -.08584 | .45186 | -.464 | .6461 |
| PEFF | .04965 | .04740 | .49975 | .256 | .8001 |
| PPROG | -1.536E-03 | -.00205 | .97982 | -.011 | .9913 |

---

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* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PPUND

End Block Number   1   PIN =    .050 Limits reached.

---

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This procedure was completed at 16:21:44

```
REGRESS VARIABLES =PSERIOUS PAET PIDEA PCONC PEXP PEFF PPROG
/DEPENDENT =PSERIOUS
/METHOD =STEPWISE.
--------------------------------------------------------------------------------
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         * * * *   M U L T I P L E   R E G R E S S I O N   * * * *


Listwise Deletion of Missing Data

Equation Number 1    Dependent Variable..   PSERIOUS

Beginning Block Number  1.  Method:  Stepwise
--------------------------------------------------------------------------------
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```

* * * *   M U L T I P L E   R E G R E S S I O N   * * * *

Equation Number 1    Dependent Variable..   PSERIOUS

Variable(s) Entered on Step Number
1..   PCONC

| | |
|---|---|
| Multiple R | .76290 |
| R Square | .58201 |
| Adjusted R Square | .56760 |
| Standard Error | .67433 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 1 | 18.36145 | 18.36145 |
| Residual | 29 | 13.18693 | .45472 |

F =   40.37953   Signif F =  .0000

---



* * * *   M U L T I P L E   R E G R E S S I O N   * * * *

Equation Number 1    Dependent Variable..   PSERIOUS

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PCONC | .71869 | .11310 | .76290 | 6.354 | .0000 |
| (Constant) | 1.85118 | .75406 | | 2.455 | .0203 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PAET | .13728 | .21125 | .98977 | 1.144 | .2625 |
| PIDEA | -.04961 | -.06235 | .66013 | -.331 | .7434 |
| PEXP | -.31495 | -.32824 | .45401 | -1.839 | .0766 |
| PEFF | -.14833 | -.16255 | .50198 | -.872 | .3908 |
| PPROG | .25448 | .38685 | .96596 | 2.220 | .0347 |

---

* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PSERIOUS

Variable(s) Entered on Step Number
2..    PPROG

| | |
|---|---|
| Multiple R | .80285 |
| R Square | .64456 |
| Adjusted R Square | .61918 |
| Standard Error | .63284 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 2 | 20.33494 | 10.16747 |
| Residual | 28 | 11.21345 | .40048 |

F =    25.38818    Signif F = .0000

------------------------------------------------------------------------------

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* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PSERIOUS

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PCONC | .67446 | .10799 | .71594 | 6.245 | .0000 |
| PPROG | .12760 | .05748 | .25448 | 2.220 | .0347 |
| (Constant) | 1.39312 | .73713 | | 1.890 | .0692 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PAET | -.28529 | -.24789 | .26190 | -1.330 | .1948 |
| PIDEA | -.14299 | -.18766 | .61216 | -.993 | .3296 |
| PEXP | -.29426 | -.33201 | .44127 | -1.829 | .0785 |
| PEFF | -.23339 | -.27110 | .47954 | -1.463 | .1549 |

------------------------------------------------------------------------------

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* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PSERIOUS

End Block Number  1   PIN =   .050 Limits reached.

------------------------------------------------------------------------------

------------------------------------------------------------------------------

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```
REGRESS VARIABLES =PTRTAP PAET PIDEA PCONC PEXP PEFF PPROG
/DEPENDENT =PTRTAP
/METHOD =STEPWISE.
```

* * * * M U L T I P L E   R E G R E S S I O N * * * *

Listwise Deletion of Missing Data

Equation Number 1    Dependent Variable..   PTRTAP

Beginning Block Number  1.  Method:  Stepwise

---

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**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. PTRTAP

Variable(s) Entered on Step Number
1.. PEXP

| | |
|---|---|
| Multiple R | .81055 |
| R Square | .65700 |
| Adjusted R Square | .64517 |
| Standard Error | .69719 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 1 | 27.00048 | 27.00048 |
| Residual | 29 | 14.09629 | .48608 |

F = 55.54752 Signif F = .0000

---

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**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. PTRTAP

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PEXP | .70754 | .09493 | .81055 | 7.453 | .0000 |
| (Constant) | 1.92703 | .60715 | | 3.174 | .0035 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PAET | .02762 | .04691 | .98922 | .249 | .8056 |
| PIDEA | -.04806 | -.06329 | .59476 | -.336 | .7397 |
| PCONC | .44491 | .51187 | .45401 | 3.153 | .0038 |
| PEFF | .29633 | .32041 | .40100 | 1.790 | .0843 |
| PPROG | .05178 | .08834 | .99838 | .469 | .6425 |

---

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* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PTRTAP

Variable(s) Entered on Step Number
2.. PCONC

| | |
|---|---|
| Multiple R | .86422 |
| R Square | .74687 |
| Adjusted R Square | .72879 |
| Standard Error | .60953 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 2 | 30.69388 | 15.34694 |
| Residual | 28 | 10.40289 | .37153 |

F = 41.30721 Signif F = .0000

---

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* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PTRTAP

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PEXP | .42057 | .12318 | .48180 | 3.414 | .0020 |
| PCONC | .47838 | .15172 | .44491 | 3.153 | .0038 |
| (Constant) | .57487 | .68241 | | .842 | .4067 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PAET | .01666 | .03292 | .45316 | .171 | .8654 |
| PIDEA | -.13882 | -.20773 | .38985 | -1.103 | .2796 |
| PEFF | .16398 | .19598 | .32701 | 1.038 | .3083 |
| PPROG | 4.6459E-03 | .00911 | .44275 | .047 | .9626 |

---

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* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PTRTAP

End Block Number 1 PIN = .050 Limits reached.

---

* * * * M U L T I P L E R E G R E S S I O N * * * *

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. PRELATE

Beginning Block Number 1. Method: Stepwise

---

Page 5 SPSS/PC+ 12/4/91

* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PRELATE

Variable(s) Entered on Step Number
1.. PEXP

| | |
|---|---|
| Multiple R | .82453 |
| R Square | .67985 |
| Adjusted R Square | .66918 |
| Standard Error | .46737 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 1 | 13.91568 | 13.91568 |
| Residual | 30 | 6.55307 | .21844 |

F = 63.70609 Signif F = .0000

---

Page 6 SPSS/PC+ 12/4/91

* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PRELATE

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PEXP | .50545 | .06333 | .82453 | 7.982 | .0000 |
| (Constant) | 3.54389 | .40626 | | 8.723 | .0000 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PAET | .03279 | .05759 | .98767 | .311 | .7583 |
| PIDEA | .03768 | .05114 | .58976 | .276 | .7847 |
| PEFF | .15470 | .17259 | .39847 | .944 | .3532 |
| PCONC | .15040 | .17868 | .45186 | .978 | .3362 |
| PPROG | -.01494 | -.02637 | .99746 | -.142 | .8880 |

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* * * * M U L T I P L E R E G R E S S I O N * * * *

Equation Number 1 Dependent Variable.. PRELATE

End Block Number 1 PIN = .050 Limits reached.

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This procedure was completed at 16:24:01

```
REGRESS VARIABLES =PINFGOT PAET PIDEA PCONC PEXP PEFF PPROG
/DEPENDENT =PINFGOT
/METHOD =STEPWISE.
```

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* * * * M U L T I P L E   R E G R E S S I O N * * * *

Listwise Deletion of Missing Data

Equation Number 1    Dependent Variable..   PINFGOT

Beginning Block Number  1.  Method:  Stepwise

---



* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PINFGOT

Variable(s) Entered on Step Number
1..    PEFF

| | |
|---|---|
| Multiple R | .69576 |
| R Square | .48408 |
| Adjusted R Square | .46688 |
| Standard Error | .94991 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 1 | 25.39883 | 25.39883 |
| Residual | 30 | 27.06992 | .90233 |

F =     28.14803     Signif F =  .0000

---



* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PINFGOT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PEFF | 1.14959 | .21668 | .69576 | 5.305 | .0000 |
| (Constant) | -1.37073 | 1.45202 | | -.944 | .3527 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PAET | .12304 | .15653 | .83499 | .853 | .4004 |
| PIDEA | .29251 | .36962 | .82378 | 2.142 | .0407 |
| PCONC | .06253 | .06154 | .49975 | .332 | .7422 |
| PEXP | .35777 | .31442 | .39847 | 1.784 | .0850 |
| PPROG | -.01378 | -.01871 | .95032 | -.101 | .9204 |

---

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* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PINFGOT

Variable(s) Entered on Step Number
2..   PIDEA

| | |
|---|---|
| Multiple R | .74469 |
| R Square | .55456 |
| Adjusted R Square | .52384 |
| Standard Error | .89773 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 2 | 29.09705 | 14.54853 |
| Residual | 29 | 23.37170 | .80592 |

F = 18.05206    Signif F = .0000

---

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* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PINFGOT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PEFF | .94671 | .22562 | .57296 | 4.196 | .0002 |
| PIDEA | .30582 | .14276 | .29251 | 2.142 | .0407 |
| (Constant) | -1.93166 | 1.39702 | | -1.383 | .1773 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PAET | .05402 | .07163 | .75213 | .380 | .7068 |
| PCONC | -.13352 | -.12629 | .39854 | -.674 | .5060 |
| PEXP | .18140 | .14332 | .27808 | .766 | .4499 |
| PPROG | -.06453 | -.09273 | .79746 | -.493 | .6260 |

---

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* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PINFGOT

End Block Number 1   PIN = .050 Limits reached.

---

MANN-WHITNEY RANKINGS TEST OF THE LIKELIHOOD FOR REDUCED CONCERN IN GROUPS HAVING CONCERNS FULLY DEALT WITH AND THOSE WHO DID NOT.

Mann-Whitney Confidence Interval and Test

| Concerns: | N | Median | Mean Rank |
|---|---|---|---|
| Fully explored | 22 | 1.0000 | 15 |
| Not fully explored | 5 | 0.0000 | 9 |

Point estimate for ETA1-ETA2 is 1.0000

95.1 pct c.i. for ETA1-ETA2 is (-0.000, 1.0000)

$W_1$ = 333.5  $W_2$ = 44.5

Test of ETA1 = ETA2 vs ETA1 n.e. ETA2 is sig at 0.1186

THE TEST IS SIGNIFICANT AT 0.0303 (adjusted for ties)

MULTIPLE REGRESSION OF OUTCOME MEASURES ON PATIENT SATISFACTION

```
GET /FILE = 'X4DATDEF'.
The SPSS/PC+ system file is read from
   file X4DATDEF
The file was created on  9/24/91 at 10:28:53
and is titled                       SPSS/PC+
The SPSS/PC+ system file contains
     35 cases, each consisting of
     96 variables (including system variables).
     96 variables will be used in this session.
-----------------------------------------------------------------------------
Page   2                          SPSS/PC+                          12/11/91

This procedure was completed at 11:37:43
REGR VARIABLES = PSAT PSERIOUS PTRTAP PRELATE PPUND
/STAT = DEFAULT CHA
/DEPENDENT = PSAT
/METHOD = ENTER PPUND
/METHOD = ENTER PSERIOUS
/METHOD = ENTER PTRTAP
/METHOD = ENTER PRELATE.
-----------------------------------------------------------------------------
Page   3                          SPSS/PC+                          12/11/91

         * * * *   M U L T I P L E   R E G R E S S I O N   * * * *


Listwise Deletion of Missing Data

Equation Number 1    Dependent Variable..   PSAT

Beginning Block Number  1.  Method:  Enter      PPUND
-----------------------------------------------------------------------------
Page   4                          SPSS/PC+                          12/11/91

         * * * *   M U L T I P L E   R E G R E S S I O N   * * * *

Equation Number 1    Dependent Variable..   PSAT


Variable(s) Entered on Step Number
   1..    PPUND


Multiple R           .63510
R Square             .40335          R Square Change     .40335
Adjusted R Square    .38410          F Change          20.95650
Standard Error      1.02176          Signif F Change     .0001

Analysis of Variance
                    DF      Sum of Squares      Mean Square
Regression           1            21.87852         21.87852
Residual            31            32.36390          1.04400

F =      20.95650       Signif F =  .0001
-----------------------------------------------------------------------------
```

Page 5 SPSS/PC+ 12/11/91

**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. PSAT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PPUND | .72489 | .15835 | .63510 | 4.578 | .0001 |
| (Constant) | 1.87191 | 1.02325 | | 1.829 | .0770 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PSERIOUS | .41510 | .38050 | .50133 | 2.254 | .0317 |
| PTRTAP | .55354 | .59127 | .68075 | 4.016 | .0004 |
| PRELATE | .57806 | .70069 | .87664 | 5.379 | .0000 |

End Block Number 1 All requested variables entered.

---

Page 6 SPSS/PC+ 12/11/91

**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. PSAT

Beginning Block Number 2. Method: Enter PSERIOUS

---

Page 7 SPSS/PC+ 12/11/91

**** MULTIPLE REGRESSION ****

Equation Number 1 Dependent Variable.. PSAT

Variable(s) Entered on Step Number
2.. PSERIOUS

| | | | |
|---|---|---|---|
| Multiple R | .69981 | | |
| R Square | .48973 | R Square Change | .08638 |
| Adjusted R Square | .45571 | F Change | 5.07862 |
| Standard Error | .96053 | Signif F Change | .0317 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 2 | 26.56411 | 13.28206 |
| Residual | 30 | 27.67831 | .92261 |

F = 14.39617 Signif F = .0000

---

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**** MULTIPLE REGRESSION ****

Equation Number 1    Dependent Variable..  PSAT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PPUND | .39032 | .21024 | .34197 | 1.857 | .0732 |
| PSERIOUS | .54146 | .24027 | .41510 | 2.254 | .0317 |
| (Constant) | .42406 | 1.15674 | | .367 | .7165 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PTRTAP | .49089 | .54096 | .45635 | 3.464 | .0017 |
| PRELATE | .54753 | .71210 | .48572 | 5.462 | .0000 |

End Block Number  2  All requested variables entered.

Page 9    SPSS/PC+    12/11/91

**** MULTIPLE REGRESSION ****

Equation Number 1    Dependent Variable..  PSAT

Beginning Block Number  3.  Method:  Enter    PTRTAP

Page 10    SPSS/PC+    12/11/91

**** MULTIPLE REGRESSION ****

Equation Number 1    Dependent Variable..  PSAT

Variable(s) Entered on Step Number
3..    PTRTAP

| | | | |
|---|---|---|---|
| Multiple R | .79941 | | |
| R Square | .63905 | R Square Change | .14932 |
| Adjusted R Square | .60171 | F Change | 11.99727 |
| Standard Error | .82166 | Signif F Change | .0017 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 3 | 34.66378 | 11.55459 |
| Residual | 29 | 19.57865 | .67513 |

F =    17.11473    Signif F =  .0000

Page 11    SPSS/PC+    12/11/91

* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PSAT

------------------ Variables in the Equation ------------------

| Variable | B | SE B | Beta | T | Sig T |
|---|---|---|---|---|---|
| PPUND | .21184 | .18708 | .18560 | 1.132 | .2668 |
| PSERIOUS | .31797 | .21542 | .24376 | 1.476 | .1507 |
| PTRTAP | .54921 | .15856 | .49089 | 3.464 | .0017 |
| (Constant) | -.44209 | 1.02062 | | -.433 | .6681 |

------------- Variables not in the Equation -------------

| Variable | Beta In | Partial | Min Toler | T | Sig T |
|---|---|---|---|---|---|
| PRELATE | .53268 | .55099 | .27726 | 3.494 | .0016 |

End Block Number   3   All requested variables entered.

---

Page 12    SPSS/PC+    12/11/91

* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PSAT

Beginning Block Number  4.  Method:  Enter     PRELATE

---

Page 13    SPSS/PC+    12/11/91

* * * * M U L T I P L E   R E G R E S S I O N * * * *

Equation Number 1    Dependent Variable..   PSAT

Variable(s) Entered on Step Number
   4..    PRELATE

| | | | |
|---|---|---|---|
| Multiple R | .86524 | | |
| R Square | .74863 | R Square Change | .10958 |
| Adjusted R Square | .71272 | F Change | 12.20613 |
| Standard Error | .69782 | Signif F Change | .0016 |

Analysis of Variance

| | DF | Sum of Squares | Mean Square |
|---|---|---|---|
| Regression | 4 | 40.60764 | 10.15191 |
| Residual | 28 | 13.63479 | .48696 |

F =     20.84766      Signif F =  .0000

---

Page 14    SPSS/PC+    12/11/91

* * * * M U L T I P L E   R E G R E S S I O N * * * *

```
Equation Number 1    Dependent Variable..   PSAT

------------------ Variables in the Equation ------------------

Variable              B          SE B         Beta          T  Sig T

PPUND            .23871        .15907       .20914      1.501  .1446
PSERIOUS         .41663        .18512       .31940      2.251  .0325
PTRTAP           .02636        .20132       .02356       .131  .8968
PRELATE          .86553        .24774       .53268      3.494  .0016
(Constant)     -3.77610       1.28918                  -2.929  .0067

End Block Number   4   All requested variables entered.
------------------------------------------------------------------------------
Page  15                          SPSS/PC+                             12/11/91

This procedure was completed at 11:38:41
------------------------------------------------------------------------------
Page  16                          SPSS/PC+                             12/11/91

FINISH.

End of Include file.
```

# APPENDIX C

DOCTOR CONSULTATION QUESTIONNAIRE
(DCQ)

## QUESTIONNAIRE TO ASSESS YOUR VIEWS ON CONSULTATION

Please mark the 7-point scales at a point best reflecting **your opinion** with regard to the consultation you have just completed. For example:

I_____I_____X_____I_____I_____I_____I

Where choices are offered please simply circle the answer most appropriate to your response. E.G.

Is it essential / desirable / unimportant

1. To what extent do you feel satisfied with this consultation?

I_____I_____I_____I_____I_____I_____I

highly satisfied — highly dissatisfied

2. How clearly did the patient define his or her reasons for attending the surgery?

I_____I_____I_____I_____I_____I_____I

not very clearly — very clearly indeed

* Is it essential / desirable / unimportant that the patient clearly define these reasons?

3. How clear was the information provided by the patient regarding 1.symptoms 2.onset 3.development of problem? (use X if all information was similar or 1. 2. 3. to differentiate)

I_____I_____I_____I_____I_____I_____I

very clear information — not very clear at all

* Is it essential / desirable / unimportant that the patient provide clear information?

4. How fully did you explain the cause or basis of the problem to the patient?

I______I______I______I______I______I______I

no explanation given — full explanation given

* Is it essential / desirable / unimportant for you to do so?

5. To what extent do you feel the patients ideas were explored adequately and appropriately?

I______I______I______I______I______I______I

ideas fully explored — not explored at all

* Is it essential / desirable / unimportant that this is done?

6. How adequately and appropriately do you feel the patients concerns were dealt with?

I______I______I______I______I______I______I

not at all — concerns fully explored

* Is it essential / desirable / unimportant that this is done?

7. To what extent were the patients expectations regarding diagnosis and treatment explored?

I______I______I______I______I______I______I

they were fully explored — not explored at all

* Is it essential / desirable / unimportant that this is done?

8. How adequately and appropriately were effects of the problems discussed?

I______I______I______I______I______I______I

not at all — effects fully discussed

* Is it essential / desirable / unimportant that this is done?

9. How fully were you provided with the information you needed for medical decision making?

I______I______I______I______I______I______I

| | |
|---|---|
| got all required information | got no required information |

10. How fully do you feel you understood the patient's health needs?

I______I______I______I______I______I______I

| | |
|---|---|
| feel I had no understanding | feel I had full understanding |

* Is it essential / desirable / unimportant for you to do so?

11. How appropriate was the treatment/action chosen for the problem(s)?
(use X for general rating or 1. 2. 3. to differentiate)

I______I______I______I______I______I______I

| | |
|---|---|
| best possible action was chosen | inappropriate action was chosen |

12. How extensively were the therapeutic effects of any prescribed treatments explained to the patient?
(if no prescribed treatments please tick __ )

I______I______I______I______I______I______I

| | |
|---|---|
| no explanation given | fully explained |

* Is it essential / desirable / unimportant that you do this?

13. How fully were possible side effects of treatment discussed? (if no side effects please tick __ )

I______I______I______I______I______I______I

| | |
|---|---|
| all possible side effects were discussed | side effects not discussed |

* Is it essential / desirable / unimportant that this is done?

14. How fully did you inform the patient regarding what to expect as the condition gets better or worse?

I______I______I______I______I______I______I

no information given — full information provided

* Is it essential / desirable / unimportant that you provide such information?

15. In your opinion how well does the patient understand the problem now?

I______I______I______I______I______I______I

fully understands — doesn't understand at all

* Is it essential / desirable / unimportant for the patient to gain undersanding?

16. To what extent do you feel that you took the patient seriously?

I______I______I______I______I______I______I

not at all — very seriously

17. What was the level of care and interest shown to the patient during the consultation?

I______I______I______I______I______I______I

maximum care & interest — minimum care & interest

18. How easy or difficult is it for you to relate to this patient?

I______I______I______I______I______I______I

very difficult — very easy

19. How would you describe the patients problem using the following categories? (please circle one)

trivial minor routine serious critical terminal

20. What would you judge to be the patients level of concern before the consultation?

I______I______I______I______I______I______I

not at all worried — extremely worried

And after the consultation?

I______I______I______I______I______I______I

not at all worried — extremely worried

21. How do you assess the patients intentions regarding the treatment you proposed?

I______I______I______I______I______I______I

doesn't intend to adopt treatment offered — intends to fully adopt the treatment offered

22. To what extent did you feel pressured for time during the consultation?

I______I______I______I______I______I______I

not at all — very pressured for time

23. How fully was the patient provided with the information that he or she wanted?

I______I______I______I______I______I______I

got no required information — got all required information

24. Did the patient need to ask questions in order to get the required information? (please circle one response)

Yes          No

25. How do you feel about this patient asking questions?

I______I______I______I______I______I______I

positive — negative

What do you think the patient wanted from the consultation?

information    reassurance    further investigations

prescription    other (please specify)

please circle any of the above and/or write your comments.

CANNONICAL CORRELATION FOR THE TWO SETS OF INFORMATION TASK RATINGS WITH DOCTORS' RATINGS AS INDEPENDENT VARIABLES AND PATIENTS' RATINGS AS DEPENDENT VARIABLES.

```
SET LISTING = 'RES5.DOC'.
MANOVA PREAS PINF PAET PIDEA PCONC PEXP PEFF PTRTEX PSIDE PPROG WITH
The raw data or transformation pass is proceeding
     35 cases are written to the uncompressed active file.
       DREAS DINF DAET DIDEA DCONC DEXP DEFF DTRTEX DSIDE DPROG
/PRINT=ERROR(SSCP COV COR)
       SIGNIF(HYPOTH STEPDOWN DIMENR EIGEN)
/DISCRIM=RAW,STAN,ESTIM,COR,ALPHA(1.0).
/DESIGN.
 - - - - - - - - - - -

- A full factorial model is generated for this problem. -


        35 cases accepted.
         0 cases rejected because of out-of-range factor values.
         0 cases rejected because of missing data.
         1 non-empty cells.

         1 design will be processed.
--------------------------------------------------------------------------------

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* * ANALYSIS  OF  VARIANCE -- DESIGN   1 * *
```

Adjusted WITHIN CELLS Correlations with Std. Devs. on Diagonal

| | PREAS | PINF | PAET | PIDEA | PCONC | PEXP |
|---|---|---|---|---|---|---|
| PREAS | .458 | | | | | |
| PINF | .356 | 1.298 | | | | |
| PAET | .098 | .052 | 1.980 | | | |
| PIDEA | .624 | .167 | .449 | 1.345 | | |
| PCONC | .166 | .036 | .260 | .584 | .954 | |
| PEXP | .438 | .193 | .155 | .653 | .766 | 1.346 |
| PEFF | .152 | .205 | .503 | .418 | .677 | .787 |
| PTRTEX | -.311 | -.197 | -.168 | -.189 | -.011 | -.037 |
| PSIDE | .060 | -.016 | .434 | .312 | .151 | .089 |
| PPROG | .083 | .009 | .601 | .264 | .078 | -.117 |

| | PEFF | PTRTEX | PSIDE | PPROG |
|---|---|---|---|---|
| PEFF | .820 | | | |
| PTRTEX | -.056 | .693 | | |
| PSIDE | .290 | -.317 | 1.899 | |
| PPROG | .205 | .031 | .294 | 2.125 |

--------------------------------------------------------------------------------

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Statistics for ADJUSTED WITHIN CELLS correlations

Determinant = .00077
Bartlett test of sphericity = 142.26693 with 45 D. F.
Significance = .000

F(max) criterion = 21.55259 with (10,24) D. F.

\- - - - - - - - - - -
Adjusted WITHIN CELLS Variances and Covariances

| | PREAS | PINF | PAET | PIDEA | PCONC | PEXP |
|---|---|---|---|---|---|---|
| PREAS | .210 | | | | | |
| PINF | .212 | 1.686 | | | | |
| PAET | .089 | .133 | 3.921 | | | |
| PIDEA | .384 | .291 | 1.195 | 1.809 | | |
| PCONC | .072 | .044 | .491 | .749 | .910 | |
| PEXP | .270 | .337 | .413 | 1.182 | .983 | 1.811 |
| PEFF | .057 | .219 | .816 | .461 | .530 | .869 |
| PTRTEX | -.099 | -.177 | -.231 | -.176 | -.008 | -.034 |
| PSIDE | .052 | -.040 | 1.634 | .798 | .274 | .227 |
| PPROG | .080 | .024 | 3.370 | .753 | .159 | -.334 |

| | PEFF | PTRTEX | PSIDE | PPROG |
|---|---|---|---|---|
| PEFF | .673 | | | |
| PTRTEX | -.032 | .480 | | |
| PSIDE | .452 | -.418 | 3.608 | |
| PPROG | .357 | .046 | 1.185 | 4.518 |

---

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Adjusted WITHIN CELLS Sum-of-Squares and Cross-Products

| | PREAS | PINF | PAET | PIDEA | PCONC | PEXP |
|---|---|---|---|---|---|---|
| PREAS | 5.031 | | | | | |
| PINF | 5.086 | 40.461 | | | | |
| PAET | 2.126 | 3.195 | 94.107 | | | |
| PIDEA | 9.224 | 6.989 | 28.677 | 43.409 | | |
| PCONC | 1.739 | 1.057 | 11.782 | 17.964 | 21.833 | |
| PEXP | 6.472 | 8.077 | 9.907 | 28.364 | 23.594 | 43.453 |
| PEFF | 1.373 | 5.252 | 19.592 | 11.057 | 12.711 | 20.851 |
| PTRTEX | -2.368 | -4.243 | -5.541 | -4.230 | -.181 | -.821 |
| PSIDE | 1.255 | -.969 | 39.210 | 19.151 | 6.582 | 5.456 |
| PPROG | 1.931 | .578 | 80.878 | 18.080 | 3.819 | -8.004 |

| | PEFF | PTRTEX | PSIDE | PPROG |
|---|---|---|---|---|
| PEFF | 16.143 | | | |
| PTRTEX | -.760 | 11.511 | | |
| PSIDE | 10.856 | -10.023 | 86.585 | |
| PPROG | 8.574 | 1.103 | 28.443 | 108.424 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression

- - - - - - - - - -

Multivariate Tests of Significance (S = 10, M = -1/2, N = 6 1/2)

| Test Name | Value | Approx. F | Hypoth. DF | Error DF | Sig. of F |
|---|---|---|---|---|---|
| Pillais | 3.01273 | 1.03482 | 100.00 | 240.00 | .410 |
| Hotellings | 11.78711 | 1.55590 | 100.00 | 132.00 | .009 |
| Wilks | .00653 | 1.21525 | 100.00 | 119.25 | .153 |
| Roys | .88449 | | | | |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression (CONT.)
Eigenvalues and Canonical Correlations

| Root No. | Eigenvalue | Pct. | Cum. Pct. | Canon Cor. | Sq. Cor |
|---|---|---|---|---|---|
| 1 | 7.658 | 64.966 | 64.966 | .940 | .884 |
| 2 | 1.629 | 13.817 | 78.783 | .787 | .620 |
| 3 | 1.099 | 9.328 | 88.111 | .724 | .524 |
| 4 | .672 | 5.702 | 93.813 | .634 | .402 |
| 5 | .339 | 2.872 | 96.685 | .503 | .253 |
| 6 | .255 | 2.166 | 98.851 | .451 | .203 |
| 7 | .085 | .720 | 99.571 | .280 | .078 |
| 8 | .047 | .396 | 99.967 | .211 | .045 |
| 9 | .003 | .026 | 99.994 | .056 | .003 |
| 10 | .001 | .006 | 100.000 | .028 | .001 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression (CONT.)
Dimension Reduction Analysis

| Roots | Wilks L. | F | Hypoth. DF | Error DF | Sig. of F |
|---|---|---|---|---|---|
| 1 TO 10 | .00653 | 1.21525 | 100.00 | 119.25 | .153 |
| 2 TO 10 | .05658 | .77633 | 81.00 | 112.37 | .886 |
| 3 TO 10 | .14872 | .63956 | 64.00 | 104.54 | .973 |
| 4 TO 10 | .31223 | .50384 | 49.00 | 95.81 | .995 |
| 5 TO 10 | .52207 | .38196 | 36.00 | 86.20 | .999 |
| 6 TO 10 | .69883 | .30705 | 25.00 | 75.80 | .999 |
| 7 TO 10 | .87722 | .17743 | 16.00 | 64.79 | 1.000 |
| 8 TO 10 | .95166 | .12269 | 9.00 | 53.69 | .999 |
| 9 TO 10 | .99614 | .02227 | 4.00 | 46.00 | .999 |
| 10 TO 10 | .99924 | .01831 | 1.00 | 24.00 | .893 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression (CONT.)
Univariate F-tests with (10,24) D. F.

| Variable | Sq. Mul. R | Mul. R | Adj. R-sq. | Hypoth. MS | Error MS |
|---|---|---|---|---|---|
| PREAS | .27839 | .52763 | .00000 | .19408 | .20961 |
| PINF | .16698 | .40863 | .00000 | .81103 | 1.68588 |
| PAET | .09661 | .31083 | .00000 | 1.00645 | 3.92112 |
| PIDEA | .10838 | .32922 | .00000 | .52767 | 1.80871 |
| PCONC | .40019 | .63260 | .15027 | 1.45669 | .90971 |
| PEXP | .21198 | .46042 | .00000 | 1.16894 | 1.81056 |
| PEFF | .17397 | .41709 | .00000 | .33998 | .67263 |
| PTRTEX | .68178 | .82570 | .54918 | 2.46608 | .47961 |
| PSIDE | .53691 | .73274 | .34396 | 10.03869 | 3.60769 |
| PPROG | .27800 | .52726 | .00000 | 4.17478 | 4.51765 |

| Variable | F | Sig. of F |
|---|---|---|
| PREAS | .92590 | .527 |
| PINF | .48107 | .886 |
| PAET | .25667 | .985 |

---

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression (CONT.)
Univariate F-tests with (10,24) D. F. (CONT.)

| Variable | F | Sig. of F |
|---|---|---|
| PIDEA | .29174 | .977 |
| PCONC | 1.60126 | .166 |
| PEXP | .64562 | .761 |
| PEFF | .50545 | .869 |
| PTRTEX | 5.14188 | .000 |
| PSIDE | 2.78258 | .019 |
| PPROG | .92410 | .528 |

---

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Correlations between DEPENDENT and canonical variables (CONT.)

| | Function No. | | | |
|---|---|---|---|---|
| Variable | 7 | 8 | 9 | 10 |
| PIDEA | -.058 | -.331 | .290 | .762 |
| PCONC | -.251 | .203 | .346 | .351 |
| PEXP | -.186 | -.125 | .646 | .377 |
| PEFF | .206 | .187 | .636 | .358 |
| PTRTEX | .082 | .044 | -.201 | -.055 |
| PSIDE | .127 | -.025 | .205 | .202 |
| PPROG | .480 | .143 | -.298 | .448 |

- - - - - - - - - - -

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Variance explained by canonical variables of DEPENDENT variables

| CAN. VAR. | Pct Var DE | Cum Pct DE | Pct Var CO | Cum Pct CO |
|---|---|---|---|---|
| 1 | 13.512 | 13.512 | 11.951 | 11.951 |
| 2 | 11.838 | 25.350 | 7.335 | 19.286 |
| 3 | 3.986 | 29.336 | 2.087 | 21.373 |
| 4 | 9.512 | 38.848 | 3.823 | 25.196 |
| 5 | 7.166 | 46.014 | 1.813 | 27.009 |
| 6 | 6.636 | 52.650 | 1.350 | 28.358 |
| 7 | 8.093 | 60.743 | .633 | 28.991 |
| 8 | 6.280 | 67.023 | .280 | 29.272 |
| 9 | 14.948 | 81.971 | .046 | 29.318 |
| 10 | 18.029 | 100.000 | .014 | 29.332 |

---

* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Correlations between COVARIATES and canonical variables
CAN. VAR.

| Covariate | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DREAS | -.268 | .575 | .311 | -.263 | .053 | .375 |
| DINF | -.083 | .728 | .038 | -.428 | -.136 | .002 |
| DAET | .246 | .380 | -.186 | .081 | -.273 | .650 |
| DIDEA | .058 | .473 | -.348 | .012 | .564 | -.118 |
| DCONC | .254 | .636 | .074 | .005 | -.229 | -.240 |
| DEXP | .267 | -.006 | -.154 | .068 | -.036 | .071 |
| DEFF | .469 | .639 | -.335 | .161 | .015 | .071 |
| DTRTEX | .807 | .021 | .369 | -.173 | .168 | .006 |
| DSIDE | .721 | .078 | -.308 | -.523 | .212 | -.017 |
| DPROG | .275 | .268 | .409 | .400 | .007 | .500 |

| Covariate | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| DREAS | -.404 | -.015 | -.334 | .114 |
| DINF | -.242 | -.056 | .273 | .353 |
| DAET | .088 | -.086 | -.037 | .490 |

---



* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Correlations between COVARIATES and canonical variables (CONT.)
CAN. VAR.

| Covariate | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| DIDEA | -.049 | -.195 | -.044 | .527 |
| DCONC | -.059 | -.247 | -.394 | .443 |
| DEXP | -.590 | -.524 | .134 | .503 |
| DEFF | -.471 | -.061 | .036 | .037 |
| DTRTEX | -.106 | .031 | .083 | .368 |
| DSIDE | .028 | -.156 | .146 | -.116 |
| DPROG | .208 | -.351 | .328 | -.043 |

---

* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Variance explained by canonical variables of the COVARIATES

| CAN. VAR. | Pct Var DE | Cum Pct DE | Pct Var CO | Cum Pct CO |
|---|---|---|---|---|
| 1 | 15.426 | 15.426 | 17.440 | 17.440 |
| 2 | 13.124 | 28.550 | 21.183 | 38.623 |
| 3 | 4.157 | 32.707 | 7.938 | 46.561 |
| 4 | 3.027 | 35.734 | 7.532 | 54.093 |
| 5 | 1.370 | 37.104 | 5.417 | 59.509 |
| 6 | 1.821 | 38.926 | 8.957 | 68.466 |
| 7 | .674 | 39.600 | 8.611 | 77.078 |
| 8 | .240 | 39.839 | 5.365 | 82.443 |
| 9 | .015 | 39.855 | 4.996 | 87.438 |
| 10 | .010 | 39.864 | 12.562 | 100.000 |

Regression analysis for WITHIN CELLS error term

---



* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Regression analysis for WITHIN CELLS error term (CONT.)
Dependent variable .. PREAS

| COVARIATE | B | Beta | Std. Err. | t-Value | Sig. of t |
|---|---|---|---|---|---|
| DREAS | .00638 | .01469 | .105 | .061 | .952 |
| DINF | -.09593 | -.23175 | .108 | -.889 | .383 |
| DAET | -.09801 | -.36348 | .064 | -1.542 | .136 |
| DIDEA | .04556 | .11469 | .088 | .516 | .611 |
| DCONC | .04587 | .10923 | .108 | .425 | .675 |
| DEXP | .01781 | .04747 | .084 | .211 | .835 |
| DEFF | .02763 | .06772 | .108 | .255 | .801 |
| DTRTEX | .12309 | .32624 | .096 | 1.276 | .214 |
| DSIDE | -.05554 | -.19944 | .074 | -.755 | .458 |
| DPROG | .08096 | .33692 | .052 | 1.544 | .136 |

| COVARIATE | Lower -95% | CL- Upper |
|---|---|---|
| DREAS | -.211 | .224 |
| DINF | -.319 | .127 |
| DAET | -.229 | .033 |

---

PATIENT AND DOCTOR RATINGS COMPARED - FRIEDMAN'S NON-PARAMETRIC TEST

```
npar tests friedman=preas dreas
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

------------------------------------------------------------------------------
Page   3                       SPSS/PC+                               10/22/91

                 N        Mean      Std Dev  Minimum  Maximum

PREAS           35       6.829        .453        5        7
DREAS           35       5.971       1.043        3        7
------------------------------------------------------------------------------
Page   4                       SPSS/PC+                               10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.76   PREAS
          1.24   DREAS

          Cases         Chi-Square          D.F.   Significance
            35            9.2571              1          .0023

------------------------------------------------------------------------------
Page   5                       SPSS/PC+                               10/22/91

This procedure was completed at 16:14:55
------------------------------------------------------------------------------
Page   6                       SPSS/PC+                               10/22/91

set listing = 'rf2.doc'.
```

```
npar tests friedman=pinf dinf
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

------------------------------------------------------------------------------
Page   7                            SPSS/PC+                           10/22/91

                N         Mean      Std Dev  Minimum  Maximum

PINF           35        6.571       1.195        1        7
DINF           35        5.543       1.094        2        7
------------------------------------------------------------------------------
Page   8                            SPSS/PC+                           10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.81   PINF
          1.19   DINF

          Cases         Chi-Square           D.F.   Significance
            35            13.8286              1           .0002

------------------------------------------------------------------------------
Page   9                            SPSS/PC+                           10/22/91

This procedure was completed at 16:16:10
------------------------------------------------------------------------------
Page  10                            SPSS/PC+                           10/22/91

set listing = 'rf3.doc'.
```

```
npar tests friedman=paet daet
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

----------------------------------------------------------------------------
Page  11                          SPSS/PC+                          10/22/91

                 N        Mean     Std Dev  Minimum  Maximum

PAET            35       6.229      1.750       1        7
DAET            35       5.057      1.679       2        7
----------------------------------------------------------------------------
Page  12                          SPSS/PC+                          10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.77   PAET
          1.23   DAET

          Cases         Chi-Square           D.F.   Significance
            35            10.3143              1          .0013

----------------------------------------------------------------------------
Page  13                          SPSS/PC+                          10/22/91

This procedure was completed at 16:17:42
----------------------------------------------------------------------------
Page  14                          SPSS/PC+                          10/22/91

set listing = 'rf4.doc'.
```

```
npar tests friedman=pidea didea
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-----------------------------------------------------------------------------
Page  15                        SPSS/PC+                            10/22/91

                 N        Mean      Std Dev  Minimum  Maximum

PIDEA           34       6.265       1.214        3        7
DIDEA           35       5.229       1.140        2        7
-----------------------------------------------------------------------------
Page  16                        SPSS/PC+                            10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.76   PIDEA
          1.24   DIDEA

          Cases         Chi-Square           D.F.   Significance
            34             9.5294             1           .0020

-----------------------------------------------------------------------------
Page  17                        SPSS/PC+                            10/22/91

This procedure was completed at 16:18:44
-----------------------------------------------------------------------------
Page  18                        SPSS/PC+                            10/22/91

set listing = 'rf5.doc'.
```

```
npar tests friedman=pconc dconc
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-------------------------------------------------------------------------------
Page  19                          SPSS/PC+                              10/22/91

                 N         Mean      Std Dev  Minimum  Maximum

PCONC           35        6.600       1.035        2        7
DCONC           35        5.314       1.078        2        7
-------------------------------------------------------------------------------
Page  20                          SPSS/PC+                              10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.84   PCONC
          1.16   DCONC

          Cases          Chi-Square          D.F.   Significance
            35             16.4571             1           .0000

-------------------------------------------------------------------------------
Page  21                          SPSS/PC+                              10/22/91

This procedure was completed at 16:20:19
-------------------------------------------------------------------------------
Page  22                          SPSS/PC+                              10/22/91

set listing = 'rf6.doc'.
```

```
npar tests friedman=pexp dexp
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

--------------------------------------------------------------------------------
Page  23                        SPSS/PC+                              10/22/91

                  N         Mean      Std Dev  Minimum  Maximum

PEXP             34        6.294       1.292        2        7
DEXP             35        5.114       1.207        2        7
--------------------------------------------------------------------------------
Page  24                        SPSS/PC+                              10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.81   PEXP
          1.19   DEXP

          Cases          Chi-Square           D.F.   Significance
            34             12.9706              1           .0003

--------------------------------------------------------------------------------
Page  25                        SPSS/PC+                              10/22/91

This procedure was completed at 16:21:41
--------------------------------------------------------------------------------
Page  26                        SPSS/PC+                              10/22/91

set listing = 'ri7.doc'.
```

```
npar tests friedman=peff deff
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

----------------------------------------------------------------------------
Page  27                        SPSS/PC+                           10/22/91

                N         Mean      Std Dev  Minimum  Maximum

PEFF           35        6.686        .758        4        7
DEFF           35        5.057       1.110        2        7
----------------------------------------------------------------------------
Page  28                        SPSS/PC+                           10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.93   PEFF
          1.07   DEFF

          Cases         Chi-Square           D.F.  Significance
            35           25.7143               1         .0000

----------------------------------------------------------------------------
Page  29                        SPSS/PC+                           10/22/91

This procedure was completed at 16:22:26
----------------------------------------------------------------------------
Page  30                        SPSS/PC+                           10/22/91

set listing = 'rf8.doc .
```

```
npar tests friedman=ptrtex dtrtex
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

--------------------------------------------------------------------------------
Page  31                          SPSS/PC+                                10/22/91

                  N        Mean      Std Dev  Minimum  Maximum

PTRTEX          27        6.481       1.156        2        7
DTRTEX          25        5.040       1.428        1        7
--------------------------------------------------------------------------------
Page  32                          SPSS/PC+                                10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.88   PTRTEX
          1.13   DTRTEX

          Cases         Chi-Square           D.F.   Significance
            24            13.5000              1          .0002

--------------------------------------------------------------------------------
Page  33                          SPSS/PC+                                10/22/91

This procedure was completed at 16:23:47
--------------------------------------------------------------------------------
Page  34              -           SPSS/PC+                                10/22/91

set listing = 'rf9.doc .
```

```
npar tests friedman=pside dside
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-----------------------------------------------------------------------------
Page  35                          SPSS/PC+                          10/22/91

               N         Mean       Std Dev  Minimum  Maximum

PSIDE         23         3.739        2.911        1        7
DSIDE         22         3.091        2.068        1        6
-----------------------------------------------------------------------------
Page  36                          SPSS/PC+                          10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.61   PSIDE
          1.39   DSIDE

          Cases          Chi-Square            D.F.   Significance
            18              .8889                1           .3458

-----------------------------------------------------------------------------
Page  37                          SPSS/PC+                          10/22/91

This procedure was completed at 16:25:01
-----------------------------------------------------------------------------
Page  38                          SPSS/PC+                          10/22/91

set listing = 'rf10.doc'.
```

```
npar tests friedman=pprog dprog
/options=3
/statistics=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-----------------------------------------------------------------------------
Page  39                        SPSS/PC+                            10/22/91

                N         Mean      Std Dev  Minimum  Maximum

PPROG          34        5.765       2.133        1        7
DPROG          34        4.500       1.911        1        7
-----------------------------------------------------------------------------
Page  40                        SPSS/PC+                            10/22/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.77   PPROG
          1.23   DPROG

          Cases          Chi-Square          D.F.   Significance
            33              9.8182             1          .0017

-----------------------------------------------------------------------------
Page  41                        SPSS/PC+                            10/22/91

This procedure was completed at 16:25:54
-----------------------------------------------------------------------------
Page  42                        SPSS/PC+                            10/22/91

FINISH.

End of Include file.
```

CORRELATIONS BETWEEN DOCTOR AND PATIENT RATINGS

```
CORR PREAS DREAS /PINF DINF /PAET DAET /PIDEA DIDEA /PCONC DCONC /PEXP DEXP
/PEFF DEFF /PTRTEX DTRTEX /PSIDE DSIDE /PPROG DPROG
/OPTIONS=2  /STATISTICS=1.
```

Page 3 SPSS/PC+ 9/30/91

| Variable | Cases | Mean | Std Dev |
|---|---|---|---|
| PREAS | 35 | 6.8286 | .4528 |
| DREAS | 35 | 5.9714 | 1.0422 |
| PINF | 35 | 6.5714 | 1.1952 |
| DINF | 35 | 5.5429 | 1.0939 |
| PAET | 35 | 6.2286 | 1.7504 |
| DAET | 35 | 5.0571 | 1.6793 |
| PIDEA | 34 | 6.2647 | 1.2138 |
| DIDEA | [illegible] | 5.2286 | 1.1398 |
| PCONC | 35 | 6.6000 | 1.3347 |
| DCONC | 35 | 5.3143 | 1.0784 |
| PEXP | 34 | 6.2941 | 1.2917 |
| DEXP | [illegible] | 5.1143 | 1.2071 |
| PEFF | 35 | 6.6857 | .7581 |
| DEFF | 35 | 5.0571 | 1.1099 |
| PTRTEX | 27 | 6.4815 | 1.1559 |
| DTRTEX | 35 | 5.0400 | 1.4283 |
| PSIDE | 23 | 3.7391 | 2.9111 |
| DSIDE | 2[illegible] | 3.0909 | 2.0681 |
| PPROG | 34 | 5.7647 | 2.1328 |
| DPROG | 34 | 4.5000 | 1.9139 |

Page 4 SPSS/PC+ 9/30/91

Correlations:

| | PREAS | DREAS |
|---|---|---|
| PREAS | 1.0000 | -.0730 |
| DREAS | -.0730 | 1.0000 |

Minimum pairwise N of cases: 35  1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

Page 5 SPSS/PC+ 9/30/91

Correlations:

| | PINF | DINF |
|---|---|---|
| PINF | 1.0000 | -.1318 |
| DINF | -.1318 | 1.0000 |

Minimum pairwise N of cases: 35  1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

Page 6 SPSS/PC+ 9/30/91

Correlations: PAET DAET

| | PAET | DAET |
|---|---|---|
| PAET | 1.0000 | -.0446 |
| DAET | -.0446 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

Page 7 SPSS/PC+ 9/30/91

Correlations: PIDEA DIDEA

| | PIDEA | DIDEA |
|---|---|---|
| PIDEA | 1.0000 | .1213 |
| DIDEA | .1213 | 1.0000 |

Minimum pairwise N of cases: 34 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

Page 8 SPSS/PC+ 9/30/91

Correlations: PCONC DCONC

| | PCONC | DCONC |
|---|---|---|
| PCONC | 1.0000 | .3796 |
| DCONC | .3796 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

Page 9 SPSS/PC+ 9/30/91

Correlations: PEXP DEXP

| | PEXP | DEXP |
|---|---|---|
| PEXP | 1.0000 | .1461 |
| DEXP | .1461 | 1.0000 |

Minimum pairwise N of cases: 34 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

Page 10 SPSS/PC+ 9/30/91

Correlations: PEFF DEFF

| | PEFF | DEFF |
|---|---|---|
| PEFF | 1.0000 | .2317 |
| DEFF | .2317 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

```
Page  11                      SPSS/PC+                        9/30/91

Correlations:  PTRTEX      DTRTEX

  PTRTEX       1.0000       .6440**
  DTRTEX        .6440**    1.0000

Minimum pairwise N of cases:    24        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
-----------------------------------------------------------------------------
Page  12                      SPSS/PC+                        9/30/91

Correlations:  PSIDE       DSIDE

  PSIDE        1.0000       .8799**
  DSIDE         .8799**    1.0000

Minimum pairwise N of cases:    18        1-tailed Signif:  * - .01  ** - .001

 . " is printed if a coefficient cannot be computed
-----------------------------------------------------------------------------
Page  13                      SPSS/PC+                        9/30/91

Correlations:  PPROG       DPROG

  PPROG        1.0000       .1441
  DPROG         .1441      1.0000

Minimum pairwise N of cases:    33        1-tailed Signif:  * - .01  ** - .001

 . " is printed if a coefficient cannot be computed
-----------------------------------------------------------------------------
Page  14                      SPSS/PC+                        9/30/91

This procedure was completed at 11:54:16

-----------------------------------------------------------------------------
Page  15                      SPSS/PC+                        9/30/91

FINISH.

End of Include file.
```

CORRELATIONS BETWEEN DOCTOR AND PATIENT TASK IMPORTANCE RATINGS

```
SET LISTING = 'RESCORIM.DOC'.
CORR PREASIM DREASIM /PINFIM DINFIM /PAETIM DAETIM /PIDEAIM DIDEAIM
/PEXPIM DEXPIM /PEFFIM DEFFIM /PTRTEXIM DTRTEXIM /PSIDEIM DSIDEIM
/PCONCIM DCONCIM /PPROGIM DPROGIM /PDRUNDIM DDRUNDIM /PPUNDIM DPUNDIM
/OPTIONS=2
/STATISTICS=1.
```
---

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| Variable | Cases | Mean | Std Dev |
|---|---|---|---|
| PREASIM | 35 | 2.8286 | .3824 |
| DREASIM | 35 | 2.2857 | .5186 |
| PINFIM | 35 | 2.9143 | .2840 |
| DINFIM | 35 | 2.2571 | .5054 |
| PAETIM | 35 | 2.7714 | .5470 |
| DAETIM | 35 | 2.3714 | .5470 |
| PIDEAIM | 35 | 2.7714 | .4260 |
| DIDEAIM | 35 | 2.4286 | .5021 |
| PEXPIM | 34 | 2.8529 | .3595 |
| DEXPIM | 35 | 2.2571 | .4434 |
| PEFFIM | 35 | 2.8857 | .3228 |
| DEFFIM | 35 | 2.2000 | .4058 |
| PTRTEXIM | 32 | 2.7500 | .5080 |
| DTRTEXIM | 32 | 2.3125 | .4709 |
| PSIDEIM | 30 | 2.8333 | .4611 |
| DSIDEIM | 30 | 2.2000 | .4068 |
| PCONCIM | 35 | 2.8286 | .3824 |
| DCONCIM | 35 | 2.5429 | .5054 |
| PPROGIM | 34 | 2.7647 | .4960 |
| DPROGIM | 34 | 2.1471 | .5004 |
| PDRUNDIM | 35 | 2.8571 | .3550 |
| DDRUNDIM | 35 | 2.4571 | .5054 |
| PPUNDIM | 35 | 2.8000 | .4058 |
| DPUNDIM | 35 | 2.3429 | .5392 |

---

Correlations: PREASIM DREASIM

| | PREASIM | DREASIM |
|---|---|---|
| PREASIM | 1.0000 | .1059 |
| DREASIM | .1059 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

Correlations: PINFIM DINFIM

| | PINFIM | DINFIM |
|---|---|---|
| PINFIM | 1.0000 | .1580 |
| DINFIM | .1580 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

Correlations: PAETIM DAETIM

| | PAETIM | DAETIM |
|---|---|---|
| PAETIM | 1.0000 | .0955 |
| DAETIM | .0955 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

Correlations: PIDEAIM DIDEAIM

| | PIDEAIM | DIDEAIM |
|---|---|---|
| PIDEAIM | 1.0000 | .0589 |
| DIDEAIM | .0589 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

Correlations: PEXPIM DEXPIM

| | PEXPIM | DEXPIM |
|---|---|---|
| PEXPIM | 1.0000 | .2491 |
| DEXPIM | .2491 | 1.0000 |

Minimum pairwise N of cases: 34 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

```
Correlations:  PEFFIM     DEFFIM

  PEFFIM      1.0000      .1796
  DEFFIM       .1796     1.0000

Minimum pairwise N of cases:    35        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
```

```
Correlations:  PTRTEXIM   DTRTEXIM

  PTRTEXIM    1.0000      .2952
  DTRTEXIM     .2952     1.0000

Minimum pairwise N of cases:    31        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
```

```
Correlations:  PSIDEIM    DSIDEIM

  PSIDEIM     1.0000      .0209
  DSIDEIM      .0209     1.0000

Minimum pairwise N of cases:    27        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
```

```
Correlations:  PCONCIM    DCONCIM

  PCONCIM     1.0000      .1913
  DCONCIM      .1913     1.0000

Minimum pairwise N of cases:    35        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
```

```
Correlations:  PPROGIM    DPROGIM

  PPROGIM     1.0000      .0260
  DPROGIM      .0260     1.0000

Minimum pairwise N of cases:    33        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
```

```
Correlations:  PDRUNDIM   DDRUNDIM

  PDRUNDIM    1.0000     -.1171
  DDRUNDIM    -.1171     1.0000

Minimum pairwise N of cases:    35        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------


Correlations:  PPUNDIM    DPUNDIM

  PPUNDIM     1.0000     -.0806
  DPUNDIM     -.0806     1.0000

Minimum pairwise N of cases:    35        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------


This procedure was completed at 15:36:20
--------------------------------------------------------------------------------
Page 104                        SPSS/PC+                               10/25/91

FINISH.

End of Include file.
```

STATISTICAL ANALYSIS OF DIFFERENCE BETWEEN THE DOCTOR GROUP TASK IMPORTANCE RATINGS AND THE TASK IMPORTANCE RATINGS MADE BY THE PATIENT GROUP - FRIEDMAN'S NON-PARAMETRIC.

```
SET LISTING = 'RFIM.DOC'.
NPAR TESTS FRIEDMAN=PREASIM DREASIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-----------------------------------------------------------------------------



Page  53                          SPSS/PC+                          10/25/91

               N         Mean       Std Dev  Minimum  Maximum

PREASIM        35        2.829        .382        2        3
DREASIM        35        2.286        .519        1        3
-----------------------------------------------------------------------------
Page  54                          SPSS/PC+                          10/25/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.76   PREASIM
          1.24   DREASIM

          Cases         Chi-Square           D.F.   Significance
            35              9.2571             1           .0023

-----------------------------------------------------------------------------



Page  55                          SPSS/PC+                          10/25/91

This procedure was completed at 15:34:20

NPAR TESTS FRIEDMAN=PINFIM DINFIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****
```

```
---------------------------------------------------------------------------
Page  56                         SPSS/PC+                          10/25/91

                 N        Mean     Std Dev  Minimum  Maximum

PINFIM          35       2.914       .284        2        3
DINFIM          35       2.257       .505        1        3
---------------------------------------------------------------------------
Page  57                         SPSS/PC+                          10/25/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.81   PINFIM
          1.19   DINFIM

          Cases          Chi-Square          D.F.   Significance
            35             13.8286             1          .0002

---------------------------------------------------------------------------



Page  58                         SPSS/PC+                          10/25/91

This procedure was completed at 15:34:27


NPAR TESTS FRIEDMAN=PAETIM DAETIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

---------------------------------------------------------------------------
Page  59                         SPSS/PC+                          10/25/91

                 N        Mean     Std Dev  Minimum  Maximum

PAETIM          35       2.771       .547        1        3
DAETIM          35       2.371       .547        1        3
---------------------------------------------------------------------------
Page  60                         SPSS/PC+                          10/25/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.69   PAETIM
          1.31   DAETIM

          Cases          Chi-Square          D.F.   Significance
            35              4.8286             1          .0280
```

```
Page  61                          SPSS/PC+                          10/25/91

This procedure was completed at 15:34:35


NPAR TESTS FRIEDMAN=PIDEAIM DIDEAIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

----------------------------------------------------------------------------
Page  62                          SPSS/PC+                          10/25/91

                 N         Mean      Std Dev  Minimum  Maximum

PIDEAIM         35        2.771        .426        2        3
DIDEAIM         35        2.429        .502        2        3
----------------------------------------------------------------------------
Page  63                          SPSS/PC+                          10/25/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.67   PIDEAIM
          1.33   DIDEAIM

          Cases           Chi-Square           D.F.   Significance
            35              4.1143              1           .0425

----------------------------------------------------------------------------




Page  64                          SPSS/PC+                          10/25/91

This procedure was completed at 15:34:43

NPAR TESTS FRIEDMAN=PEXPIM DEXPIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

----------------------------------------------------------------------------
```

| | N | Mean | Std Dev | Minimum | Maximum |
|---|---|---|---|---|---|
| PEXPIM | 34 | 2.853 | .359 | 2 | 3 |
| DEXPIM | 35 | 2.257 | .443 | 2 | 3 |

---

Page 66 SPSS/PC+ 10/25/91

- - - - - Friedman Two-way ANOVA

| Mean Rank | Variable |
|---|---|
| 1.79 | PEXPIM |
| 1.21 | DEXPIM |

| Cases | Chi-Square | D.F. | Significance |
|---|---|---|---|
| 34 | 11.7647 | 1 | .0006 |

---

Page 67 SPSS/PC+ 10/25/91

This procedure was completed at 15:34:53

```
NPAR TESTS FRIEDMAN=PEFFIM DEFFIM
/OPTIONS=3
/STATISTICS=1.
```

***** WORKSPACE allows for 5906 cases for NPAR TESTS *****

---

Page 68 SPSS/PC+ 10/25/91

| | N | Mean | Std Dev | Minimum | Maximum |
|---|---|---|---|---|---|
| PEFFIM | 35 | 2.886 | .323 | 2 | 3 |
| DEFFIM | 35 | 2.200 | .406 | 2 | 3 |

---

Page 69 SPSS/PC+ 10/25/91

- - - - - Friedman Two-way ANOVA

| Mean Rank | Variable |
|---|---|
| 1.84 | PEFFIM |
| 1.16 | DEFFIM |

| Cases | Chi-Square | D.F. | Significance |
|---|---|---|---|
| 35 | 16.4571 | 1 | .0000 |

---

```
Page  70                          SPSS/PC+                              10/25/91

This procedure was completed at 15:35:00

NPAR TESTS FRIEDMAN=PTRTEXIM DTRTEXIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

--------------------------------------------------------------------------------


Page  71                          SPSS/PC+                              10/25/91

               N         Mean     Std Dev  Minimum  Maximum

PTRTEXIM      32        2.750        .508        1        3
DTRTEXIM      32        2.313        .471        2        3
--------------------------------------------------------------------------------
Page  72                          SPSS/PC+                              10/25/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.74   PTRTEXIM
          1.26   DTRTEXIM

          Cases          Chi-Square          D.F.   Significance
            31              7.2581             1          .0071

--------------------------------------------------------------------------------



Page  73                          SPSS/PC+                              10/25/91

This procedure was completed at 15:35:05

NPAR TESTS FRIEDMAN=PSIDEIM DSIDEIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

--------------------------------------------------------------------------------


Page  74                          SPSS/PC+                              10/25/91

               N         Mean     Std Dev  Minimum  Maximum

PSIDEIM       30        2.833        .461        1        3
DSIDEIM       30        2.200        .407        2        3
--------------------------------------------------------------------------------
```

```
Page  75                          SPSS/PC+                          10/25/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.80   PSIDEIM
          1.20   DSIDEIM

          Cases         Chi-Square           D.F.   Significance
            27            9.4815               1          .0021

---------------------------------------------------------------------------




Page  76                          SPSS/PC+                          10/25/91

This procedure was completed at 15:35:12

NPAR TESTS FRIEDMAN=PCONCIM DCONCIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

---------------------------------------------------------------------------


Page  77                          SPSS/PC+                          10/25/91

                 N         Mean      Std Dev  Minimum  Maximum

PCONCIM         35        2.829        .382        2        3
DCONCIM         35        2.543        .505        2        3
---------------------------------------------------------------------------
Page  78                          SPSS/PC+                          10/25/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.64   PCONCIM
          1.36   DCONCIM

          Cases         Chi-Square           D.F.   Significance
            35            2.8571               1          .0910

---------------------------------------------------------------------------
```

```
This procedure was completed at 15:35:18

NPAR TESTS FRIEDMAN=PPROGIM DPROGIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

------------------------------------------------------------------------------


Page  80                          SPSS/PC+                             10/25/91

                N          Mean      Std Dev  Minimum  Maximum

PPROGIM        34         2.765         .496        1        3
DPROGIM        34         2.147         .500        1        3
------------------------------------------------------------------------------
Page  81                          SPSS/PC+                             10/25/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.77   PPROGIM
          1.23   DPROGIM

          Cases          Chi-Square           D.F.   Significance
            33              9.8182              1           .0017

------------------------------------------------------------------------------



Page  82                          SPSS/PC+                             10/25/91

This procedure was completed at 15:35:27

NPAR TESTS FRIEDMAN=PDRUNDIM DDRUNDIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

------------------------------------------------------------------------------


Page  83                          SPSS/PC+                             10/25/91

                N          Mean      Std Dev  Minimum  Maximum

PDRUNDIM       35         2.857         .355        2        3
DDRUNDIM       35         2.457         .505        2        3
------------------------------------------------------------------------------
Page  84                          SPSS/PC+                             10/25/91
```

```
- - - - - Friedman Two-way ANOVA

     Mean Rank   Variable

          1.70   PDRUNDIM
          1.30   DORUNDIM

          Cases          Chi-Square           D.F.   Significance
            35              5.6000              1          .0180

-----------------------------------------------------------------------------

Page  85                          SPSS/PC+                           10/25/91

This procedure was completed at 15:35:35

NPAR TESTS FRIEDMAN=PPUNDIM DPUNDIM
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-----------------------------------------------------------------------------

Page  86                          SPSS/PC+                           10/25/91

                 N        Mean      Std Dev  Minimum  Maximum

PPUNDIM         35        2.800        .406        2        3
DPUNDIM         35        2.343        .539        1        3
-----------------------------------------------------------------------------
Page  87                          SPSS/PC+                           10/25/91

- - - - - Friedman Two-way ANOVA

     Mean Rank   Variable

          1.71   PPUNDIM
          1.29   DPUNDIM

          Cases          Chi-Square           D.F.   Significance
            35              6.4286              1          .0112

-----------------------------------------------------------------------------
Page  88                          SPSS/PC+                           10/25/91

This procedure was completed at 15:35:42

SET LISTING = 'RESCORIM.DOC'.
```

CANONICAL CORRELATION FOR THE SET OF DOCTOR TASK IMPORTANCE RATINGS AND THE SET OF PATIENT TASK IMPORTANCE RATINGS WITH THE DOCTOR SET AS INDEPENDENT VARIABLES.

```
SET LISTING = 'CANCORIM.DOC'
MANOVA PREASIM PINFIM PAETIM PIDEAIM PCONCIM PEXPIM PEFFIM
       PTRTEXIM PSIDEIM PPROGIM WITH
       DREASIM DINFIM DAETIM DIDEAIM DCONCIM DEXPIM DEFFIM
       DTRTEXIM DSIDEIM DPROGIM
/PRINT=ERROR(SSCP COV COR)
       SIGNIF(HYPOTH STEPDOWN DIMENR EIGEN)
/DISCRIM=RAW,STAN,ESTIM,COR,ALPHA(1.0)
/DESIGN.
 - - - - - - - - - - -

- A full factorial model is generated for this problem. -


        25 cases accepted.
         0 cases rejected because of out-of-range factor values.
        10 cases rejected because of missing data.
         1 non-empty cells.

         1 design will be processed.
--------------------------------------------------------------------------------
Page    3                          SPSS/PC+                              10/25/91
```

* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Adjusted WITHIN CELLS Correlations with Std. Devs. on Diagonal

| | PREASIM | PINFIM | PAETIM | PIDEAIM | PCONCIM | PEXPIM |
|---|---|---|---|---|---|---|
| PREASIM | .433 | | | | | |
| PINFIM | .719 | .255 | | | | |
| PAETIM | -.031 | .267 | .670 | | | |
| PIDEAIM | .104 | .390 | .848 | .372 | | |
| PCONCIM | .340 | .681 | .527 | .384 | .361 | |
| PEXPIM | .084 | .322 | .505 | .734 | .157 | .386 |
| PEFFIM | .032 | .373 | .708 | .829 | .325 | .897 |
| PTRTEXIM | -.005 | .332 | .865 | .729 | .503 | .485 |
| PSIDEIM | -.303 | -.096 | .778 | .733 | .065 | .707 |
| PPROGIM | -.163 | .040 | .838 | .818 | .205 | .523 |

| | PEFFIM | PTRTEXIM | PSIDEIM | PPROGIM |
|---|---|---|---|---|
| PEFFIM | .326 | | | |
| PTRTEXIM | .760 | .588 | | |
| PSIDEIM | .783 | .686 | .556 | |
| PPROGIM | .642 | .687 | .877 | .631 |

* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Statistics for ADJUSTED WITHIN CELLS correlations

Determinant = .00000
Bartlett test of sphericity = 142.21326 with 45 D. F.
Significance = .000

F(max) criterion = 6.88089 with (10,14) D. F.

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Adjusted WITHIN CELLS Variances and Covariances

| | PREASIM | PINFIM | PAETIM | PIDEAIM | PCONCIM | PEXPIM |
|---|---|---|---|---|---|---|
| PREASIM | .187 | | | | | |
| PINFIM | .079 | .065 | | | | |
| PAETIM | -.009 | .046 | .449 | | | |
| PIDEAIM | .017 | .037 | .211 | .138 | | |
| PCONCIM | .053 | .063 | .128 | .052 | .131 | |
| PEXPIM | .014 | .032 | .131 | .105 | .022 | .149 |
| PEFFIM | .004 | .031 | .155 | .100 | .038 | .113 |
| PTRTEXIM | -.001 | .050 | .341 | .160 | .107 | .110 |
| PSIDEIM | -.073 | -.014 | .290 | .152 | .013 | .152 |
| PPROGIM | -.045 | .006 | .355 | .192 | .047 | .127 |

| | PEFFIM | PTRTEXIM | PSIDEIM | PPROGIM |
|---|---|---|---|---|
| PEFFIM | .106 | | | |
| PTRTEXIM | .146 | .346 | | |
| PSIDEIM | .142 | .224 | .310 | |
| PPROGIM | .132 | .255 | .308 | .398 |

* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Adjusted WITHIN CELLS Sum-of-Squares and Cross-Products

| | PREASIM | PINFIM | PAETIM | PIDEAIM | PCONCIM | PEXPIM |
|---|---|---|---|---|---|---|
| PREASIM | 2.623 | | | | | |
| PINFIM | 1.113 | .914 | | | | |
| PAETIM | -.128 | .640 | 6.288 | | | |
| PIDEAIM | .235 | .519 | 2.958 | 1.935 | | |
| PCONCIM | .745 | .880 | 1.787 | .723 | 1.828 | |
| PEXPIM | .197 | .444 | 1.828 | 1.474 | .307 | 2.086 |
| PEFFIM | .062 | .435 | 2.165 | 1.405 | .536 | 1.579 |
| PTRTEXIM | -.019 | .699 | 4.773 | 2.233 | 1.498 | 1.542 |
| PSIDEIM | -1.023 | -.191 | 4.061 | 2.124 | .182 | 2.127 |
| PPROGIM | -.624 | .089 | 4.963 | 2.686 | .653 | 1.784 |

| | PEFFIM | PTRTEXIM | PSIDEIM | PPROGIM |
|---|---|---|---|---|
| PEFFIM | 1.486 | | | |
| PTRTEXIM | 2.040 | 4.847 | | |
| PSIDEIM | 1.986 | 3.142 | 4.335 | |
| PPROGIM | 1.847 | 3.569 | 4.312 | 5.573 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression
Adjusted Hypothesis Sum-of-Squares and Cross-Products

Multivariate Tests of Significance (S = 10, M = -1/2, N = 1 1/2)

| Test Name | Value | Approx. F | Hypoth. DF | Error DF | Sig. of F |
|---|---|---|---|---|---|
| Pillais | 4.15979 | .99717 | 100.00 | 140.00 | .502 |
| Hotellings | 46.27025 | 1.48065 | 100.00 | 32.00 | .103 |
| Wilks | .00007 | 1.35068 | 100.00 | 47.66 | .125 |
| Roys | .96475 | | | | |

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EFFECT .. WITHIN CELLS Regression (CONT.)
Eigenvalues and Canonical Correlations

| Root No. | Eigenvalue | Pct. | Cum. Pct. | Canon Cor. | Sq. Cor |
|---|---|---|---|---|---|
| 1 | 27.367 | 59.147 | 59.147 | .982 | .965 |
| 2 | 11.212 | 24.231 | 83.378 | .958 | .918 |
| 3 | 4.049 | 8.751 | 92.129 | .896 | .802 |
| 4 | 2.621 | 5.663 | 97.793 | .851 | .724 |
| 5 | .572 | 1.237 | 99.030 | .603 | .364 |
| 6 | .214 | .462 | 99.491 | .420 | .176 |
| 7 | .145 | .313 | 99.804 | .356 | .126 |
| 8 | .079 | .170 | 99.974 | .270 | .073 |
| 9 | .010 | .023 | 99.997 | .102 | .010 |
| 10 | .001 | .003 | 100.000 | .037 | .001 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression (CONT.)
Dimension Reduction Analysis

| Roots | Wilks L. | F | Hypoth. DF | Error DF | Sig. of F |
|---|---|---|---|---|---|
| 1 TO 10 | .00007 | 1.35068 | 100.00 | 47.66 | .125 |
| 2 TO 10 | .00188 | .96751 | 81.00 | 47.74 | .560 |
| 3 TO 10 | .02294 | .67669 | 64.00 | 46.87 | .927 |
| 4 TO 10 | .11584 | .48617 | 49.00 | 45.04 | .993 |
| 5 TO 10 | .41941 | .25699 | 36.00 | 42.28 | 1.000 |
| 6 TO 10 | .65940 | .18339 | 25.00 | 38.65 | 1.000 |
| 7 TO 10 | .80029 | .16190 | 16.00 | 34.24 | 1.000 |
| 8 TO 10 | .91615 | .11951 | 9.00 | 29.36 | .999 |
| 9 TO 10 | .98832 | .03831 | 4.00 | 26.00 | .997 |
| 10 TO 10 | .99864 | .01906 | 1.00 | 14.00 | .892 |



* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression (CONT.)
Univariate F-tests with (10,14) D. F.

| Variable | Sq. Mul. R | Mul. R | Adj. R-sq. | Hypoth. MS | Error MS |
|---|---|---|---|---|---|
| PREASIM | .34418 | .58667 | .00000 | .13767 | .18738 |
| PINFIM | .65385 | .80861 | .40660 | .17262 | .06527 |
| PAETIM | .30442 | .55174 | .00000 | .27519 | .44915 |
| PIDEAIM | .57574 | .75878 | .27270 | .26254 | .13819 |
| PCONCIM | .30770 | .55471 | .00000 | .08123 | .13055 |
| PEXPIM | .20974 | .45798 | .00000 | .05537 | .14902 |
| PEFFIM | .19266 | .43893 | .00000 | .03545 | .10611 |
| PTRTEXIM | .26111 | .51099 | .00000 | .17129 | .34622 |
| PSIDEIM | .27743 | .52672 | .00000 | .16646 | .30967 |
| PPROGIM | .20842 | .45653 | .00000 | .14673 | .39805 |

| Variable | F | Sig. of F |
|---|---|---|
| PREASIM | .73474 | .683 |
| PINFIM | 2.64446 | .047 |
| PAETIM | .61271 | .780 |

* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression (CONT.)
Univariate F-tests with (10,14) D. F. (CONT.)

| Variable | F | Sig. of F |
|---|---|---|
| PIDEAIM | 1.89989 | .132 |
| PCONCIM | .62224 | .772 |
| PEXPIM | .37158 | .940 |
| PEFFIM | .33409 | .956 |
| PTRTEXIM | .49475 | .867 |
| PSIDEIM | .53753 | .837 |
| PPROGIM | .36862 | .941 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Raw canonical coefficients for DEPENDENT variables
Function No.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| PREASIM | .070 | -.092 | -.048 | 1.844 | 1.418 | -1.301 |
| PINFIM | -.690 | 2.816 | .463 | -3.993 | -.823 | -.335 |
| PAETIM | 1.307 | -.124 | -2.476 | -1.565 | .709 | -.709 |
| PIDEAIM | -2.989 | .126 | -.417 | 2.024 | -2.084 | 1.053 |
| PCONCIM | -.548 | -.395 | 1.071 | 1.661 | 1.977 | 4.091 |
| PEXPIM | .640 | -2.504 | .240 | -3.862 | 3.601 | -2.287 |
| PEFFIM | 2.773 | 1.182 | -.161 | 4.132 | -5.287 | 1.906 |
| PTRTEXIM | -.551 | -.906 | 1.254 | -.335 | .701 | -1.549 |
| PSIDEIM | -2.296 | 2.213 | -.016 | 2.255 | 1.787 | 1.322 |
| PPROGIM | 1.359 | -.623 | 1.506 | -1.142 | -.340 | -1.192 |

| Variable | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| PREASIM | .249 | 1.409 | 2.119 | -.076 |
| PINFIM | -2.128 | -1.776 | -.587 | .071 |
| PAETIM | -.918 | .792 | -.241 | -1.101 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Raw canonical coefficients for DEPENDENT variables (CONT.)
Function No.

| Variable | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| PIDEAIM | 1.694 | .891 | -.355 | -.916 |
| PCONCIM | 1.987 | -.194 | -.088 | .639 |
| PEXPIM | .110 | -2.350 | 1.681 | .587 |
| PEFFIM | 1.869 | 2.008 | -2.590 | -7.121 |
| PTRTEXIM | -2.908 | -.029 | -.364 | 1.152 |
| PSIDEIM | -.561 | -3.417 | .769 | 3.058 |
| PPROGIM | 2.197 | 2.114 | -.911 | .447 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Standardized canonical coefficients for DEPENDENT variables
Function No.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| PREASIM | .028 | -.037 | -.020 | .753 | .579 | -.531 |
| PINFIM | -.229 | .934 | .154 | -1.324 | -.273 | -.111 |
| PAETIM | .802 | -.076 | -1.519 | -.960 | .435 | -.435 |
| PIDEAIM | -1.303 | .055 | -.182 | .882 | -.908 | .459 |
| PCONCIM | -.182 | -.131 | .355 | .551 | .656 | 1.357 |
| PEXPIM | .212 | -.830 | .079 | -1.281 | 1.194 | -.758 |
| PEFFIM | .768 | .327 | -.045 | 1.144 | -1.464 | .528 |
| PTRTEXIM | -.288 | -.474 | .655 | -.175 | .366 | -.810 |
| PSIDEIM | -1.148 | 1.106 | -.008 | 1.128 | .894 | .661 |
| PPROGIM | .736 | -.337 | .816 | -.619 | -.184 | -.646 |

| Variable | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| PREASIM | .101 | .575 | .865 | -.031 |
| PINFIM | -.706 | -.589 | -.195 | .024 |
| PAETIM | -.564 | .486 | -.148 | -.676 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Standardized canonical coefficients for DEPENDENT variables (CONT.)
Function No.

| Variable | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| PIDEAIM | .738 | .388 | -.155 | -.399 |
| PCONCIM | .659 | -.064 | -.029 | .212 |
| PEXPIM | .037 | -.779 | .558 | .195 |
| PEFFIM | .517 | .556 | -.717 | -1.972 |
| PTRTEXIM | -1.520 | -.015 | -.190 | .602 |
| PSIDEIM | -.280 | -1.708 | .384 | 1.529 |
| PPROGIM | 1.190 | 1.145 | -.493 | .242 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Correlations between DEPENDENT and canonical variables
Function No.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| PREASIM | -.149 | .456 | .256 | .079 | .393 | -.162 |
| PINFIM | -.301 | .613 | .356 | -.352 | .268 | .047 |
| PAETIM | -.168 | .208 | -.377 | .023 | .552 | -.172 |
| PIDEAIM | -.738 | .005 | -.091 | -.023 | .260 | -.247 |
| PCONCIM | -.197 | .092 | .285 | -.112 | .619 | .483 |
| PEXPIM | -.253 | -.138 | .136 | -.033 | .432 | -.360 |
| PEFFIM | -.010 | .209 | .208 | .245 | .374 | -.293 |
| PTRTEXIM | -.302 | -.043 | .251 | .165 | .458 | -.229 |
| PSIDEIM | -.088 | .336 | -.097 | .275 | .415 | -.391 |
| PPROGIM | -.073 | .307 | .113 | .042 | .391 | -.399 |

| Variable | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| PREASIM | -.038 | .388 | .489 | -.355 |
| PINFIM | -.071 | .189 | .069 | -.404 |
| PAETIM | .031 | .182 | -.620 | -.180 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Correlations between DEPENDENT and canonical variables (CONT.)
Function No.

| Variable | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| PIDEAIM | .214 | .108 | -.392 | -.327 |
| PCONCIM | -.066 | .307 | -.211 | -.317 |
| PEXPIM | .281 | -.418 | -.250 | -.514 |
| PEFFIM | .088 | -.241 | -.499 | -.558 |
| PTRTEXIM | -.287 | .116 | -.629 | -.250 |
| PSIDEIM | .213 | -.254 | -.599 | -.027 |
| PPROGIM | .356 | .135 | -.655 | .017 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Variance explained by canonical variables of DEPENDENT variables

| CAN. VAR. | Pct Var DE | Cum Pct DE | Pct Var CO | Cum Pct CO |
|---|---|---|---|---|
| 1 | 8.921 | 8.921 | 8.606 | 8.606 |
| 2 | 9.083 | 18.004 | 8.339 | 16.946 |
| 3 | 5.712 | 23.716 | 4.581 | 21.526 |
| 4 | 3.098 | 26.814 | 2.242 | 23.768 |
| 5 | 18.425 | 45.238 | 6.706 | 30.474 |
| 6 | 9.318 | 54.557 | 1.641 | 32.115 |
| 7 | 3.992 | 58.548 | .505 | 32.619 |
| 8 | 6.537 | 65.085 | .477 | 33.097 |
| 9 | 23.220 | 88.305 | .240 | 33.337 |
| 10 | 11.695 | 100.000 | .016 | 33.353 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Raw canonical coefficients for COVARIATES
Function No.

| COVARIATE | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DREASIM | -1.076 | -.026 | 1.235 | .515 | -.626 | -.429 |
| DINFIM | 1.500 | .324 | -.292 | .650 | 1.811 | -.073 |
| DAETIM | -.109 | 1.587 | .112 | .572 | -.486 | -1.179 |
| DIDEAIM | .985 | -1.725 | -1.530 | 1.660 | -.464 | -.006 |
| DCONCIM | .007 | .227 | .306 | -2.076 | .892 | -1.188 |
| DEXPIM | -2.425 | .574 | .717 | -.227 | -.530 | -.363 |
| DEFFIM | 2.064 | .419 | -.786 | .358 | -.312 | 1.060 |
| DTRTEXIM | -1.230 | .917 | -1.438 | 1.259 | 1.890 | .455 |
| DSIDEIM | .949 | -1.580 | 2.574 | -.722 | -.227 | -.173 |
| DPROGIM | .175 | -1.520 | -.239 | 1.029 | .975 | -.515 |

| COVARIATE | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| DREASIM | -2.106 | -.732 | -.860 | .788 |
| DINFIM | -.313 | 1.264 | 1.567 | -1.453 |
| DAETIM | .354 | .312 | -.340 | -.786 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Raw canonical coefficients for COVARIATES (CONT.)
Function No.

| COVARIATE | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| DIDEAIM | -.138 | 1.054 | .769 | .127 |
| DCONCIM | -.711 | -.642 | -1.078 | -.518 |
| DEXPIM | .378 | .580 | -.118 | 2.884 |
| DEFFIM | 1.156 | -.390 | -.826 | 1.201 |
| DTRTEXIM | -1.097 | .097 | -.361 | -1.027 |
| DSIDEIM | 1.604 | -.586 | -.974 | .139 |
| DPROGIM | 1.165 | -1.017 | 2.184 | -.333 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Standardized canonical coefficients for COVARIATES
CAN. VAR.

| COVARIATE | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DREASIM | -.493 | -.012 | .566 | .236 | -.287 | -.197 |
| DINFIM | .687 | .148 | -.134 | .298 | .830 | -.034 |
| DAETIM | -.053 | .778 | .055 | .280 | -.238 | -.578 |
| DIDEAIM | .482 | -.845 | -.750 | .813 | -.227 | -.003 |
| DCONCIM | .004 | .116 | .156 | -1.059 | .455 | -.606 |
| DEXPIM | -.907 | .215 | .268 | -.085 | -.198 | -.136 |
| DEFFIM | .900 | .183 | -.343 | .156 | -.136 | .462 |
| DTRTEXIM | -.564 | .420 | -.659 | .577 | .866 | .209 |
| DSIDEIM | .413 | -.689 | 1.122 | -.315 | -.099 | -.075 |
| DPROGIM | .071 | -.620 | -.098 | .420 | .398 | -.210 |

| COVARIATE | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| DREASIM | -.965 | -.336 | -.394 | .361 |
| DINFIM | -.143 | .579 | .718 | -.666 |
| DAETIM | .174 | .153 | -.166 | -.385 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Standardized canonical coefficients for COVARIATES (CONT.)
CAN. VAR.

| COVARIATE | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| DIDEAIM | -.068 | .516 | .377 | .062 |
| DCONCIM | -.363 | -.327 | -.550 | -.264 |
| DEXPIM | .141 | .217 | -.044 | 1.079 |
| DEFFIM | .504 | -.170 | -.360 | .524 |
| DTRTEXIM | -.503 | .045 | -.165 | -.471 |
| DSIDEIM | .699 | -.255 | -.425 | .061 |
| DPROGIM | .476 | -.415 | .892 | -.136 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Correlations between COVARIATES and canonical variables
CAN. VAR.

| Covariate | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DREASIM | .270 | .085 | .357 | .397 | .010 | -.177 |
| DINFIM | .409 | .235 | .410 | .056 | .453 | -.057 |
| DAETIM | .052 | .356 | .002 | .407 | -.200 | -.714 |
| DIDEAIM | .081 | -.515 | -.344 | .201 | -.031 | -.490 |
| DCONCIM | .183 | -.149 | -.322 | -.331 | .350 | -.687 |
| DEXPIM | -.181 | .052 | .058 | .028 | .414 | -.338 |
| DEFFIM | .539 | .302 | -.140 | .223 | .264 | -.054 |
| DTRTEXIM | -.327 | -.125 | -.112 | .392 | .553 | .130 |
| DSIDEIM | -.045 | -.351 | .444 | .277 | .314 | -.009 |
| DPROGIM | .005 | -.026 | -.088 | .213 | .210 | -.401 |

| Covariate | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| DREASIM | -.619 | -.367 | .047 | .289 |
| DINFIM | -.264 | .422 | .307 | .238 |
| DAETIM | .290 | .011 | -.203 | -.171 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Correlations between COVARIATES and canonical variables (CONT.)
CAN. VAR.

| Covariate | 7 | 8 | 9 | 10 |
|---|---|---|---|---|
| DIDEAIM | -.040 | .430 | -.361 | .109 |
| DCONCIM | -.111 | -.069 | -.254 | .233 |
| DEXPIM | .188 | .431 | -.018 | .674 |
| DEFFIM | .037 | -.369 | -.192 | .549 |
| DTRTEXIM | .188 | .028 | -.581 | -.127 |
| DSIDEIM | .346 | .270 | -.542 | -.121 |
| DPROGIM | .166 | -.718 | .409 | .176 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Variance explained by canonical variables of the COVARIATES

| CAN. VAR. | Pct Var DE | Cum Pct DE | Pct Var CO | Cum Pct CO |
|---|---|---|---|---|
| 1 | 6.894 | 6.894 | 7.146 | 7.146 |
| 2 | 6.518 | 13.412 | 7.099 | 14.245 |
| 3 | 6.085 | 19.497 | 7.588 | 21.833 |
| 4 | 5.819 | 25.316 | 8.039 | 29.872 |
| 5 | 3.850 | 29.166 | 10.579 | 40.451 |
| 6 | 2.733 | 31.899 | 15.523 | 55.974 |
| 7 | .974 | 32.872 | 7.698 | 63.673 |
| 8 | 1.032 | 33.904 | 14.128 | 77.801 |
| 9 | .121 | 34.025 | 11.676 | 89.477 |
| 10 | .014 | 34.039 | 10.523 | 100.000 |

Regression analysis for WITHIN CELLS error term

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Regression analysis for WITHIN CELLS error term (CONT.)
Dependent variable .. PREASIM

| COVARIATE | B | Beta | Std. Err. | t-Value | Sig. of t |
|---|---|---|---|---|---|
| DREASIM | .09909 | .11122 | .277 | .357 | .726 |
| DINFIM | .23149 | .25985 | .311 | .744 | .469 |
| DAETIM | .31055 | .37266 | .206 | 1.505 | .155 |
| DIDEAIM | -.44806 | -.53767 | .293 | -1.529 | .148 |
| DCONCIM | .08804 | .10997 | .265 | .332 | .745 |
| DEXPIM | .27159 | .24892 | .353 | .769 | .455 |
| DEFFIM | -.21768 | -.23242 | .280 | -.778 | .449 |
| DTRTEXIM | .31569 | .35436 | .308 | 1.024 | .323 |
| DSIDEIM | -.18949 | -.20232 | .337 | -.563 | .582 |
| DPROGIM | -.17098 | -.17098 | .305 | -.560 | .584 |

| COVARIATE | Lower -95% | CL- Upper |
|---|---|---|
| DREASIM | -.496 | .694 |
| DINFIM | -.436 | .899 |
| DAETIM | -.132 | .753 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Regression analysis for WITHIN CELLS error term (CONT.)
Dependent variable .. PREASIM
(CONT.)

| COVARIATE | Lower -95% | CL- Upper |
|---|---|---|
| DIDEAIM | -1.076 | .180 |
| DCONCIM | -.481 | .657 |
| DEXPIM | -.486 | 1.030 |
| DEFFIM | -.817 | .382 |
| DTRTEXIM | -.346 | .977 |
| DSIDEIM | -.911 | .532 |
| DPROGIM | -.826 | .484 |

Dependent variable .. PINFIM

| COVARIATE | B | Beta | Std. Err. | t-Value | Sig. of t |
|---|---|---|---|---|---|
| DREASIM | .14286 | .19739 | .164 | .872 | .398 |
| DINFIM | -.04793 | -.06622 | .184 | -.261 | .798 |
| DAETIM | .24665 | .36432 | .122 | 2.025 | .062 |
| DIDEAIM | -.76408 | -1.12862 | .173 | -4.419 | .001 |
| DCONCIM | .31724 | .48772 | .157 | 2.026 | .062 |
| DEXPIM | .40906 | .46148 | .209 | 1.961 | .070 |

CANONICAL CORRELATION BETWEEN DOCTOR OUTCOME RATINGS AND PATIENT OUTCOME RATINGS

WITH DOCTOR RATINGS AS THE INDEPENDENT VARIABLES.

```
MANOVA PCONCBEF PCONCAFT PTRTAP PTRTINT PPUND PDRUND
       PSERIOUS PRELATE PSAT  WITH
       DCONCBEF DCONCAFT DTRTAP DTRTINT DPUND DDRUND
       DSERIOUS DRELATE DSAT
/PRINT=ERROR(SSCP COV COR)
       SIGNIF(HYPOTH STEPDOWN DIMENR EIGEN)
/DISCRIM=RAW,STAN,ESTIM,COR,ALPHA(1.0)
/DESIGN.

        28 cases accepted.
         0 cases rejected because of out-of-range factor values.
         7 cases rejected because of missing oata.
         1 non-empty cells.

         1 design will be processed.
```

- - - - - - - - - -

Adjusted WITHIN CELLS Correlations with Std. Devs. on Diagonal

| | PCONCBEF | PCONCAFT | PTRTAP | PTRTINT | PPUND | PDRUND |
|---|---|---|---|---|---|---|
| PCONCBEF | 1.805 | | | | | |
| PCONCAFT | .367 | 1.203 | | | | |
| PTRTAP | .094 | -.211 | 1.149 | | | |
| PTRTINT | -.208 | -.044 | .632 | .214 | | |
| PPUND | -.044 | .100 | .586 | .280 | .961 | |
| PDRUND | .431 | .185 | .422 | .311 | -.027 | 1.024 |
| PSERIOUS | -.006 | -.113 | .527 | .423 | .381 | .135 |
| PRELATE | .035 | -.047 | .804 | .606 | .501 | .580 |
| PSAT | .078 | -.418 | .891 | .413 | .463 | .420 |

| | PSERIOUS | PRELATE | PSAT |
|---|---|---|---|
| PSERIOUS | .611 | | |
| PRELATE | .307 | .830 | |
| PSAT | .403 | .825 | .968 |

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---

* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Statistics for ADJUSTED WITHIN CELLS correlations

Determinant = .00059
Bartlett test of sphericity = 105.38292 with 36 D. F.
Significance = .000

F(max) criterion = 70.92186 with (9,18) D. F.

\- - - - - - - - - -

Adjusted WITHIN CELLS Variances and Covariances

| | PCONCBEF | PCONCAFT | PTRTAP | PTRTINT | PPUND | PDRUND |
|---|---|---|---|---|---|---|
| PCONCBEF | 3.257 | | | | | |
| PCONCAFT | .796 | 1.448 | | | | |
| PTRTAP | .196 | -.291 | 1.320 | | | |
| PTRTINT | -.080 | -.011 | .156 | .046 | | |
| PPUND | -.076 | .115 | .647 | .058 | .923 | |
| PDRUND | .797 | .228 | .497 | .068 | -.027 | 1.049 |
| PSERIOUS | -.007 | -.083 | .370 | .055 | .224 | .085 |
| PRELATE | .053 | -.047 | .768 | .108 | .400 | .494 |
| PSAT | .136 | -.487 | .990 | .086 | .431 | .416 |

| | PSERIOUS | PRELATE | PSAT |
|---|---|---|---|
| PSERIOUS | .374 | | |
| PRELATE | .156 | .690 | |
| PSAT | .239 | .663 | .937 |

---

* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Adjusted WITHIN CELLS Sum-of-Squares and Cross-Products

| | PCONCBEF | PCONCAFT | PTRTAP | PTRTINT | PPUND | PDRUND |
|---|---|---|---|---|---|---|
| PCONCBEF | 58.632 | | | | | |
| PCONCAFT | 14.326 | 26.057 | | | | |
| PTRTAP | 3.526 | -5.247 | 23.761 | | | |
| PTRTINT | -1.449 | -.202 | 2.802 | .827 | | |
| PPUND | -1.368 | 2.073 | 11.650 | 1.039 | 16.613 | |
| PDRUND | 14.350 | 4.102 | 8.948 | 1.229 | -.482 | 18.882 |
| PSERIOUS | -.124 | -1.498 | 6.657 | .998 | 4.028 | 1.523 |
| PRELATE | .954 | -.839 | 13.815 | 1.942 | 7.199 | 8.884 |
| PSAT | 2.450 | -8.773 | 17.828 | 1.542 | 7.755 | 7.488 |

| | PSERIOUS | PRELATE | PSAT |
|---|---|---|---|
| PSERIOUS | 6.727 | | |
| PRELATE | 2.802 | 12.413 | |
| PSAT | 4.297 | 11.931 | 16.867 |

---

* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression
Adjusted Hypothesis Sum-of-Squares and Cross-Products

| | PCONCBEF | PCONCAFT | PTRTAP | PTRTINT | PPUND | PDRUND |
|---|---|---|---|---|---|---|
| PCONCBEF | 80.368 | | | | | |
| PCONCAFT | 20.674 | 19.371 | | | | |
| PTRTAP | 6.474 | -.039 | 11.096 | | | |
| PTRTINT | 1.449 | -.083 | 2.055 | 1.030 | | |
| PPUND | -5.132 | -4.216 | .779 | .890 | 4.352 | |
| PDRUND | 1.650 | -1.244 | 2.481 | 1.199 | 2.196 | 4.832 |
| PSERIOUS | 4.124 | 1.355 | 3.772 | 1.431 | .686 | .191 |
| PRELATE | 3.046 | -2.304 | 7.613 | 1.486 | -.485 | 2.830 |
| PSAT | -5.450 | -11.942 | 7.315 | 1.601 | 1.816 | 4.083 |

| | PSERIOUS | PRELATE | PSAT |
|---|---|---|---|
| PSERIOUS | 2.988 | | |
| PRELATE | 1.912 | 7.301 | |
| PSAT | 1.274 | 8.640 | 15.990 |

---



* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. WITHIN CELLS Regression (CONT.)
Multivariate Tests of Significance (S = 9, M = -1/2, N = 4 )

| Test Name | Value | Approx. F | Hypoth. DF | Error DF | Sig. of F |
|---|---|---|---|---|---|
| Pillais | 3.45056 | 1.24357 | 81.00 | 162.00 | .122 |
| Hotellings | 18.12819 | 1.84017 | 81.00 | 74.00 | .004 |
| Wilks | .00166 | 1.53736 | 81.00 | 73.59 | .031 |
| Roys | .91769 | | | | |

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Eigenvalues and Canonical Correlations

| Root No. | Eigenvalue | Pct. | Cum. Pct. | Canon Cor. | Sq. Cor |
|---|---|---|---|---|---|
| 1 | 11.149 | 61.501 | 61.501 | .958 | .918 |
| 2 | 3.169 | 17.482 | 78.982 | .872 | .760 |
| 3 | 2.148 | 11.848 | 90.830 | .826 | .682 |
| 4 | .855 | 4.717 | 95.547 | .679 | .461 |
| 5 | .375 | 2.069 | 97.616 | .522 | .273 |
| 6 | .263 | 1.453 | 99.068 | .457 | .208 |
| 7 | .153 | .846 | 99.915 | .365 | .133 |
| 8 | .014 | .075 | 99.990 | .116 | .013 |
| 9 | .002 | .010 | 100.000 | .043 | .002 |

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Dimension Reduction Analysis

| Roots | Wilks L. | F | Hypoth. DF | Error DF | Sig. of F |
|---|---|---|---|---|---|
| 1 TO 9 | .00166 | 1.53736 | 81.00 | 73.59 | .031 |
| 2 TO 9 | .02019 | 1.05695 | 64.00 | 69.94 | .409 |
| 3 TO 9 | .08417 | .83780 | 49.00 | 65.34 | .740 |
| 4 TO 9 | .26494 | .58718 | 36.00 | 59.85 | .956 |
| 5 TO 9 | .49148 | .45102 | 25.00 | 53.51 | .984 |
| 6 TO 9 | .67578 | .39745 | 16.00 | 46.46 | .977 |
| 7 TO 9 | .85375 | .29154 | 9.00 | 39.09 | .973 |
| 8 TO 9 | .98476 | .06551 | 4.00 | 34.00 | .992 |
| 9 TO 9 | .99813 | .03371 | 1.00 | 18.00 | .856 |

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Raw canonical coefficients for DEPENDENT variables
Function No.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| PCONCBEF | .038 | .383 | .157 | .371 | -.062 | -.023 |
| PCONCAFT | -.185 | -.028 | -.503 | -.564 | .926 | .413 |
| PTRTAP | 1.030 | -.512 | .253 | -.377 | -.799 | .299 |
| PTRTINT | -2.662 | 2.686 | 1.419 | -2.086 | .232 | .395 |
| PPUND | -.348 | -.187 | .732 | .376 | -.234 | .024 |
| PDRUND | -.240 | -.523 | .503 | -.035 | -.099 | .664 |
| PSERIOUS | .131 | .236 | -.117 | -.387 | .377 | -1.142 |
| PRELATE | 1.042 | .476 | -.395 | .580 | -.864 | -.155 |
| PSAT | -1.512 | .229 | -1.219 | -.252 | 1.187 | .190 |

| Variable | 7 | 8 | 9 |
|---|---|---|---|
| PCONCBEF | .015 | -.007 | -.023 |
| PCONCAFT | -.688 | -.277 | -.139 |
| PTRTAP | -.917 | -.541 | .741 |
| PTRTINT | .901 | -3.135 | .913 |
| PPUND | -.118 | .051 | -.983 |
| PDRUND | .041 | .818 | .470 |
| PSERIOUS | -.018 | 1.935 | -.229 |
| PRELATE | 2.258 | .892 | -1.530 |
| PSAT | -1.466 | -.494 | .294 |

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Standardized canonical coefficients for DEPENDENT variables
Function No.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| PCONCBEF | .087 | .870 | .355 | .842 | -.142 | -.052 |
| PCONCAFT | -.240 | -.036 | -.652 | -.731 | 1.201 | .535 |
| PTRTAP | 1.170 | -.582 | .288 | -.428 | -.908 | .340 |
| PTRTINT | -.698 | .704 | .372 | -.547 | .061 | .104 |
| PPUND | -.306 | -.165 | .645 | .331 | -.206 | .021 |
| PDRUND | -.225 | -.490 | .472 | -.033 | -.093 | .623 |
| PSERIOUS | .079 | .141 | -.070 | -.232 | .226 | -.685 |
| PRELATE | .891 | .407 | -.337 | .495 | -.739 | -.133 |
| PSAT | -1.668 | .253 | -1.345 | -.278 | 1.310 | .210 |

| Variable | 7 | 8 | 9 |
|---|---|---|---|
| PCONCBEF | .034 | -.016 | -.052 |
| PCONCAFT | -.892 | -.359 | -.181 |
| PTRTAP | -1.042 | -.615 | .842 |
| PTRTINT | .236 | -.822 | .239 |
| PPUND | -.104 | .045 | -.866 |
| PDRUND | .039 | .767 | .441 |
| PSERIOUS | -.011 | 1.161 | -.137 |
| PRELATE | 1.929 | .762 | -1.307 |
| PSAT | -1.617 | -.545 | .324 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Correlations between DEPENDENT and canonical variables
Function No.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| PCONCBEF | .274 | .689 | .189 | .434 | .166 | .310 |
| PCONCAFT | .466 | .192 | .208 | -.213 | .637 | .423 |
| PTRTAP | .096 | .303 | -.181 | -.334 | -.685 | .240 |
| PTRTINT | -.283 | .537 | .165 | -.656 | -.385 | .144 |
| PPUND | -.283 | -.082 | .306 | -.103 | -.370 | .033 |
| PDRUND | -.235 | .105 | .066 | -.080 | -.214 | .767 |
| PSERIOUS | .011 | .417 | .080 | -.503 | -.199 | -.345 |
| PRELATE | -.061 | .333 | -.438 | -.236 | -.566 | .424 |
| PSAT | -.415 | .195 | -.512 | -.027 | -.618 | .164 |

| Variable | 7 | 8 | 9 |
|---|---|---|---|
| PCONCBEF | -.267 | .154 | .087 |
| PCONCAFT | -.071 | .009 | -.260 |
| PTRTAP | -.439 | .135 | -.126 |
| PTRTINT | .053 | -.012 | -.042 |
| PPUND | -.406 | .030 | -.711 |
| PDRUND | .009 | .507 | .177 |
| PSERIOUS | -.334 | .534 | -.109 |
| PRELATE | -.016 | .215 | -.301 |
| PSAT | -.285 | .173 | -.087 |

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Variance explained by canonical variables of DEPENDENT variables

| CAN. VAR. | Pct Var DE | Cum Pct DE | Pct Var CO | Cum Pct CO |
|---|---|---|---|---|
| 1 | 7.695 | 7.695 | 7.062 | 7.062 |
| 2 | 13.686 | 21.382 | 10.403 | 17.465 |
| 3 | 7.752 | 29.133 | 5.289 | 22.755 |
| 4 | 12.259 | 41.392 | 5.650 | 28.405 |
| 5 | 21.948 | 63.339 | 5.986 | 34.391 |
| 6 | 14.103 | 77.443 | 2.940 | 37.331 |
| 7 | 6.991 | 84.434 | .930 | 38.261 |
| 8 | 7.344 | 91.778 | .098 | 38.359 |
| 9 | 8.222 | 100.000 | .015 | 38.374 |

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Raw canonical coefficients for COVARIATES
Function No.

| COVARIATE | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DCONCBEF | .100 | .546 | -.062 | .784 | .270 | -.084 |
| DCONCAFT | .433 | -.051 | .057 | -.954 | -.618 | .938 |
| DTRTAP | .079 | .188 | .877 | .592 | -.744 | .326 |
| DTRTINT | -.689 | .464 | -1.000 | -.122 | -.489 | .239 |
| DPUND | .370 | .262 | -.764 | -.192 | .127 | -.927 |
| DDRUND | -.409 | .479 | .620 | -.493 | .561 | -.348 |
| DSERIOUS | 1.265 | -.673 | .268 | .309 | -.028 | -.548 |
| DRELATE | .065 | .179 | .209 | -.128 | -.810 | .794 |
| DSAT | .055 | .132 | -.031 | .042 | .217 | .203 |

| COVARIATE | 7 | 8 | 9 |
|---|---|---|---|
| DCONCBEF | .086 | .409 | .365 |
| DCONCAFT | -.379 | -.281 | -.034 |
| DTRTAP | -.797 | .288 | -.110 |
| DTRTINT | .110 | -.269 | .081 |
| DPUND | -.218 | -.024 | -.309 |
| DDRUND | .262 | -.633 | .372 |
| DSERIOUS | .337 | -1.055 | .448 |
| DRELATE | .406 | .746 | .135 |
| DSAT | .145 | -.406 | -.779 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Standardized canonical coefficients for COVARIATES
CAN. VAR.

| COVARIATE | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DCONCBEF | .134 | .733 | -.084 | 1.052 | .362 | -.113 |
| DCONCAFT | .466 | -.054 | .061 | -1.026 | -.665 | 1.009 |
| DTRTAP | .066 | .158 | .735 | .496 | -.623 | .273 |
| DTRTINT | -.605 | .408 | -.879 | -.107 | -.429 | .210 |
| DPUND | .383 | .272 | -.792 | -.199 | .132 | -.961 |
| DDRUND | -.353 | .414 | .535 | -.425 | .484 | -.300 |
| DSERIOUS | .802 | -.427 | .170 | .196 | -.018 | -.347 |
| DRELATE | .079 | .218 | .255 | -.156 | -.987 | .968 |
| DSAT | .063 | .151 | -.035 | .048 | .249 | .232 |

| COVARIATE | 7 | 8 | 9 |
|---|---|---|---|
| DCONCBEF | .115 | .549 | .491 |
| DCONCAFT | -.408 | -.302 | -.037 |
| DTRTAP | -.668 | .241 | -.092 |
| DTRTINT | .097 | -.237 | .071 |
| DPUND | -.226 | -.025 | -.320 |
| DDRUND | .226 | -.546 | .321 |
| DSERIOUS | .214 | -.669 | .284 |
| DRELATE | .495 | .910 | .164 |
| DSAT | .166 | -.465 | -.893 |

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Correlations between COVARIATES and canonical variables
CAN. VAR.

| Covariate | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| DCONCBEF | .389 | .506 | -.195 | .267 | .454 | .394 |
| DCONCAFT | .421 | .235 | -.178 | -.295 | .310 | .516 |
| DTRTAP | -.141 | .255 | .396 | .279 | -.596 | -.287 |
| DTRTINT | -.405 | .185 | -.378 | .261 | -.532 | .015 |
| DPUND | .345 | .460 | -.067 | -.316 | -.293 | -.603 |
| DDRUND | -.131 | .625 | .486 | -.351 | -.070 | -.307 |
| DSERIOUS | .394 | -.096 | .037 | .298 | -.459 | -.177 |
| DRELATE | .140 | .239 | .212 | -.161 | -.488 | -.196 |
| DSAT | .159 | .329 | .078 | .204 | .100 | .240 |

| Covariate | 7 | 8 | 9 |
|---|---|---|---|
| DCONCBEF | -.148 | .042 | .315 |
| DCONCAFT | -.466 | -.097 | .246 |
| DTRTAP | -.414 | -.195 | -.183 |
| DTRTINT | .072 | -.521 | .172 |
| DPUND | -.027 | .210 | -.265 |
| DDRUND | .244 | -.240 | .130 |
| DSERIOUS | .410 | -.540 | .209 |
| DRELATE | .684 | .281 | -.173 |
| DSAT | .340 | -.277 | -.748 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

Variance explained by canonical variables of the COVARIATES

| CAN. VAR. | Pct Var DE | Cum Pct DE | Pct Var CO | Cum Pct CO |
|---|---|---|---|---|
| 1 | 8.655 | 8.655 | 9.432 | 9.432 |
| 2 | 10.022 | 18.678 | 13.185 | 22.617 |
| 3 | 5.022 | 23.700 | 7.361 | 29.977 |
| 4 | 3.506 | 27.206 | 7.605 | 37.583 |
| 5 | 4.513 | 31.719 | 16.549 | 54.131 |
| 6 | 2.522 | 34.241 | 12.098 | 66.229 |
| 7 | 1.813 | 36.054 | 13.631 | 79.860 |
| 8 | .129 | 36.184 | 9.666 | 89.526 |
| 9 | .020 | 36.203 | 10.474 | 100.000 |

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. CONSTANT
Adjusted Hypothesis Sum-of-Squares and Cross-Products

| | PCONCBEF | PCONCAFT | PTRTAP | PTRTINT | PPUND | PDRUND |
|---|---|---|---|---|---|---|
| PCONCBEF | 13.193 | | | | | |
| PCONCAFT | .200 | .003 | | | | |
| PTRTAP | -1.137 | -.017 | .098 | | | |
| PTRTINT | -7.655 | -.116 | .660 | 4.442 | | |
| PPUND | -9.028 | -.137 | .778 | 5.239 | 6.178 | |
| PDRUND | -8.506 | -.129 | .733 | 4.936 | 5.821 | 5.484 |
| PSERIOUS | -6.396 | -.097 | .551 | 3.711 | 4.377 | 4.124 |
| PRELATE | -4.525 | -.069 | .390 | 2.626 | 3.096 | 2.917 |
| PSAT | -7.155 | -.108 | .617 | 4.152 | 4.896 | 4.613 |

| | PSERIOUS | PRELATE | PSAT |
|---|---|---|---|
| PSERIOUS | 3.101 | | |
| PRELATE | 2.194 | 1.552 | |
| PSAT | 3.469 | 2.454 | 3.881 |

---

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* * ANALYSIS OF VARIANCE -- DESIGN 1 * *

EFFECT .. CONSTANT (CONT.)
Multivariate Tests of Significance (S = 1, M = 3 1/2, N = 4 )

| Test Name | Value | Approx. F | Hypoth. DF | Error DF | Sig. of F |
|---|---|---|---|---|---|
| Pillais | .97316 | 40.29146 | 9.00 | 10.00 | .000 |
| Hotellings | 36.26231 | 40.29146 | 9.00 | 10.00 | .000 |
| Wilks | .02684 | 40.29146 | 9.00 | 10.00 | .000 |
| Roys | .97316 | | | | |

- - - - - - - - - -

STATISTICAL ANALYSIS OF DIFFERENCE BETWEEN PATIENT GROUP OUTCOME RATINGS AND DOCTOR GROUP RATINGS - FRIEDMAN'S NON-PARAMETRIC.

```
NPAR TESTS FRIEDMAN=PCONCBEF DCONCBEF
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

--------------------------------------------------------------------------

Page 118                          SPSS/PC+                          10/28/91

                 N          Mean       Std Dev  Minimum  Maximum

PCONCBEF        35         3.714        2.321        1        7
DCONCBEF        35         4.686        1.301        2        7
--------------------------------------------------------------------------



Page 119                          SPSS/PC+                          10/28/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.33   PCONCBEF
          1.67   DCONCBEF

          Cases          Chi-Square            D.F.   Significance
            35             4.1143               1            .0425

--------------------------------------------------------------------------

Page 120                          SPSS/PC+                          10/28/91

This procedure was completed at 11:05:49


NPAR TESTS FRIEDMAN=PCONCAFT DCONCAFT
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****
```

```
-------------------------------------------------------------------------------
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                N         Mean      Std Dev  Minimum  Maximum

PCONCAFT       35        2.143       1.556        1        7
DCONCAFT       35        2.800       1.079        1        5
-------------------------------------------------------------------------------
Page 122                          SPSS/PC+                               10/28/91



- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.29   PCONCAFT
          1.71   DCONCAFT

          Cases         Chi-Square          D.F.   Significance
            35              6.4286             1           .0112

-------------------------------------------------------------------------------

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This procedure was completed at 11:05:56


NPAR TESTS FRIEDMAN=PCONCH DCONCH
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-------------------------------------------------------------------------------
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                N         Mean      Std Dev  Minimum  Maximum

PCONCH         35      1.57143      1.92943      .00     6.00
DCONCH         35      1.88571       .90005      .00     4.00
-------------------------------------------------------------------------------
Page 125                          SPSS/PC+                               10/28/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.37   PCONCH
          1.63   DCONCH

          Cases         Chi-Square          D.F.   Significance
            35              2.3143             1           .1282
```

```
-----------------------------------------------------------------------------
Page 126                          SPSS/PC+                           10/28/91

This procedure was completed at 11:06:02


NPAR TESTS FRIEDMAN=PTRTAP DTRTAP
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-----------------------------------------------------------------------------
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                N         Mean      Std Dev  Minimum  Maximum

PTRTAP         34        6.353       1.152        3        7
DTRTAP         35        6.086        .887        4        7
-----------------------------------------------------------------------------
Page 128                          SPSS/PC+                           10/28/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.60   PTRTAP
          1.40   DTRTAP

          Cases         Chi-Square           D.F.   Significance
            34              1.4412             1           .2299

-----------------------------------------------------------------------------
Page 129                          SPSS/PC+                           10/28/91

This procedure was completed at 11:06:09


NPAR TESTS FRIEDMAN=PTRTINT DTRTINT
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-----------------------------------------------------------------------------
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                N         Mean      Std Dev  Minimum  Maximum

PTRTINT        33        6.939        .242        6        7
DTRTINT        31        6.452        .850        4        7
-----------------------------------------------------------------------------
Page 131                          SPSS/PC+                           10/28/91
```

```
- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.66   PTRTINT
          1.34   DTRTINT

          Cases        Chi-Square          D.F.  Significance
            29           2.7931              1          .0947

-------------------------------------------------------------------------
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This procedure was completed at 11:06:15


NPAR TESTS FRIEDMAN=PPUND DPUND
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-------------------------------------------------------------------------
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                N        Mean      Std Dev  Minimum  Maximum

PPUND          35       6.400       1.117        2        7
DPUND          35       5.286       1.250        2        7
-------------------------------------------------------------------------
Page 134                        SPSS/PC+                        10/28/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.77   PPUND
          1.23   DPUND

          Cases        Chi-Square          D.F.  Significance
            35          10.3143              1          .0013

-------------------------------------------------------------------------
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This procedure was completed at 11:06:22


NPAR TESTS FRIEDMAN=PORUND DORUND
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

-------------------------------------------------------------------------
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```

| | N | Mean | Std Dev | Minimum | Maximum |
|---|---|---|---|---|---|
| PDRUND | 35 | 6.600 | 1.168 | 2 | 7 |
| DDRUND | 35 | 5.714 | .893 | 3 | 7 |

---

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- - - - - Friedman Two-way ANOVA

| Mean Rank | Variable |
|---|---|
| 1.80 | PDRUND |
| 1.20 | DDRUND |

| Cases | Chi-Square | D.F. | Significance |
|---|---|---|---|
| 35 | 12.6000 | 1 | .0004 |

---

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This procedure was completed at 11:06:28

```
NPAR TESTS FRIEDMAN=PSERIOUS DSERIOUS
/OPTIONS=3
/STATISTICS=1.
```

***** WORKSPACE allows for 5906 cases for NPAR TESTS *****

---

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| | N | Mean | Std Dev | Minimum | Maximum |
|---|---|---|---|---|---|
| PSERIOUS | 34 | 6.618 | .985 | 2 | 7 |
| DSERIOUS | 35 | 6.486 | .887 | 3 | 7 |

---

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- - - - - Friedman Two-way ANOVA

| Mean Rank | Variable |
|---|---|
| 1.54 | PSERIOUS |
| 1.46 | DSERIOUS |

| Cases | Chi-Square | D.F. | Significance |
|---|---|---|---|
| 34 | .2647 | 1 | .6069 |

---

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This procedure was completed at 11:06:35

```
NPAR TESTS FRIEDMAN=PRELATE DRELATE
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

------------------------------------------------------------------------------
Page 142                         SPSS/PC+                              10/28/91

               N         Mean       Std Dev  Minimum  Maximum

PRELATE       35         6.743        .780        3        7
DRELATE       35         5.771       1.352        2        7
------------------------------------------------------------------------------
Page 143                         SPSS/PC+                              10/28/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.76   PRELATE
          1.24   DRELATE

          Cases          Chi-Square           D.F.   Significance
            35             9.2571              1          .0023

------------------------------------------------------------------------------
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This procedure was completed at 11:06:42


NPAR TESTS FRIEDMAN=PSAT DSAT
/OPTIONS=3
/STATISTICS=1.

 ***** WORKSPACE allows for    5906 cases for NPAR TESTS *****

------------------------------------------------------------------------------
Page 145                         SPSS/PC+                              10/28/91

               N         Mean       Std Dev  Minimum  Maximum

PSAT          35         6.514       1.269        2        7
DSAT          35         5.143       1.240        2        7
------------------------------------------------------------------------------

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.84   PSAT
          1.16   DSAT

          Cases          Chi-Square           D.F.   Significance
            35            16.4571              1          .0000
```

ANALYSIS OF CORRELATIONS BETWEEN DOCTOR AND PATIENT OUTCOME RATINGS WITHIN DYADS.

```
CORR PCONCBEF DCONCBEF /PCONCAFT DCONCAFT /PCONCH DCONCH /PTRTAP DTRTAP
/PTRTINT DTRTINT /PPUND DPUND /PDRUND DDRUND /PSERIOUS DSERIOUS
/PRELATE DRELATE /PSAT DSAT
/OPTIONS=2
/STATISTICS=1.
```

--------------------------------------------------------------------------------

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| Variable | Cases | Mean | Std Dev |
|---|---|---|---|
| PCONCBEF | 35 | 3.7143 | 2.3209 |
| DCONCBEF | 35 | 4.6857 | 1.3009 |
| PCONCAFT | 35 | 2.1429 | 1.5557 |
| DCONCAFT | 35 | 2.8000 | 1.0792 |
| PCONCH | 35 | 1.5714 | 1.9294 |
| DCONCH | 35 | 1.8857 | .9000 |
| PTRTAP | 34 | 6.3529 | 1.1516 |
| DTRTAP | 35 | 6.0857 | .8869 |
| PTRTINT | 33 | 6.9394 | .2423 |
| DTRTINT | 31 | 6.4516 | .8500 |
| PPUND | 35 | 6.4000 | 1.1167 |
| DPUND | 35 | 5.2857 | 1.2502 |
| PDRUND | 35 | 6.6000 | 1.1682 |
| DDRUND | 35 | 5.7143 | .8935 |
| PSERIOUS | 34 | 6.6176 | .9852 |
| DSERIOUS | 35 | 6.4857 | .8869 |
| PRELATE | 35 | 6.7429 | .7800 |
| DRELATE | 35 | 5.7714 | 1.3522 |
| PSAT | 35 | 6.5143 | 1.2689 |
| DSAT | 35 | 5.1429 | 1.2401 |

--------------------------------------------------------------------------------

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```
Correlations:  PCONCBEF   DCONCBEF

  PCONCBEF    1.0000      .5928**
  DCONCBEF     .5928**   1.0000

Minimum pairwise N of cases:    35        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
Page 150                          SPSS/PC+                              10/28/91

Correlations:  PCONCAFT   DCONCAFT

  PCONCAFT    1.0000      .5431**
  DCONCAFT     .5431**   1.0000

Minimum pairwise N of cases:    35        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
Page 151                          SPSS/PC+                              10/28/91

Correlations:  PCONCH     DCONCH

  PCONCH      1.0000      .4791*
  DCONCH       .4791*    1.0000

Minimum pairwise N of cases:    35        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
Page 152                          SPSS/PC+                              10/28/91

Correlations:  PTRTAP     DTRTAP

  PTRTAP      1.0000      .1677
  DTRTAP       .1677     1.0000

Minimum pairwise N of cases:    34        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
Page 153                          SPSS/PC+                              10/28/91

Correlations:  PTRTINT    DTRTINT

  PTRTINT     1.0000      .1428
  DTRTINT      .1428     1.0000

Minimum pairwise N of cases:    29        1-tailed Signif:  * - .01  ** - .001

" . " is printed if a coefficient cannot be computed
--------------------------------------------------------------------------------
Page 154                          SPSS/PC+                              10/28/91
```

Correlations: PPUND DPUND

| | PPUND | DPUND |
|---|---|---|
| PPUND | 1.0000 | .2107 |
| DPUND | .2107 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

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Correlations: PDRUND DDRUND

| | PDRUND | DDRUND |
|---|---|---|
| PDRUND | 1.0000 | .2254 |
| DDRUND | .2254 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

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Correlations: PSERIOUS DSERIOUS

| | PSERIOUS | DSERIOUS |
|---|---|---|
| PSERIOUS | 1.0000 | .5673** |
| DSERIOUS | .5673** | 1.0000 |

Minimum pairwise N of cases: 34 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

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Correlations: PRELATE DRELATE

| | PRELATE | DRELATE |
|---|---|---|
| PRELATE | 1.0000 | .2215 |
| DRELATE | .2215 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

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Correlations: PSAT DSAT

| | PSAT | DSAT |
|---|---|---|
| PSAT | 1.0000 | .2323 |
| DSAT | .2323 | 1.0000 |

Minimum pairwise N of cases: 35 1-tailed Signif: * - .01 ** - .001

" . " is printed if a coefficient cannot be computed

---

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This procedure was completed at 11:07:32

---

APPENDIX D

DOCTOR GENERAL QUESTIONNAIRE
(DGQ)

# PHYSICIAN QUESTIONNAIRE

Please mark the scales at a point best reflecting your **opinion** with regard to the question being asked.
For example:

I _____ I _____ X _____ I _____ I _____ I _____ I

Where choices are offered please simply circle the answer most appropriate to your response. E.G.

yes    no

1. What kind of practice do you work in?

   solo    partnership    group    other ________________
   (specify)

2. To which age group do you belong?

   26-35    36-45    46-55    56-65    over 65

3. Are you MALE or FEMALE?

4. How long have you been a general practitioner?

   __________________

5. How important is communication in your daily work with patients?

   I _____ I _____ I _____ I _____ I _____ I _____ I

   it is of no importance — communication is of primary importance

6. Have you ever been aware of any communication difficulties arising during a consultation?

   yes    no

7. Can you make a rough estimate of the proportion of consultations in which such difficulties arise in any particular day?

   I ___ I ___ I ___ I ___ I ___ I ___ I ___ I ___ I ___ I ___ I ___ I

   0%   10%   20%   30%   40%   50%   60%   70%   80%   90%   100%

8. Do they occur in relation to specific patients?

yes no

9. Do they occur in relation to specific topics?

yes no

10. Please note any areas that you feel are communication "blackspots".

_______________________________________________
_______________________________________________
_______________________________________________
_______________________________________________
_______________________________________________

11. Do you think it is the doctor's perogative to place limits on the information given to patients?

yes no

Why?___________________________________________
_______________________________________________
_______________________________________________
_______________________________________________
_______________________________________________

12. What proportion of patient visits would you characterize as presenting trivial problems?

I____I____I____I____I____I____I____I____I____I____I
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

13. How do you rate the overall satisfaction you get from caring for patients?

I____I____I____I____I____I____I

not satisfied at all — totally satisfied

14. What three characteristics would you say define the ideal patient?

_______________________________________________
_______________________________________________
_______________________________________________

Which of the following best describes the source of your communication skills

medical school training

voluntary courses since registration

accumulated experience

applying skills and techniques you have read about

natural ability

other comments:

..................................................................................................................................................................
..................................................................................................................................................................
..................................................................................................................................................................
..................................................................................................................................................................
..................................................................................................................................................................
..................................................................................................................................................................
..................................................................................................................................................................
...................................................................

15. What patient behaviour frustrates you most?

THANK YOU VERY MUCH FOR YOUR HELP. IF YOU HAVE ANY COMMENTS OR CRITICISMS PLEASE USE THE SPACE BELOW.

PATIENT GENERAL QUESTIONNAIRE
(PGQ)

## PATIENT QUESTIONNAIRE

Please mark the 7-point scales at a point best reflecting **your opinion.** For example:

I_____I_____X_____I_____I_____I_____I

Where choices are offered please simply circle the answer most appropriate to your response. E.G.

yes no

1. Have you ever had problems communicating your health needs to a doctor?

   yes no

2. If yes, has this caused you any anxiety?

   yes no

3. Are there some things that you are reluctant to talk to a doctor about?

   yes no

   Why do you think you feel this reluctance?

   ______________________________________________
   ______________________________________________
   ______________________________________________
   ______________________________________________
   ______________________________________________

4. What three characteristics would you say define the ideal doctor?

   ______________________________________________
   ______________________________________________
   ______________________________________________

5. What behaviour of doctors frustrates you most?

   ______________________________________________
   ______________________________________________
   ______________________________________________
   ______________________________________________
   ______________________________________________

6. Do you think it is the doctors perogative to place limits on the information given to patients?

yes no

Why? ____________________________________________

____________________________________________

____________________________________________

____________________________________________

____________________________________________

7. How much detailed information about your condition do you like a doctor to give you?

I ______ I ______ I ______ I ______ I ______ I ______ I

none everything

8 How do you feel about asking a doctor questions?

I ______ I ______ I ______ I ______ I ______ I ______ I

I am comfortable asking the doctor questions

I am not comfortable asking the doctor questions

9. How do you feel about asking a doctor questions that

(a) seek more information about your condition?

____________________________________________

____________________________________________

____________________________________________

(b) question the doctors diagnosis?

____________________________________________

____________________________________________

____________________________________________

(c) question the treatment the doctor proposes?

____________________________________________

____________________________________________

____________________________________________

PLEASE CIRCLE APPROPRIATE RESPONSE TO ALL QUESTIONS

26. How would you describe your general health?

poor fair average good excellent

27. To which age group do you belong?

below 16 16-25 26-35 36-45 46-55 56-65 over 65

28. Are you MALE or FEMALE?

29. How long have you been a patient of this doctor?
(an approximate answer is sufficient e.g. 3 years)

..................................................................................

(if first visit please tick __ )

30. Do you have any formal qualifications from university, polytechnic, or work related?

Please list:__________________________________________

..................................................................................
..................................................................................
..................................................................................
..................................................................................

31. How would you rate your own communication abilities?

I______I______I______I______I______I______I

I am an excellent communicator — I am a poor communicator

STATISTICAL ANALYSIS OF DOCTORS' ASSESSMENTS AND PATIENT RESPONSES FOR INFORMATION PROVISION - FRIEDMAN'S TEST

```
            set listing='res10.doc'.
data list file 'x4adata.doc' fixed/ patinfo 1 docinfo 3.
npar tests friedman=patinfo docinfo /options=3 /statistics=1.
The raw data or transformation pass is proceeding
     35 cases are written to the uncompressed active file.

 ***** WORKSPACE allows for    5616 cases for NPAR TESTS *****

--------------------------------------------------------------------------------
Page  11                            SPSS/PC+                            10/10/91

                N         Mean      Std Dev  Minimum  Maximum

PATINFO        35         6.343      1.162       2        7
DOCINFO        35         5.457       .741       4        7
--------------------------------------------------------------------------------
Page  12                            SPSS/PC+                            10/10/91

- - - - - Friedman Two-way ANOVA


     Mean Rank   Variable

          1.90   PATINFO
          1.10   DOCINFO

          Cases          Chi-Square           D.F.   Significance
            35             22.4000             1            .0000

--------------------------------------------------------------------------------
Page  13                            SPSS/PC+                            10/10/91

This procedure was completed at 16:01:11
--------------------------------------------------------------------------------
Page  14                            SPSS/PC+                            10/10/91

FINISH.

End of Include file.
```

FREQUENCY DISTRIBUTION FOR DOCTOR'S ESTIMATES OF PROPORTION OF CONSULTATIONS WHICH ARE TRIVIAL

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TRIV

| Value Label | Value | Frequency | Percent | Valid Percent | Cum Percent |
|---|---|---|---|---|---|
| | 10 | 4 | 11.4 | 12.5 | 12.5 |
| | 20 | 5 | 14.3 | 15.6 | 28.1 |
| | 30 | 9 | 25.7 | 28.1 | 56.3 |
| | 40 | 2 | 5.7 | 6.3 | 62.5 |
| | 50 | 4 | 11.4 | 12.5 | 75.0 |
| | 60 | 3 | 8.6 | 9.4 | 84.4 |
| | 80 | 4 | 11.4 | 12.5 | 96.9 |
| | 90 | 1 | 2.9 | 3.1 | 100.0 |
| | 99 | 3 | 8.6 | MISSING | |
| | TOTAL | 35 | 100.0 | 100.0 | |

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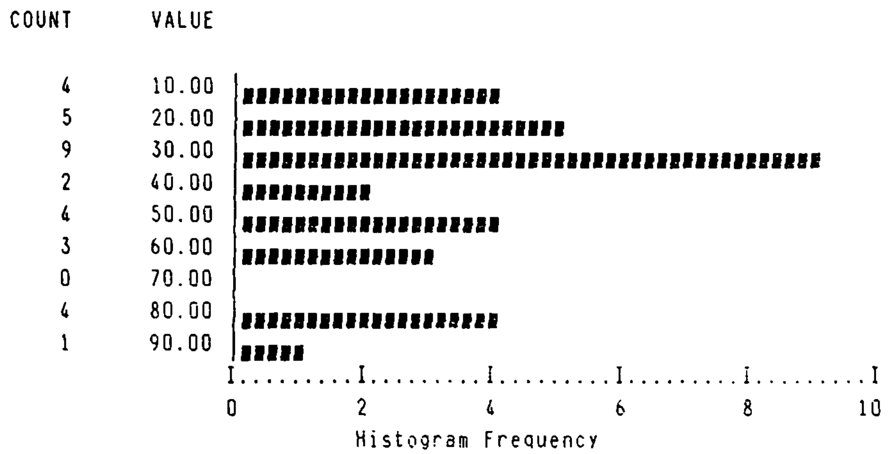
TRIV




Mean 40.000 Median 30.000 Variance 548.387

Valid Cases 32 Missing Cases 3

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This procedure was completed at 14:51:17

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SET LISTING='RES-SAT.DOC'.

# APPENDIX E

## QUESTION SHEET FOR MEDICAL SCHOOLS

To answer please circle the appropriate option (1,2,3,4 & 6) and use your own words (5,7 & 8).

1) Does the selection process for entry to the undergraduate medical course consider the communication skills of individual applicants with respect to their prospects for admission?

YES NO

2) Does the undergraduate medical course include formal training in interpersonal communication?

YES NO

3) If yes, then what proportion of the total course would be devoted to developing communication skills?

1%-5% 6%-10% 11%-15% 16%-20% 21%-25% 25%+

4) What method is used for teaching communication skills?

Lectures Tutorials Role-playing Video feedback
Other________________________________________

5) What is the purpose of communications training in the course offered at your medical school?

6) Are the communication skills of trainees assessed formally?

YES NO

7) If yes, please indicate how assessment is carried out and by whom?

8) What is the measure used to determine adequacy of communication skills?

UNIVERSITY OF YORK
HESLINGTON, YORK, YO1 5DD
Telephone (0904) 430000
Telex 57933 YORKUL Fax (0904) 433433

DEPARTMENT OF PSYCHOLOGY

Direct line (0904) 4331

May 22, 1990

Dean of Undergraduate Medical Training
University of Bristol
Senate House
Bristol
B58 1TH

Dear Sir

I am currently researching the role of communication in professional training and to that end am conducting a mail survey of the Medical Schools in Britain.

It would help my study greatly if you could complete the attached question sheet and return it in the envelope provided. If this could be done more appropriately by another member of staff please pass this request for information along.

Thank you for your co-operation and I look forward to your early response.

Yours faithfully

L G Frederikson B.Sc.

# APPENDIX F

**STOP**

before you go in to see the doctor we would like you to take time to go through the following points.

**THINK**

about why you have come to see the doctor today
- what is wrong
- what is troubling you
- what you think the problem is
- what is worrying you about your health
- & what you hope the doctor can do for you.

**TELL**

the doctor all of these things as clearly and concisely as possible right at the beginning of the consultation. DON'T leave important points till you are about to leave.

**LISTEN**

to what the doctor has to say as well. If you need more information – ask. The doctor is happy to explain things but you need to indicate what it is that you want to know.

**REMEMBER**

the doctor is not a mind reader and relies on you to:

**STOP**
**THINK**
**& TELL!**

CHI-SQUARE TEST OF ASSOCIATION BETWEEN LEAFLET AND GOOD COMMUNICATION

```
FILENAME = DAT9.DOC
SET LISTING = 'DAT9.DOC'.
SELECT IF (GROUP NE 2).
CROSTABS GROUP BY BINSCORE
The raw data or transformation pass is proceeding
     80 cases are written to the uncompressed active file.
/OPTIONS = 3
/STATISTICS = 1.


 ***** Given WORKSPACE allows for  9020 Cells with
     2 Dimensions for CROSSTAB problem *****
```

---

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Crosstabulation: GROUP
By BINSCORE

| BINSCORE-> | Count / Row Pct | NOT GOOD COMM 0 | GOOD COMM 1 | Row Total |
|---|---|---|---|---|
| GROUP | | | | |
| CONTROL | 0 | 17<br>42.5 | 23<br>57.5 | 40<br>50.0 |
| EXPMTL | 1 | 8<br>20.0 | 32<br>80.0 | 40<br>50.0 |
| | Column Total | 25<br>31.3 | 55<br>68.8 | 80<br>100.0 |

| Chi-Square | D.F. | Significance | Min E.F. | Cells with E.F.< 5 |
|---|---|---|---|---|
| 3.72364 | 1 | .0536 | 12.500 | None |
| 4.71273 | 1 | .0299 | ( Before Yates Correction ) | |

Number of Missing Observations = 0

---

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This procedure was completed at 16:39:37

## COMMENT ON THE NON-USE OF YATES CORRECTION

Yates correction for continuity involves subtracting 0.5 from positive differences between observed and expected frequencies and adding 0.5 to negative differences before squaring. The value of this correction has been widely debated and remains controversial (Starmer, Grizzle & Sen, 1974; Mantel, 1974).

Conover (1974) suggests that when only one set of marginal totals is predetermined the statistic with Yates correction seldom improves the estimates provided before the correction and usually the results are so overly conservative that they are practically useless!

In the data presented on the previous page, only the row marginals are predetermined therefore the use of Yates correction is contra-indicated (Conover, 1974; p374).

T-TEST COMPARISON OF EXPERIMENTAL AND CONTROL GROUP MEANS FOR COMMUNICATION RATING

T-TEST GROUPS = GROUP (0,1)/VARIABLES = SCORE.

---

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Independent samples of GROUP

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: SCORE

| | Number of Cases | Mean | Standard Deviation | Standard Error |
|---|---|---|---|---|
| Group 1 | 40 | 2.5000 | .641 | .101 |
| Group 2 | 40 | 2.7750 | .480 | .076 |

| | | Pooled Variance Estimate | | | Separate Variance Estimate | | |
|---|---|---|---|---|---|---|---|
| F Value | 2-Tail Prob. | t Value | Degrees of Freedom | 2-Tail Prob. | t Value | Degrees of Freedom | 2-Tail Prob. |
| 1.78 | .075 | -2.17 | 78 | .033 | -2.17 | 72.28 | .033 |

---

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This procedure was completed at 16:39:50

# APPENDIX G

DOCTOR EVALUATION GUIDE

UNIVERSITY OF YORK
HESLINGTON, YORK, YO1 5DD
Telephone (0904) 430000
Telex 57933 YORKUL Fax (0904) 433433

DEPARTMENT OF PSYCHOLOGY

Direct line (0904) 4331

Dear Respondent

Thank you for reading about the information-processing model of medical consultation and helping to evaluate it from the doctor's perspective. As you will have noted from reading the paper it works well from the patients' point of view but experience has shown that many methods which patients favour are both difficult and time consuming to put into practice. The information-processing model is intended to provide a view of consultation which if adopted could make consultations more effective and more satisfying for doctor and patient, without requiring more time, more energy or greater emotional involvement.

Please complete the attached semi-structured questionnaire and please feel free to add any other comments. Send the completed forms back in the envelope supplied.

Once again, thanks for your help in evaluating the model.

Lesley Frederikson

Please circle appropriate answers and add comments where requested.

Does the model fit conceptually as a definition of consultation? YES NO

WHY?

Does it draw together different areas of skill and knowledge? YES NO

If yes - HOW? If no - WHY NOT?

Is the model applicable/workable? YES NO

If yes - HOW? If no - WHY NOT?

Are there any practical benefits? YES NO

If yes WHAT ARE THEY?

Do you have any objections to the model? YES NO

If yes WHAT ARE THEY?

Do you see any disadvantages in utilizing the model?
YES NO

If yes PLEASE ELABORATE:

Do you see the model as helpful in teaching trainees about interactions with patients? YES NO

If yes - HOW? If no - WHY NOT?

Do you think patients could contribute to more effective consultation in terms of this model? YES NO

If yes HOW?

Please add any further comments you may wish to make:-

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