COMMUNICATION PATTERNS AND SATISFACTION

IN MEDICAL INTERVIEWS

By

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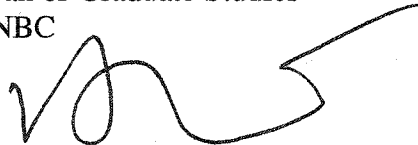
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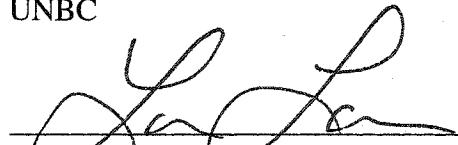
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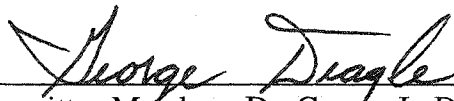
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ABSTRACT

Communication between physicians and their patients is attracting an increasing amount of attention in medical care studies. The purpose of this research is to describe patterns of physician-patient communication in the medical interview, and to examine the association between these communication patterns and patient satisfaction with medical care. Unlike other research, interns were not recruited to participate in this study. Thirty-one physician-patient interactions (13 male/male, and 18 male/female dyads) during routine medical visits were audio-taped and scored using the Roter Interaction Analysis System (RIAS) which divides the conversation into nine distinct communication categories. Patient satisfaction was measured using a questionnaire administered after each visit. Findings indicate a difference between the way physicians and patients behave differently in the content, process, and affective functions of the medical interview. It was found that physicians are more involved in the process and content aspects of the medical visit, whereas patients are more involved in the affective aspects of the medical visit. There was no difference found in the number of utterances spoken by physicians and patients, and no difference between the gender combinations in the length of interviews or communication categories. Patient satisfaction decreased with the presence of closed-ended questions by the physician. Finally, this project calls for a reconceptualization of the often-used term "facilitative" statements as the present study showed that these statements by physicians may be viewed as interruptive and intrusive by patients.

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGEMENT

Introduction

Medical care is primarily delivered in the process of communication between the practitioner and the patient. Communication between physicians and their patients provides the basis for establishing interpersonal comfort and trust, for exchanging information that will be used to make health care decisions, for negotiating patient and physician decision-making roles, and for developing the patient's health care attitudes and behaviours (Arntson & Philipsborn, 1982; Barnsley, Williams, Cockerill, & Tanner, 1999). The medical interaction provides the physician with an important diagnostic tool for the assessment and treatment of the patient, and provides the patient with information they can use to evaluate their condition, symptoms, and progress (Hall, Roter, & Katz, 1987, Simpson et al., 1991;Wasserman & Inui, 1983).

The medical interview has three functions: to gather data to help the physician understand the patient, to develop rapport with and respond to the patient's emotions, and to educate the patient and assist in behavioural change to prevent further health problems (Keller & Carroll, 1994). Thus, effective communication is an essential element of good health care and helps facilitate mutual understanding between the physician and the patient. Patients present a variety of problems to physicians about their health problems and requests, and physicians obtain health information from their patients to reach a diagnosis and treatment, which physicians communicate back to their patients (Bishop, 1994). Both doctors and patients are important to the process of medical consultation since doctors and patients both have knowledge that is relevant for the consultation (Fisher, 1982; Stevenson, Barry, Britten, Barber, & Bradley, 2000). Doctors have the technical background knowledge and

possible solutions with regard to patients' medical problem. Patients have, through experience, immersion in their culture, and past discussion with family and friends, ideas about what is happening to them (Stevenson et al. 2000). Patients also have preferences that encompass a range of issues such as their desire or request for a prescription, and the extent and type of side effects that they would be willing to tolerate (Stevenson et al., 2000). Therefore, it is essential for both parties to actively participate in the consultation to discuss and understand their respective beliefs.

Because of the unique knowledge that both patients and physicians bring to the interaction, the medical interview remains the most important tool in the process of the collection of information and is central to the rendering of effective health care (Bertakis , Roter, & Putnam, 1991, Lipkin, Quill, & Napodano, 1984). Despite the fact that complex technologies have been developed to aid physicians with medical treatment and diagnosis, communication still remains the primary means of exchanging information between the physician and the patient (Kreps, O'Hair, & Clowers, 1994; Ong, DeHaes, Hoos, & Lammes, 1995; Shapiro, 1990). Moreover, patients often judge the adequacy of their care by criteria that are often irrelevant to the technical quality of the care. Physicians are often judged by the extent to which they are able to satisfy the patient's emotional needs (Taylor, 1986).

The interpersonal connection between doctor and patient is important because illness is often difficult for the patient and can interfere with the patient's sense of security and his or her sense of control. Pain and loss of function can disrupt the patient's life, isolating the patient and lowering his or her usual coping mechanisms (Suchman & Matthews, 1988). These feelings of isolation can be reduced when the patient feels a connection with the physician and has the perception of being understood (Suchman & Matthews, 1988). It is not

surprizing then, that the quality that patients value most in physicians is the demonstration of personal concern and a willingness to listen (Suchman & Matthews, 1988).

An important characteristic to understand about the doctor-patient relationship is that it involves interaction between individuals that are not of equal positions, the interaction is often non-voluntary, and involves issues of vital importance (Ong et al., 1995). Therefore, it is an emotionally charged interaction and requires the close co-operation of the physician and patient (Ong et al., 1995). Doctor-patient interactions can also be emotionally intense since the physician has been given access to the patient's body and details of the patient's life, in addition to the emotional dependency which develops when people are ill (Bishop, 1994). Furthermore, patients are considered to rank lower than physicians on social status, and are typically expected to defer to them (Bishop, 1994). Doctors essentially lead and direct conversations; patients largely respond. This results in a passive patient that may not feel entirely comfortable in the exchange and may withhold important information that could effect the diagnosis of the illness and treatment outcomes (Freeling, 1983).

Competence in communication involves communicator adaptability in the interaction (Chen, 1995). According to Chen (1995), more competent communicators can modify themselves to different task requirements, different communication goals, or different interaction partners. However, studies have found that, over the years of practice, the majority of physicians develop a style of consulting which is relatively unchanging, and use the same interaction style across encounters (Hall et al., 1987). Furthermore, few physicians had insight into how they communicate with their patients, although it seemed that patients were very aware of the physician's communication style (Hall et al., 1987). It is clear that patients judge the physician's competency based on their perceptions of communication

effectiveness (Hall et al., 1987).

The Importance of Doctor-Patient Communication

Effective doctor-patient interactions are pivotal in the patient's perception of the delivery of medical care (Inui, Carter, Kukull, & Haigh, 1982). A study by Pendleton & Hasler (1983) asked patients about their experiences of medical care. It was found that if the clinical decision making was faulty in an important way (for example, if there was a wrong diagnosis made, or inappropriate treatment was recommended) the patients described the consultation as a bad one. However, in order for the consultation to be considered a good one, not only did the clinical medicine have to be of a high standard, but also the communication between the doctor and patient had to be satisfactory. The study concluded that the patients had two criteria for judging a consultation to be good. One criterion was good clinical decision making; the other was good communication which they described as the doctor listening well and volunteering information and explanations.

Physicians are often judged on the manner in which they communicate with their patients (Hall, Roter, & Rand, 1981; Taylor, 1986). It has been found that close to 50% of patients list kindness, understanding, sympathy, and encouragement as the most important attributes of a physician (Stiles, Putnam, Wolf, & James, 1979). Only 26% of the same patients rated the ability of the physician to treat their illness effectively as being the most important attribute (Stiles et al., 1979). Taylor (1986) points out that: "...a warm, friendly practitioner is often judged to be both nice and competent, whereas a cool, aloof practitioner may be judged as both unfriendly and incompetent. In fact, technical quality of care and the manner in which care is delivered are unrelated. Consequently, communication between

patient and practitioner is critical if patients are to be satisfied with their care" (p. 241).

Faulty communication on the part of the physician or the patient may lead to inadequate exchange of information during history taking and diagnosis, or to a low degree of patient involvement in the medical exchange (Stewart, 1995). Physician understanding of the patient's concerns, even if they cannot be resolved, results in a reduction in the patient's level of anxiety (Simpson et al., 1991). A positive response is evoked from the patient when the physician is able to communicate warmth and interest in the patient (Speedling & Rose, 1985). Samora, Saunders, & Larson (1961) have stated:

> Perhaps if the goal of medicine is the diagnosis and treatments of disease, the quality of communication between practitioner and patient makes little difference, so long as an adequate medical history can be obtained and the necessary co-operation of the patient in doing or refraining from doing certain things can be assured. But if the goal is more broadly interpreted, if the concern is with the person who is sick and the purpose is to relieve, reassure, and restore him – as would seem to be increasingly the case – the quality of communication assumes instrumental importance and anything that interferes with it needs to be noted, and if possible, removed (p. 92).

Further evidence comes from research which shows that even experienced medical practitioners may fail to diagnose problems accurately or to notice them at all due to poor or inadequate communication between the doctor and patient. Thus, for purely clinical reasons, good communication is necessary.

From the above evidence, we can see that doctor-patient communication is a concern of patients. What is more, it has been found that a substantial proportion of patients'

anxieties about going to see the doctor are attributed by the patients to difficulties they anticipate in making matters clear to their doctor. For example, Simpson et al. (1991) found that 54% of patient complaints and 45% of patient concerns are not elicited by physicians. Furthermore, psychosocial and emotional problems are common in medical practice, but these diagnoses are missed in up to 50% of the cases (Simpson et al., 1991). In addition, in approximately half of all medical visits, the patient and the doctor do not agree on the nature of the main presenting problem (Simpson et al., 1991).

However, it is not just the patients who experience difficulties with communication in the medical visit. It has been demonstrated that 20% to 25% of consultations in general practice pose the doctors with communication difficulties, and could fall into two major categories. Eighty percent of the problems were difficulties in the transmissions of information whereas 13.5% of the problems arose when the doctor attempted to persuade the patient on a matter (Taylor, 1986).

As can be seen from the discussion above, the interaction between physicians and their patients is important since it plays a major role in the effectiveness of medical care. Successful medical communication results in a positive influence not only on symptom resolution, but also on the emotional health of the patient (Stewart, 1995). Studies have shown that the verbal exchange between physicians and patients has components that are strongly linked to both process and outcome variables (Irish & Hall, 1995). Moreover, the exchange of both medical and psychosocial information is instrumental in how patients perceive and assess the quality of care provided by the physician (Irish & Hall, 1995; Laine & Davidoff, 1996; Simpson et al., 1991; Wyatt, 1991).

Poor doctor-patient communication can also have serious implications for diagnosis,

treatment, and health care utilization. Miscommunication between doctors and their patients can lead to repeated outpatient visits, unnecessary hospitalization, and needless expense (Putnam, 1996). It has been shown that good physician-patient relationships attract patients and keep them in the practice (Bishop, 1994; Putnam, 1996; Speedling & Rose, 1985). Effective medical relationships prevent doctor shopping, which is a costly practice because each time a patient visits a new doctor, time is spent collecting new database and patient medical history, establishing a new plan of care and building a new therapeutic relationship (Putnam, 1996). The result is ineffective utilization of the health care system. Skillful interviewing and a positive physician-patient relationship can decrease the use of costly tests, procedures, drugs, and hospitalization (Putnam, 1996).

The way in which communication between physicians and their patients is carried out has also been directly linked to patient satisfaction as well as treatment outcomes (Charon, Greene, & Adelman, 1994; Stewart, 1995). Effective interpersonal skills have been found to be among the qualities that patients desire most in a physician (Simpson et al., 1991). However, patients most commonly complain that their doctors do not listen (Cassel & Skopek, 1977). Simpson and his colleagues (1991) claim that the deficiencies in clinical communication are related to an increasing dissatisfaction with medical professionals. Patients who are dissatisfied with their communication with their physician are less likely to use medical services in the future, and are more likely to file formal complaints against their doctors (Taylor, 1986).

Patient satisfaction is important since a satisfied patient may be more inclined to participate in the medical process more effectively and behave in ways which promote his or her recovery (Hall, Milburn & Epstein, 1993). These effects can be accomplished through the

provision of information by the physician and through affective communication (Hall,

Milburn & Epstein, 1993).

Clearly, there is a need to identify the attributes of doctor communication that prevent

these unfavorable outcomes and that maximize levels of patient satisfaction, adherence, and

repeat use (Bradley, Sparks, & Nesdale, 2001). For doctors and patients alike, the experience

of communication difficulties in general practice consultations suggests that the study of

doctor-patient communication is an important one.

The Study of Doctor-Patient Communication

Communication between physicians and their patients is attracting an increasing

amount of attention in medical care studies (Ong et al., 1995). In the past two decades,

research has attempted to study the communication process in medical encounters (Ong et al.,

1995). The doctor-patient relationship is one of the most complex social relations, making it

an extremely difficult topic to research (Ong et al., 1995).

Despite the importance placed on physician interviewing skills, interviewing is

relatively understudied and infrequently monitored (Hall, Roter, & Katz, 1987). The articles

reviewed in Wyatt (1991) did not reflect a primary concern in the medical literature for

physician-patient interaction. Articles addressing relationships between physicians and their

patients constitute less than 1% of the articles published in medical journals (Wyatt, 1991).

Wyatt (1991) maintains that as a result of this scarcity, little consensus on the nature or

importance of physician-patient communication has emerged. Whereas in the past few years

there has been rapid advancement in the diagnosis and treatment of medical problems,

progress in the understanding of how physicians and patients communicate has been slow

(Wolraich et al., 1986). One of the barriers to reaching such an understanding is the lack of reliable and valid instruments with which to assess communication skills (Wolraich et al., 1986).

Most of the studies conducted on the topic of physician-patient communication yield results that could be used to make significant improvements in the delivery of medical services as well as medical education (Hall et al., 1988). However, the medical field has not yet shown striking progress despite the continuous flow of results (Hall, Roter, & Katz, 1988).

During the past decade, there has been a steady increase in the interest in studies of physician-patient communication (Waitzkin, 1984). From this research, there is growing awareness of the nature of doctor-patient interaction, its difficulties, and ways in which it can be improved (Waitzkin, 1984). The following is an outline of some of the implications of this research on doctor-patient communication, and highlights its importance in clinical practice.

Research in physician-patient communication has often revealed misunderstandings, confusion, and barriers (Waitzkin, 1984). "Communicating well is an important part of practising medicine" (Waitzkin, 1984, p. 2446). The study of doctor-patient communication is important because many difficulties in the interaction between doctors and patients have been identified. There is ample evidence that the doctor-patient interaction is often disappointing to both physicians and their patients. Studies indicate that patients are dissatisfied with their doctors, and doctors are often dissatisfied with the lack of cooperation by their patients (Korsch & Negrete, 1972). Stewart (1995) reports that difficulties in communication are related to problems of diagnosis, a lack of patient involvement in the

discussion, or the inadequate transmission of information to the patient. Studies have shown that 50% of the psychosocial and psychiatric problems are neither elicited by the doctor nor offered by the patient (Stewart, 1995). These studies also show that patients and their doctors often do not agree on the main presenting problem, and that patients are very dissatisfied with the information that they receive from physicians (Stewart, 1995).

The findings in the above studies point to the conclusion that difficulties in doctor-patient communication are common and deserve serious attention. Therefore, it is beneficial to study the processes of physician-patient communication. Such a study could give greater insight into how such difficulties in doctor-patient communication can be resolved, and may even lead to an improvement in the delivery of medical care.

Characteristics Of Physician-Patient Communication

In this section, research on six issues concerning the communication process of physician-patient interaction will be discussed. These communication processes consist of non-verbal communication, physician and patient roles, interruption, gender/age effects, information exchange, and question asking.

Non-Verbal communication.

Although verbal communication may be the most obvious in medical settings, communication between physicians and patients takes place on both the verbal and non-verbal level (Bishop, 1994). Physicians rely on observations of patient behaviour for diagnosis, and they are also concerned with their manner of interacting with the patient (what has been termed their "bedside manner") (Bishop, 1994). Similarly, patients will look to the

physician for subtle cues as to what they ought to be feeling or thinking (Ong et al., 1995). Non-verbal communication is one way in which this information is conveyed to the patient by the physician, and patients can become quite sensitive to these cues (Ong et al., 1995). Patients rely on far more than the physician's words to judge how seriously the physician views the illness, and what the patient's prospects are for recovery (Bishop, 1994). Touch, the way the practitioner looks at the patient, and tone of voice have all been identified as important non-verbal cues (Bishop, 1994).

Hall et al. (1987) believe that all face-to-face interactions (both verbal and non-verbal) carries affective behaviour, even though it may be seemingly neutral. They claim that both non-verbal and verbal affect is reciprocated between doctors and their patients (Hall et al., 1987). The extent of the affective behaviour displayed by the physician is an aspect of the physician's style of communication.

Physician and patient roles in the interaction.

Interactions between physicians and patients are governed by socially prescribed roles (Bishop, 1994). Physician behaviour is governed by society's view that physicians have a special responsibility for promoting and restoring the health of their patients (Bishop, 1994). They are expected to have a high degree of technical competence and a desire and commitment to serve their patients. In addition, they are expected to express compassion for patients' suffering, while maintaining emotional neutrality (Bishop, 1994). Patients, on the other hand, also have a specific role. When people are ill, they are often relieved of their usual social duties and take on the sick role. As well, they are expected to have a desire to get better, seek appropriate medical care, and do whatever is necessary to return to health

(Bishop, 1994).

The control of the medical interaction has long been considered an important area of investigation (Ong et al., 1995). This struggle over the role of the patient in decision making is "...often characterized as a conflict between autonomy and health, between the values of the patient and the values of the physician" (Emanuel & Emanuel, 1992, p. 2221). Studies have found that the traditional form of medical interaction, where physicians retain high control is still the most common in medical practice (Ong et al., 1995). Some researchers maintain that the physician is in control as the first and last speaker in each medical encounter (Barry, Stevenson, Britten, Barber, & Bradley, 2001). These researchers claim that since the doctor is involved in developing the topic of the exchange, the patient is inhibited from maintaining conversational flow (Barry et al., 2001). Ong et al. (1995) state that this difference in control between the physician and the patient may " stem from the patient's limited understanding of medical problems and treatment, heightened uncertainty, doctors' control of medical information, and the institutionalized roles prescribed for the doctor and the patient" (p. 910). Other researchers (Lieberman, 1996) state that the asymmetry in medical interactions stems from the fact that most physicians are unaware of the social powers they possess. According to Leiberman (1996) these powers include the ability to control resources such as prescriptions, the ability to convince a patient to comply with the medical treatment, as well as the possession of expertise with regard to the patient's illness. Physicians are thus able to influence patients in a number of ways. Hence, the competence gap between doctors and patients is an important source of power in medical encounters (Waitzkin, 1985; Waitzkin & Stoeckle, 1976). "One person's ignorance is often the basis of another's power" (Waitzkin, 1985, p. 82). In other words, the physician's ability to control

important medical information creates an asymmetry in the physician-patient relationship (Waitzkin, 1985).

The view of physician as expert and patient as in need of this expertise has a significant effect on the interaction, encouraging passivity and discouraging explicit questioning in patients (Ballard-Reisch, 1990). In fact, patients have been shown to perceive the medical decision-making authority to rest more with the physicians than with themselves (Beisecker & Beisecker, 1990).

A reflection of the authoritarian role of the physician who controls the interview process is the fact that physicians do more of the talking in a medical encounter than patients (Bain, 1979). In Bain's (1979) study, it was found that 40% of all verbal exchange between physicians and patients consisted of physician questions and their discussion of medical findings and instructions to patients. During discussions of medical matters, 80 percent of the interview was instigated by the physician (Bain, 1979). "These findings indicate that the main thrust of the physician's activity is the acquisition of facts, interpretation of symptoms and signs, and the creation of a diagnostic label, while the patient is frequently more concerned with how the physician's findings will affect social and family matters" (Bain, 1979, p. 752). Patients with chronic and continuing illnesses, as well as patients with emotional disorders, contributed a higher percentage of the verbal exchange than the average visit, which suggests that in these situations the patient has greater control over the content of the encounter (Bain, 1979).

Interruptions.

It was found that physicians interrupted patients more often than the reverse (West &

Frankel, 1991). Beckman and Frankel (1984) report that physicians interrupted the patient

after a mean time of 18 seconds from the start of the patient's narrative. Physicians intruded

on the patient's initial statements and redirected talk in over two-thirds of the medical

encounters they examined (Beckman & Frankel, 1984). It has been found that 94% of

physician interruptions result in the physician taking control of the conversation (Smith &

Hoppe, 1991). Once interrupted, fewer than 2% of patients went on to complete their

statements. A study by Li, Krysko, Desroches, & Deagle (2000) found that physicians

engage in more intrusive interruption than do patients. The premature interruption of the

patient's initial statement has the effect of making early clinical material the primary focus

for the medical encounter (Roter & Frankel, 1992; Smith & Hoppe, 1991). This approach

may hinder patients in their effort to express the full spectrum of their concerns (Irish & Hall,

1995). This poses a serious problem in the medical encounter since the physician is not only

violating the patient's turn to speak, but is also cutting off potentially valuable information

which may be necessary to achieve a correct diagnosis (West & Frankel, 1991). West and

Frankel (1991) indicate that premature interruption on the part of the physician can give the

physician an incomplete picture of the patient's illness, resulting in a misdiagnosis or

inappropriate treatment (Roter & Frankell, 1992).

On the one hand, physicians can encourage patients' full disclosure of their main

concerns by providing ongoing displays of acknowledgement (West & Frankel, 1991). On

the other hand, physicians can discourage patients from expressing their concern by

constantly interrupting them and by prematurely focusing on the first presented concern thus

narrowing the focus of the medical encounter from the outset (West & Frankel, 1991). More

evidence of physician control in the encounter is the finding that patients unsuccessfully

interrupted physicians three times more than physicians unsuccessfully interrupted patients (Li et al., 2000).

A study by Irish and Hall (1995) documented the frequency of overlapping and interruptive speech for physicians and patients to determine whether physicians verbally dominate the patients. Physicians were found to interrupt more with questions rather than statements (Irish & Hall, 1995). They also found that patients interrupted with statements rather than questions (Irish & Hall, 1995). Li et al. (2000) found that patients interrupt more with co-operative interruptions, tending more to assist or agree with the physician, or interrupting to ask the physician to clarify or explain a previous piece of information. Interruptions in this case reflect the patient's involvement in the conversation rather than a desire to dominate the physician (Irish & Hall, 1995).

Physician and patient gender/age effects.

Gender differences in physicians are apparent in the medical visit. Medical encounters with female physicians were longer and more talkative (Hall, Irish, Roter, Ehrlich, & Miller, 1994). Female physicians have been shown to offer more support, more partnership, and to conduct longer visits than their male counterparts (Hall, Irish, Roter, Ehrlich, & Miller, 1997; Barnsley et al., 1999). There is also evidence that female physicians spend more time on each patient visit than male physicians, and presumably, spend more time in direct interaction with each patient (Weisman & Teitelbaum, 1985). In addition, "Female physicians made more positive statements, used more partnership language, asked more questions about medical and psychosocial issues, emitted more back-channel responses, and smiled and nodded more" (Hall et al., 1994). Female physicians also received more

partnership statements from patients (Hall et al., 1994). Female and male physicians did not

differ in the amount of their social conversation, technical language, emotional support, or

the amount of information they gave to their patients (Hall et al., 1994).

Moreover, female physicians appear to prefer younger patients (Clark, Potter, &

McKinlay, 1991). Studies show that physicians are less effective in communicating with

both elderly and seriously ill patients (Reyez-Ortiz, 1996). Older patients are perceived as

sicker and less easily treated and generally less desirable than younger patients (Clark, Potter,

& McKinlay, 1991).

In terms of patient gender differences, female patients have been shown to be more

involved with the interaction than male patients (Meeuwesen, Schaap, & VanDerStaak,

1991). Women patients tend to report more symptoms, present more chronic illness, and

request more information than male patients (Clark, Potter, & McKinlay, 1991; Hall et al,

1994). Also, it has been reported that female patients received more information and more

empathy than male patients (Hall et al., 1994).

Information exchange.

Although information exchange is a very important aspect of communication,

physicians and patients often have different perceptions about what constitutes adequate

disclosure in medical communication (Faden, Becker, Lewis, Freeman, & Faden, 1981;

Greenfield, Kaplan, & Ware, 1985). In a study by Faden et al. (1981), it was found that only

about half of the physicians informed patients whether an alternative therapy was available

than the one they suggested. Almost 20% of physicians in this study reported witholding

information from their patients was their preferred practice, although none of the patients

reported wanting the physician to withold information from them or their families (Faden et al., 1981). The authors conclude that there is a significant discrepancy between the disclosure behaviours of the physician and the information preferences of patients (Faden et al., 1981).

Patients always want as much information as possible regarding their illness, and physicians often do not realize this (Waitzkin, 1984). Waitzkin (1984) conducted a study regarding information giving and witholding in the medical encounter. Physicians were asked to rate their perceptions of patients' desire for information and the helpfulness of this information, patients also completed a self-rating based on the same scale (Waitzkin, 1984). According to the study results, patients wanted as much information as possible and believed that this information would be helpful to them (Waitzkin, 1984). Physicians, on the other hand, underestimated patients' desire for information and underrated the usefulness of this information (Waitzkin, 1984). Waitzkin (1984) reports that in 65% of the medical encounters, doctors underestimated their patients' desire for information; in 29% of the encounters, they estimated correctly, and in 6% they overestimated patients' desire for information. Waitzkin (1984) also found that physicians devoted very little time to information giving; spending, on the average, approximately one minute in encounters of about 20 minutes in length. This study also showed that physicians overestimated the time they spent giving information to their patients (Waitzkin, 1984; West & Frankel, 1991). The physicians believed that they had spent much more time giving information to their patients than they actually did (Ong et al. 1995; Waitzkin, 1984).

As mentioned, it has been reported that patients want as much information as possible from their physicians (Beisecker & Beisecker, 1990). However, research also shows that

patients vary in their attempt to seek this information during the medical interaction (Beisecker & Beisecker, 1990). The amount of information that is transmitted by the physician to the patient is related to the physician's perception of the patient's desire for information (Beisecker & Beisecker, 1990). Although lower-class patients did not differ from better-educated patients in their reported desire for information, they asked fewer questions in medical encounters, leading doctors to assume that they had little desire for information (Beisecker & Beisecker, 1990). Contrary to the findings above, it was found in a study by Beisecker and Beisecker (1990) that patients believed that most of the medical decision-making should rest with the physician, and that they do not necessarily want to accept decision-making responsibility (Beisecker & Beisecker, 1990). The discrepancy between the desire for information and information-seeking behaviours can be explained by situational factors which play an important part in mediating the patient's attitudes and communication behaviours (Beisecker & Beisecker, 1990). Patient's information seeking behaviours can be explained through multiple factors such as "...patient attitudes and sociodemographic variables. In addition, situational factors such as type of illness, length of doctor-patient interaction, presence of a companion, first versus repeat visit, and the particular doctor seen have been found to influence patients' communication behaviours with their doctors" (Beisecker & Beisecker, 1990, p. 20).

As patients become more active in their involvement in medical decision making, they are likely to be seeking more information, more precise explanations, and more detailed instructions than the doctor may be willing to provide (Boreham & Gibson, 1978). A study by Boreham and Gibson (1978) examined the ways in which information is gained by patients and the influence of the doctor and the patient on the communication process. These

researchers found that in medical visits very few patients asked for a diagnosis, and very few patients were provided with a detailed explanation of their diagnosis (Boreham & Gibson, 1978). These results are once again contradictory to the fact that patients were interested in gaining more information concerning their illness (Boreham & Gibson, 1978). This reveals a strong inconsistency between the patient's expectation and their subsequent behaviour. Boreham and Gibson (1978) found that despite a lack of knowledge prior to the medical interview, and the expressed desire to gain information concerning their illness, the majority of patients did not have basic information about their diagnosis and treatment at the close of the consultation. One explanation provided by the researchers was that patients tend to think questioning the physician implies a lack of confidence in the physician's judgement (Boreham & Gibson, 1978). This study provides evidence that patients are not prepared to actively pursue the information they want (Boreham & Gibson, 1978).

One last point to note is that it has been found that over half of the patient's contribution to the interaction consists of information giving (Ong et al., 1995). However, much of this information giving occurs in response to questions asked by their physicians (Ong et al., 1995).

Question asking.

The way in which a question is asked in medical encounters determines the type of response received (Roter & Frankell, 1992). For example, close-ended questions evoke a response limited by the question itself, while open-ended questions allow the respondent to elaborate (Roter & Frankell, 1992). In the medical interaction, control over initiating questions can lead to interaction dominance and the potential for miscommunication (Roter

& Frankell, 1992).

Physicians initiate between 91% and 99% of the total questions asked in the medical interaction (West & Frankell, 1991). The most frequent exchange physicians engage in during the medical visit is information giving, followed by question asking (Roter & Frankell, 1992). In fact, question asking by the physician accounts for 23% of the medical interaction (Ong et al., 1995). Most questions asked by a physician are closed-ended in form (Roter & Frankell, 1992). In contrast, patients engage in very little question asking during the medical visit (Roter & Frankell, 1992). As a matter of fact, question asking by patients is less frequent than any other verbal behaviour during the interaction (Roter & Frankell, 1992, Frankell, 1990).

Patients come to the physician with requests and physicians attempt to respond to them (Bishop, 1994). Roter (1984) reports that of the entire medical interview there are very few (3%) direct medical questions initiated by the patient. Among the most prominent were requests for the treatment of psychosocial concerns (Bishop, 1994). Kess (1988) reports that "patient-initiated questions are not encouraged in medical dialogues, and patients indeed have difficulty posing questions to doctors. The fact is that the asymmetry of the relationship is reflected in who asks what and of whom" (p. 171). Roter (1984) states that question asking may be discouraged by physician cues, or by the patient's reluctance to bother the physician with too many questions.

Barriers to Effective Physician-Patient Communication

Several barriers can interfere with effective physician-patient communication (Bishop, 1994). These barriers can be a function of physician or patient behaviour, as well as

the interaction between them. The following are some barriers to effective communication.

Miscommunication caused by the physician.

There are a number of physician behaviours which can contribute to faulty communication. Most physicians believe they had been friendly to their patients during the visit, but fewer than half of the patients have the same impression (Korsch & Negrete, 1972). Good rapport between physicians and their patients facilitates mutual understanding (Bishop, 1994). Barriers to good rapport include the use of medical jargon by the physician, sociocultural differences between the patient and physician, and the misinterpretation or forgetting of information by the patient (Bishop, 1994).

The most obvious barrier to good communication is the use of technical medical language and medical jargon (Bishop, 1994 ; Korsch & Negrete, 1972; Roter et al., 1995; Taylor, 1986). Studies consistently reveal that physicians use many complex medical terms that patients do not understand. Ong et al. (1995) explain that physicians are essentially bilingual. That is, they speak their everyday native language and, at the same time, they are also very fluent in medical language (Ong et al., 1995). Most patients are unfamiliar with medical language and the excessive use of medical terminology by the physician in the medical visit can cause miscommunication. Physicians often perceive that they use less medical language than patients report (Ong et al., 1995). It may be difficult for the physician to differentiate between the two vocabularies when discussing medical information with the patient (Mintz, 1992; Ong et al., 1995). To make matters worse, medical terminology appears to have both a lay meaning and a clinical meaning, which can also become a source of misunderstandings (Ong et al., 1995). Physicians also do not typically use communication

checks to ensure that the patient understands the information the physician has given them (Thompson & Pledger, 1993). Poor communication is the result of the physician's use of technical medical language which can be confusing, distancing, and intimidating to the patient, as well as possibly decreasing the patient's participation in the interview (Cicourel, 1981; Thompson & Pledger, 1993).

Many explanations have been offered to shed light on why practitioners may use medical jargon in their interactions with patients. Taylor (1986) reports that in some cases, medical jargon might be used by physicians to keep the patient from asking too many questions. More commonly, she adds, physicians' use of jargon may be an extension of their training in medical school. Some estimates are that a physician learns 13,000 new words during their medical education (Keller & Carroll, 1994). Doctors learn a complex vocabulary in medical school and they may forget that the patient does not share this proficiency (Taylor, 1986). The overuse of jargon can also stem from the inability of the physician to estimate what the patient will understand and to evaluate the appropriate non-technical explanation (Taylor, 1986). Bishop (1994) explains that medical jargon can be used to establish physician authority, to impress the patient, or out of simple habit. Jargon limits the patient's understanding of the medical explanation (Mathews, 1983).

Physicians may not want to share information with patients during the medical encounter, causing barriers to effective communication (Stevenson et al., 2000). In a study by Stevenson et al. (2000), physicians felt that their training and experience places them in a good position to tell patients what they should do, and that sharing medical information and decision-making is not necessary.

Patients can also receive cues that their questions are not welcome by the physician

(Mathews, 1983). The physician may continue talking without paying attention to the patient's input, the physician may change the topic to avoid the patient's utterances, or use technical language (Mathews, 1983). Physicians often give minimal explanation of the illness to the patient. As a matter of fact, in only half of the cases studied was the patient told the name and effect of the prescribed drug (Mathews, 1983). "Patients often refrain from asking questions due to their impressions the staff are busy and overworked, fear of negative reactions from staff, perceptions of social distance between themselves and physicians, inability to understand medical jargon, and perceptions that nurses do not have authority to communicate information to patients" (Mathews, 1983, p. 1373).

Another way in which the physician's behaviour can impair the quality of doctor-patient communication is the depersonalization of the patient (Taylor, 1986). This non-person treatment could be intentional, to keep the patient quiet during a particularly stressful examination or procedure to enable the physician to concentrate, or it could be unintentional because the patient's illness has become the focus of the physician's attention (Taylor, 1986). Depersonalization also serves an important function in the emotional protection it provides the physician (Mintz, 1992; Taylor, 1986). As Taylor (1986) notes: "It is difficult for a practitioner to work in a continual state of awareness that his or her every action influences someone's state of health and happiness. The responsibility can be crushing. Moreover, every practitioner has tragedies - as when a patient dies or is left incapacitated by a treatment - but the practitioner must find a way to continue to practice. Depersonalization helps to provide such a way" (p. 246).

A serious drawback to effective communication is the physician's inability to establish personal rapport or empathy (Cicourel, 1981). When the patient's cultural

background is misunderstood or ignored, specific problems occur in the physician-patient

communication (Cicourel, 1981). The physician is often uncertain about the patient's

medical concern at the outset of the interview and will therefore follow an interview format

(where questions are asked and answers are given), with clusters of questions being asked to

see if a pattern begins to emerge that can be related to a specific diagnosis (Cicourel, 1981).

Miscommunication caused by the patient.

. Patients can also contribute to difficulties in communication. Illness stimulates

emotions that can hinder the patient from communicating effectively or understanding the

physician clearly (Bishop, 1994). An ill person must communicate this fact to another, he or

she must respond to specific questions and be content to be "poked and prodded while the

diagnostic process goes on" (Taylor, 1986, p. 242). They may be feeling too sick to present

their complaints effectively, and they may be feeling anxious or embarrassed about their

symptoms (Taylor, 1986). As an example, the patient's illness or anxiety can cause a

difficulty in concentration and an impairment in learning about their disease and treatment

(Taylor, 1986).

There are several other patient factors that may contribute to faulty communication

(Taylor, 1986). The patient's understanding of their disease can also be influenced by their

intelligence and experience with the disorder (Taylor, 1986). In addition patients may have a

different conception of their illness than do their practitioners (Taylor, 1986). According to

Taylor (1986), patients tend to emphasize pain and symptoms which may interfere with their

activities. Physicians, on the other hand, are generally more concerned with the underlying

illness (Taylor, 1986). Patients may misunderstand the physician's emphasis, so they may

pay little attention when essential information is being conveyed (Taylor, 1986). A more serious consequence is that they may reject the physician's advice because they believe that the physician has made an incorrect diagnosis (Taylor, 1986).

Patients can also give physicians inaccurate cues about their true concern (Taylor, 1986). Taylor maintains that, for various reasons, patients may sometimes present their most distressing symptoms as something of little concern (Taylor, 1986). The physician may consequently give the symptoms little attention, not realizing that they may be distressing the patient (Taylor, 1986).

Studies have also shown that patients can misinterpret or forget what they are told in the medical interview (Bishop, 1994). One study found that patients forget roughly one third of what they had been told by their physicians shortly after the medical visit (Bishop, 1994). Particularly disturbing is the fact that patients fail to recall approximately 56% of the instructions they had been given by the physician, and 48% of the treatment information (Bishop, 1994; Heszen-Klemens, & Lapinska, 1984). This study also found that the more information patients are given, the more they tend to forget (Bishop, 1994). Other studies have found that within a few minutes of discussing their illness with the physician, as many as one-third of patients did not recall their diagnosis, and up to one-half of patients did not understand important details about the illness or treatment (Taylor, 1986).

Miscommunication caused by aspects of the physician-patient interaction.

The characteristics of the doctor-patient interaction can also lead to miscommunication (Taylor, 1986). A major problem, as defined by Taylor (1986), is that physicians have little opportunity to receive feedback from their patients. Physicians seldom

know whether their communication with the patient was effective since they rarely discover the results of this communication (Taylor, 1986). Furthermore, Black (2000) reports that physicians rarely regard patient complaints as a learning experience, despite the fact that often the patient's goal for making the complaint is to have their concerns acknowledged, to obtain an explanation or apology, and to ensure that steps are taken to prevent recurrence. Patients also do not always return to the physician for a number of reasons: the disorder may have been adequately treated, the patient may have decided to seek another professional's opinion, the treatment may have failed but the disorder cleared anyway, or the patient may have died (Taylor, 1986). Without receiving feedback from his or her patients, the physician may never know which of these alternatives have actually occurred. The physician could believe that the diagnosis was appropriate, the treatment successful, and that the patient followed his or her instructions accurately (Taylor, 1986).

Another barrier to effective communication is the fact that the practitioner is often on a tight schedule, with other patients waiting (Phillips & Jones, 1991; Taylor, 1986). The patient's concept of important symptoms may not correspond with the physician's knowledge, and significant signs may be overlooked (Taylor, 1986). With the patient seeking relief, and the physician aiming to optimize the use of his or her time, many potential sources of miscommunication and tension can arise (Taylor, 1986). "...Patients of physicians with prior malpractice claims reported feeling rushed, feeling ignored, receiving inadequate explanations or advice, and spending less time during routine visits than patients of physicians with no prior claims" (Levinson, Roter, Mullooly, Dull, & Frankel, 1997, p. 554).

Other Barriers to Communication.

Another barrier to good communication identified by Bishop (1994) is sociocultural differences between the physician and patient. Differences such as age, social status, ethnicity, or gender could pose as a barrier to interaction (Bishop, 1994).

The medical office can also contribute to ineffective communication (Taylor, 1986). Taylor (1986) maintains that the changing structure of the health care delivery system is a contributing factor to the growing dissatisfaction with medical services. She asserts that such changes in the medical system change the nature of the physician-patient interaction. This occurs because patients can draw on services whenever they want at no charge. Such plans often rely on a referral basis in which the physician who first sees the patient will recommend any number of specialists to follow up with treatment (Taylor, 1986). These referrals become desirable to physicians since they are paid according to the number of cases they see (Taylor, 1986). Taylor (1986) concludes that this causes a colleague orientation, rather than a patient orientation, to develop. Since the patient is not directly paying for the service, the physician's income is not affected directly by the satisfaction of the patient (Taylor, 1986). This gives the physician little incentive to offer emotionally satisfying service. The physician must, however, produce high technical quality of care, since they are concerned with the amount of referrals from his or her colleagues, and physicians who make errors receive fewer referrals (Taylor, 1986). Another problem which may arise if physicians are trying to maximize the number of patients they see, is long waits and short visits (Taylor, 1986).

Models of Physician-Patient Communication

The debate over the extent of the patient's involvement in medical decision-making

has raised the question: What is the ideal physician-patient relationship? Two different types of exchange have been identified during the medical history (Stiles et al., 1979). In the first type, the physician asks closed-ended questions, the patient answers yes or no, and the physician then reflects the information he or she obtains to check its accuracy (Stiles et al., 1979). In the other, the patient presents his or her concerns through disclosures encouraged by the physician by acknowledging the patient's story (Stiles et al., 1979). In the literature, there have been many attempts to define the nature of doctor-patient communication. The following is a summary of two models of physician-patient communication that have been predominantly described in the literature to date.

The biomedical model.

The medical model which has traditionally dominated the physician-patient relationship is the biomedical model, in which the authoritative doctor solves problems and gives orders with which "good" patients passively comply (Sharf, 1988). The biomedical model maintains that all illness can be explained on the basis of medical processes such as biochemical imbalances or neurophysiological abnormalities (Bishop, 1994; Taylor, 1986). The model assumes that psychosocial processes are largely independent from the patient's illness (Bishop, 1994; Taylor, 1986).

The biomedical model has several implications that are important to the medical process. It is a reductionistic model, meaning that it reduces illness to physical processes rather than recognizing the role of social and psychological processes (Engel, 1982; Engel, 1985; Engel, 1992; Taylor, 1986). The biomedical model also incorporates the assumption of a mind-body dualism, viewing the mind and body as separate entities (Engel, 1992; Taylor,

1986). Thus, the biomedical model is essentially a single-factor model of illness, explaining

illness in terms of biological malfunction rather than recognizing that a variety of factors may

be responsible for the development of illness (Engel, 1992; Taylor, 1986). In the biomedical

model the physician alone makes the decision as to what is best for his or her patient's health

and the treatment of the patient's illness (Laine & Davidoff, 1996).

The prevailing biomedical model is reflected in the physician's focus on the discovery

and the cure of a disease, and not broadly to the social or psychological state of the patient

(Wyatt, 1991). As one physician states:

I am not interested in charming or entertaining my patients or winning a

popularity contest. I want to give them the benefit of my special knowledge and

ability. If I myself were seriously ill, I would have no difficulty in expressing my

preference for a physician who is capable of making an absolutely correct diagnosis

and who would know exactly what has to be done – rather than choose a physician

who is adept at sweet talk, or in making friends and influencing people... (Wyatt,

1991, p. 161).

Although the biomedical model has proven to be extremely useful in understanding

and treating illness (Feuerstein, Labbe, & Kuczmierczyk, 1986), many limitations have been

identified. One of the shortcomings of the biomedical model is that biochemical deviations

by no means account for every illness (Bishop, 1994). The second is that the biomedical

approach, by concentrating solely on physiological causes of the patient's illness, ignores the

influence of life situations on the person's health (Bishop, 1994). Further, it has been found

that psychological and social factors are critical in the patient's perception of his or her

illness as well as their return to health (Bishop, 1994). Another disadvantage of the biomedical model is that it does not include the patient and his or her attributes as a person (Engel, 1980). While the reliance on technical knowledge or treatment may offer the appearance of scientific objectivity, the biomedical model has been critisized for ignoring the diagnostic value of careful history taking, as well as creating a barrier to the healing value of a caring relationship (Glass, 1996; Roter et al., 1997). It seems clear that with the biomedical model being described as too narrowly focused on pathophysiology (Keller & Carroll, 1994), a new approach to the definition of disease and healing is needed. While at the same time, it is important to recognize the unquestionable advances that are a direct result of from applications of the biomedical model. As White (1988) states: "To suggest that the biomedical model may have limitations in no way diminishes the achievements of the past or the potential of the future. It is to suggest, however, that there may be broader and more inclusive ways of looking at individual and collective problems of health and disease that my also prove fruitful and...clinically helpful" (p. 19). According to White (1988), what is needed is more and broader scientific thinking and scholarship, as well as a greater collaboration with the behavioural and population-based sciences.

The biopsychosocial model.

Due to the shortcomings of the biomedical model, many theorists have argued that a new paradigm of physician-patient communication is necessary. This model must incorporate the positive features of the biomedical model, which have been so instrumental in modern medical advances, while avoiding the reductionist and mind-body dualism that unnecessarily limit the biomedical model (Ahmed, Kolker, & Coelho, 1979; Bishop, 1994;

Engel, 1980; Engel, 1982; Engel, 1992; Feurstein et al., 1986).

An alternative model suggested by Engel (1980) is the biopsychosocial model which views health and disease from a systems perspective (Bishop, 1994). As the name implies, health and illness are viewed as a consequence of the interplay of biological, psychological, and social factors (Engel, 1980; Taylor, 1986). This model considers illness within the context of the whole of the patient's life including family, work, community, and culture, then responds to any disruption at each of these levels (Suchman, & Matthews, 1988). The physician's task in this approach is to elicit and understand the patient's concerns, for the biopsychosocial model maintains that they provide clues to diagnostic and therapeutic issues relevant to the patient's problem (Smith & Hoppe, 1991). In this type of interview, the patient leads in his or her areas of expertise such as his or her symptoms, concerns, beliefs, and preferences. Only then does the physician begin to lead in his or her domain of expertise such as diagnosis and treatment of the illness (Smith & Hoppe, 1991). The biopsychosocial model also allows the patient to highlight what is most important to them at any given time in the medical encounter (Smith & Hoppe, 1991).

If the biopsychosocial model has been constructed to take into account the missing dimensions of the biomedical model, how then does the biopsychosocial model overcome the disadvantages of the biomedical model?

The biopsychosocial model, as previously mentioned, maintains that biological, psychological, and social factors are important determinants of health and illness. Thus, the model does not make a distinction between the mind and the body because both have clearly been shown to influence a person's health (Taylor, 1986). The biopsychosocial model also contrasts the biomedical model's reductionist view that illness should be regarded as a

deviation from a healthy state, and that illness is simply a product of physiological abnormalities (Taylor, 1986). Instead, the biopsychosocial model places equal emphasis on both health and illness (Taylor, 1986). By allowing the patient to become active participants in the medical interview, rather than passive recipients of medical care, patients become empowered to make decisions about their own health (Laine & Davidoff, 1996). Taylor (1986) concludes that this more inclusive and interactive model of health and illness will lead to an improvement in the overall quality of health care, as well as improved health care outcomes such as patient satisfaction and compliance with medical advice.

Satisfaction and Treatment Outcomes

    Patient satisfaction.

Psychosocial communication is positively and consistently associated with all aspects of patient satisfaction (Bertakis et al., 1991; Buller & Buller, 1987). Both open and closed-ended questions about biomedical topics have been negatively related to patient satisfaction, as opposed to open and closed-ended questions regarding psychosocial topics, which are positively related to patient satisfaction (Bertakis et al., 1991). Lower satisfaction is related to physician dominance of the conversation during the visit (Bertakis et al., 1991; Roter et al., 1997). Friendliness and interest expressed in the medical interview are positively related to patient satisfaction (Bertakis et al., 1991). Patients seem to show a strong preference for physicians who have a warm and expressive style. Patient satisfaction is highly related to physician courtesy and expressions of warmth, physician active listening behaviour, volunteering of information to the patient, providing explanations of the patient's condition, and expressing emotional support and trust in the patient (Ben-Sira, 1980; Bensing, 1991;

Comstock, Hooper, Goodwin, & Goodwin, 1982; Hall et al., 1988; Korsch & Negrete, 1972; Rowland-Morin & Carroll, 1990). Satisfaction ratings also showed that patients prefer physicians with a consultative communication style than with an authoritative approach (Bradley et al., 2001).

Patients who are permitted to tell their own stories and ask clarifying questions, while the physician gives feedback about the illness, seem to be more satisfied with the interaction (Evans, Stanley, & Burrows, 1992; Stiles et al., 1979). Furthermore, a more satisfied patient may be inclined to participate in the medical process more effectively and behave in ways which promote his or her recovery (Hall et al., 1993).

Other communication factors found to effect patient satisfaction are relationship maintenance, professional competence, waiting time, and social etiquette (Schneider & Tucker, 1992). However, these factors have been found to be less strongly correlated with the patient's general satisfaction than the patient's perception of how thoroughly, considerately, and humanely they were treated (Murphy-Cullen & Larsen, 1984). In addition, insufficient, contradictory, or confusing information presented by the physician has been linked to patient dissatisfaction with medical care (Simpson et al., 1991; Waitzkin & Stoeckle, 1976).

Physician satisfaction.

Like patient satisfaction, physician satisfaction offers important insights in the doctor-patient relationship and the process of medical care. Unlike patient satisfaction however, relatively few studies have been published regarding physician satisfaction with patient encounters (Suchman, Roter, Green, & Lipkin, 1993). The research that has been done

describes a variety of potential determinants of physician's overall satisfaction. In a study by Suchman et al. (1993) four distinct and independent factors emerged with regards to physician satisfaction. These factors included the quality of the patient doctor relationship, the adequacy of data collection, the appropriate use of time during the visit, and the patient's non-demanding and co-operative nature (Roter et al., 1997).

Hall, Roter, Milburn, & Daltroy (1996) have found that physicians are also less satisfied with visits involving sicker or more distressed patients. Physicians reported increased dissatisfaction when treating patients whom they were unable to help (Mawardi, 1979). However, the greatest source of dissatisfaction for physicians was reported to be the lack of leisure time as well as time pressures at work (Mawardi, 1979).

Interestingly, physicians are also frustrated with recent advances in medicine (Bishop, 1994). As medical technologies advance, patients have increased their expectation of the doctor's ability to deal with medical problems (Bishop, 1994). These expectations may reach unrealistic heights and may in fact place considerable pressure on the physician to cure all conditions presented to them (Bishop, 1994). Physicians are also concerned with their effectiveness in the physician-patient interaction. It has been reported that physicians are dissatisfied with their own effectiveness as communicators in one out of every four medical encounters (Inui & Carter, 1985).

Patient outcomes.

The interpersonal communication between patients and physicians has crucial implications for patient care and outcomes (Hall et al., 1993). Effective patient-physician communication can lead to patient satisfaction, greater recall of the physician's advice, better

compliance with medical regimens, and less "doctor shopping" (Hall et al., 1993). There have been many other outcomes which have been identified as important results of the medical visit such as recovery from illness and compliance with the medical regimen (Hall et al., 1993).

Effective physician-patient communication aids in the recovery process because it provides reassurance to the patient through the relief of anxiety and a heightened sense of personal control over events (Hall et al., 1993). These effects can be accomplished through the provision of information by the physician and through affective communication (Hall et al., 1993). In a study by Thomas (1987), the relationship between physician-patient communication and patient recovery was studied. The researchers chose to observe minor patient illnesses that were expected to resolve spontaneously without treatment. However, two weeks after the medical visit, 61% of the patients receiving a negative consultation reported that they were not better (Thomas, 1987). Thomas (1987) concludes that "there is a point in being positive: patients who present with minor illness show greater satisfaction, and are more likely to have recovered from their illness within two weeks if they receive a positive rather than a negative consultation" (p. 1201). The author warns, however, that a good doctor patient relationship alone is not sufficient to ensure recovery from illness (Thomas, 1987).

Patients who are active participants in medical decision-making are more prepared to enact health promoting behaviour (Speedling & Rose, 1985). Patients who feel a lack of control over their medical encounter may be less likely to comply with medical regimens prescribed by the physician due to feelings of helplessness and an inability to exert influence over the situation (Speedling & Rose, 1985). A review of studies by Stewart (1995) revealed

that effective communication has a positive influence on the emotional health of the patient, as well as on symptom resolution, functional and physiological status, and pain control.

Another negative consequence of ineffective physician-patient communication is non-cooperation of the patient with the prescribed medical regimen. Faulty communication is not just an unfortunate casualty of the increasing complexity of medicine, it also produces outcomes that threaten health, since dissatisfied patients are less likely to use services in the future. Patients are more compliant when they have made a decision to comply, when they feel their practitioner cares about them, when they understand what to do, and when they have received clear, written instructions (Taylor, 1986). Studies show that non-compliance with medical treatment regimens is high, ranging from 46% to 62% percent in studies of compliance with drug regimens, 50% in keeping medical appointments, and 4% to 92% with health-promotion acts (Burgoon et al., 1990; West, 1990).

Patient co-operation is highest when the treatment is short in duration, relatively simple to follow, requires few changes in the patient's routine, is effective in reliving symptoms, has few side effects, and is relatively low in cost (Bishop, 1994; Klingle & Burogoon, 1995). The patient's compliance has also been shown to depend on an atmosphere of active partnership with the physician rather than helpless and passive recipient (Buller & Buller, 1987; Ford, Hall, Ratcliffe, & Fallowfield, 2000; Kess, 1988;).

Overall, studies found that physician behaviour is crucial to the physician-patient interaction. A positive outcome depends on physician behaviour which is facilitating rather than dominating (Stewart, 1984).

Satisfaction and length of visit.

Studies have found no significant relationship between patient satisfaction and the length of the medical visit (West & Frankell, 1991). Longer visits did not result in patient satisfaction or an improvement in the clarity of the information presented by the physician (West & Frankell, 1991). On the contrary, longer visits were generally indicative of communication failures which required extra time to resolve (West & Frankell, 1991). Physicians are also less satisfied with longer visits, especially when the length of the visit is a result of the patients talking more (West & Frankell, 1991).

In general, good interviewers spend about the same time with their patients as do poor interviewers, but gather more useful information from the patient (Lipkin et al., 1984). Indeed, patient satisfaction was specifically associated with interactions which allowed patients to tell their story in their own words, not merely with interview length (Stiles et al., 1979).

Doctors are generally judged by how they communicate more than other factors such as the amount of time spent in the medical visit as well as their perceived technical competence (Stiles et al, 1979; Taylor, 1986). It is evident that the quantity of time spent in the interaction is not as important as the quality of the medical interaction. Lipkin et al. (1984) report that the time spent in an interview is not as important as the communication style of the physician.

It has been found that, despite many physician's fears that eliciting patient psychosocial concerns will lead to unmanageably long visits, allowing the patient to discuss psychosocial concerns does not lead to significantly longer visits (Roter et al., 1995; Roter et al. 1997).

Malpractice suits.

Malpractice suits are crucial to physicians, insurance companies, and hospitals that seek to provide a high quality of patient care and to minimize liability risk (Levinson et al., 1997). Patient satisfaction plays a large part in the amount of malpractice claims (Levinson et al., 1997). When a bad outcome occurs, patients and their families are more likely to sue a physician if they feel that the physician was not a good communicator (Levinson et al., 1997). In fact, it has been observed that more than 90% of patients' formal complaints about their medical care focus on the way that health professionals communicate with them (West, 1990). Ineffective communication between physician and their patients may lead to patient dissatisfaction, anger, and possibly litigation (Levinson et al., 1997).

Levinson et al. (1997), in a study of physician behaviours associated with malpractice history, found that physicians with a history of malpractice claims spent less time with their patient in routine visits than those physicians without a history of claims. Research shows that patients who sue their physicians report feeling rushed and hurried during the medical visit (Levinson et al., 1997). Physicians without a history of malpractice claims also used more orienting statements and facilitative comments which helped the patient develop appropriate expectations regarding the medical visit (Levinson et al., 1997). These techniques make the patient feel that the physician cares for them. The authors conclude that the content of what the physician says may be less important than the process and tone of the medical visit for predicting malpractice claims (Levinson et al., 1997).

As Taylor (1986) stated: "The fact that faulty patient-practitioner communication appears to be so widespread and the fact that it is clearly tied to problematic outcomes such

as dissatisfaction with health care, noncompliance with treatment regimen, and malpractice litigation suggest that improving the communication process should be a high priority for [medical] practitioners" (Taylor, 1986, p. 256).

Education

From the discussion above, it can be determined that effective communication skills are an important aspect of physician-patient interactions. The following is a summary of the role of medical education in training physicians to become more effective communicators, as well as look at the role of patients in improving communication between themselves and their physicians.

Physician education.

There is increasing recognition among medical educators with regards to the importance of courses in the psychosocial aspects of medicine, which were once thought to be an extraneous aspect of medical schools (Laine & Davidoff, 1996).

Studies of medical school curricula show that learning to communicate with patients has not been a high priority (Wyatt, 1991). There has been an absence of concrete advice on improving physician-patient communication (Taylor, 1986). It was found that medical professionals actually spend very little time talking to patients on hospital rounds (Wyatt, 1991). Taylor (1986) states that the reason for this absence is perhaps the notion that bedside manner is just an art or knack that a physician either had or did not have. The assumption in medical schools has been that common sense will provide interaction skills (Wyatt, 1991). Under the current practices for medical education, medical students are taught a "textbook set

of probabilities for diagnosing and treating patients" (Greenlick, 1992, p. 1646) and the "art" of communication in medical practice is left to the physician's own intuition (Korsch & Negrete, 1972).

Studies have shown that medical students begin their education with idealistic goals, but they become increasingly cynical the longer they have been in training in medical school (Taylor, 1986). This increasing pessimism may be due to the fact that they have little contact with patients during the early years of medical school and the greater emphasis on technical proficiency (Taylor, 1986).

Most medical schools have now incorporated communication skill training in their curricula (Bertakis et al., 1991; Cicourel, 1981; Clark et al., 1991; Hall et al., 1994; Reyez-Ortiz, 1996). Since the 1960's there has been a dramatic increase in the number of courses that teach physician communication skills as a formal component of the medical curriculum (Rowland-Morin & Carroll, 1990). A survey of 111 United States medical schools revealed that 96% of institutions reported formal courses in communication skills in their curricula (Kahn, Cohen, & Jason, 1979).

New programs are making an attempt to overcome the difficult circumstances under which patients and physicians interact (Bishop, 1994). These programs aim to lower the barriers to communication by putting a greater emphasis on the human side of medicine early in medical training (Bishop, 1994). Some programs focus on the patient-practitioner relationship from the beginning of medical school through course work and hands-on experience (Bishop, 1994). Students in these programs are required to complete courses in the social sciences and humanities in addition to the usual biomedical courses (Bishop, 1994). Groups of students accompany physicians on hospital wards from the beginning of

their medical training (Bishop, 1994). The purpose of these programs is to teach students to focus on the patient instead of the disease itself (Ahmed et al., 1979; Bishop, 1994; Boreham & Gibson, 1978; Cassel & Skopek, 1977).

There is evidence that communication skills can be effectively taught to physicians and medical students (Roter et al., 1995). Studies have shown that physicians who have been trained in communication skills recognize more psychosocial problems in their patients and use more strategies to reduce emotional problems in their patients for as long as 6 months after the visit (Roter et al., 1995). "These results were not associated with longer medical visits or increased utilization of medical services" (Roter et al., 1995, p. 1883). Taylor (1986) suggests that communication programs should emphasize the development of skills that can be learned and applied easily. These programs aimed at improving physician-patient communication should also be taught in a setting which is similar to situations in which the skills will be eventually used (Taylor, 1986). Once basic communication skills are taught, they should be practiced by medical students so that they may be automatically used over time (Taylor, 1986). Research has shown that communication skills can indeed be learned, and are not just a knack or innate ability of the physician (Taylor, 1986).

Trained physicians have been found to be successful in incorporating the skills they learned into their routine medical encounters with patients (Roter et al., 1995). The researchers conclude that training in communication skills helped the physicians become more effective in the process of psychosocial interaction (Roter et al., 1995). The effects of active listening can help contribute to the recovery process by enabling the patient to feel acknowledged, supported, and less isolated (Roter et al., 1995).

Patient education.

Until recently training programs aimed at improving doctor-patient communication have been created with the physician mind. Very few training programs have been designed for the purpose of developing and improving the communication skills of patients (Sharf, 1988). Attempts at educating patients have concentrated on giving disease oriented information only (Sharf, 1988). However, it has been shown that educating patients with regard to improving physician-patient communication is highly effective (Stewart, 1995).

Patients can be taught to become more involved in the physician-patient interaction (Greenfield et al., 1985). By being a more active participant in the conversation, patients can obtain more information from their physician, express more affect and opinion, and become more interpersonally engaged with the physician (Greenfield et al., 1985).

Sharf (1988) argued for the pressing need to educate patients on developing communication skills which will teach them how to fully participate in the medical interaction. Patients are instructed to maintain their own medical records for the purpose of being able to report more efficiently and accurately to the physician, this will also serve to enhance the patient's sense of ownership and responsibility of their wellbeing (Sharf, 1988). Patients should also learn how to describe their medical problem in a clear and concise manner (Sharf, 1988). To further improve the effectiveness of his or her relationship with the physician, the patient should become trained in how to ask questions, clarify confusing medical language, present sensitive issues, insist on complete and understandable explanations, and persist in the telling of his or her list of problems (Sharf, 1988).

The Present Study

Improving doctor-patient communication should become a priority in the Prince George community. In 1995, the Culture and Health 2000 Working Group Prince George was formed. Comprised of thirty individuals representing various community organizations, this working group performed a needs assessment in the community by examining existing health care and community services, as well as interviewing both health service providers and health care users regarding the quality of health care in Prince George. The working group identified the quality of health care in Prince George as a major area of concern for the community. As well, poor doctor-patient communication was identified as a barrier to quality health care. The recommendations of the Culture and Health 2000 Working Group serve to prove that it is necessary to study the processes involved in doctor-patient communication in the Prince George community.

This project aims to explore patterns of communication between physician communication and patient satisfaction in the Prince George community. The purpose of this study were (a) to describe patterns of communication between doctors and their patients, and (b) to examine the association between physician communication patterns and patient satisfaction which included patient overall satisfaction, as well as patient satisfaction with the physician's expertise, affective, and communication skills.

Method

Context

This study was conducted at the Prince George teaching site of the University of British Columbia, Department of Family Medicine. Under the British Columbia medical care plan, a general practitioner is permitted to see approximately twenty patients per day and charge $26.00 per patient for a regular visit.

Physician Participants

Six Caucasian male physicians who practiced in this clinic agreed to participate in this study. No intern was recruited as interns are paid on a salary basis and therefore might be less concerned with the length of the medical visit interview than a general practitioner who is paid on a fee for service basis.

The physician participants had been practicing medicine for an average of 14.87 years (SD = 4.72). Of the six physician participants, two were between the ages of 30 to 39, and 4 were between the ages of 40 to 49. When asked whether they enjoy their profession in general, 3 of the physicians indicated that they "sometimes" enjoy their profession, 2 indicated that they enjoy their profession "most of the time", and 1 indicated that he enjoys his profession "very much".

Finally, it is important to recognize the role of the physicians in this sample as educators in the teaching clinic. The physicians in this sample are very familiar with and use a patient-centered method in their practice. Therefore, it is important to point out that the physician's

approach to the medical visit is different in this clinic than the approach of physicians in general practice.

Patient Participants

Also participating in this project were adult patients of these physicians. It was decided that only patients who had at least two prior visits with the physician were eligible. The number of prior visits is important to this study since the conversations between those patients visiting the physician for the first time will be different than those patients who have had prior visits with the physician. For example, first visits between physicians and patients will likely include more introductory statements and more questions regarding the patient's medical history than subsequent visits. As well, patients who were visiting the clinic for emergency medical care were excluded from the study.

Of the 31 participants in this study, 13 were male, and 18 female. Patients ranged from 16 to 78 years of age, with an average age of 47 (SD 17.92). Patient participants had visited the physician a median of 3 (SD = 5.01, Skewness=2.10) times in the past 6 months. When asked to rate their health, 23% of patients rated their health as "Excellent", 35.5% as "Good", 35.5% as "Fair", and 6% did not respond. Approximately half of the patients (48.4%) were employed. Thirteen percent of these patients were employed in a professional capacity, 10% in a clerical capacity, and 22.6% in a labour capacity. Most of the patients had completed high school (54.8%), 19.4 % had completed college, 12.9% completed university, and 6.5% had completed public school. Almost all of the patients (90.3%) reported English as their first language.

To protect confidentiality, the physicians and their patients were identified with a code number. This number was the only identifying feature that appeared on any of the forms they completed.

Materials

For teaching purposes, there was a videotape machine and camera set up in the examining rooms in the clinic to record visits between physicians and patients. This study used the videotape machines to audio record conversations between physicians and patients participating in the study (the camera was turned off to maintain the confidentiality of participants).

Physicians were required to complete a consent form (Appendix A) and a demographic information form (Appendix B). Similarly, patients were required to complete a consent form (Appendix C) in addition to a questionnaire (found in Appendix D) which included sociodemographic and health status questions, as well as 43 items that measured patient satisfaction with the medical encounter. The patient questionnaire was modified from a patient satisfaction questionnaire used in a study by Roter et al (1997). A study by Hall et al (1997) found the reliability of the patient questionnaire to be quite high with Cronbach's alpha being 0.93 for this instrument.

Procedure

One of the researchers in the study, also a physician at the clinic, obtained consent from the physician participants. Two other researchers approached patients as they walked into the clinic, asking them to participate in the study. After explaining the purpose of the study,

patients were asked which physician they were visiting, whether they were older than 16, whether their visit was an emergency visit, and how many times they had visited this physician. If the participant was eligible, he or she was informed of the procedure of the study, and that his or her medical visit would be audiotaped. Patients who agreed to participate were asked to read and sign a consent form (Appendix C). Patients were then assigned a code number, and were informed that they would only be identified by this number.

For confidentiality reasons, the office receptionists offered to note the patient code and physician code number on the videotape. The receptionist was asked to turn the videotape machine on before the visit, and to turn it off after the visit had ended. Both the physician and the patient were asked to complete questionnaires immediately after the visit had ended.

Unfortunately, due to the malfunction of some of the recording machines and the fact that the office receptionist was often quite busy, some of the conversations were not recorded. Some physician questionnaires were also not completed. In addition, there were a few patients who refused to fill in their questionnaires after the completion of the visit.

In total, 85 patients agreed to participate in this study. Of these, 39 physician-patient visits were tape recorded, and 6 patients and 4 physicians did not complete their questionnaires. In addition, one conversation could not be used because the mental health of the patient was questioned (A chart indicating which data was obtained can be found in Appendix E). After eliminating the above conversations, there were 31 conversations that could be included in this study.

Data Scoring

The Roter Interaction Analysis System (Roter, 1997) was used to score the data. This system has been derived from the work of Bales (1951) for assessing small group interaction. The Roter Interaction Analysis System (RIAS) is a method of coding doctor-patient interaction during the medical visit. In this system, the categories are coded specifically "to directly reflect the content and context of the routine dialogue between patients and doctors during medical exchanges" (Roter, 1997, p. 1), and take into account the emotional context of the medical visit beyond the content of the words spoken. A comparison of various doctor-patient interaction analysis by Inui et al (1982) concluded that the Roter Interaction Analysis System is best suited in the analysis of clinical encounters because it identifies relevant task-related verbal behaviours, as well as focuses on the affective content of the encounter. The authors contend that the RIAS is the preferred method especially if outcomes of the experiment are to be measured in terms of patient satisfaction (Inui et al, 1982). Many studies (Inui et al, 1982; Bertakis et al, 1991; Hall et al, 1997) have demonstrated adequate intercoder reliability for the RIAS with the average correlation for physician categories being 0.78, and for patient categories being 0.81.

For the purposes of this project, an utterance (the smallest string of words with meaning) was used as the unit of analysis. This unit can vary from a lengthy sentence to a single word in length. In this study, utterances were coded according to the categories derived from the study by Roter et al. (1997). Using the transcripts and audiotapes from each visit, every utterance by either physician or patient was coded into one of 40 mutually exclusive categories. The abbreviations for the categories used on the transcripts and coding forms are listed in Table 1.

Table 1

Categories of the Roter Interaction Analysis System (Roter et al., 1997)

Abbreviation	Category
Personal	Personal remarks, social conversation, greetings
Laughs	Laughs, tells jokes
Approve	Shows approval – direct to person present
Comp	Gives compliment – not direct to person present
Agree	Shows agreement or understanding
BC	Back-channel responses (physician only)
Empathy	Shows empathy towards the other
Concern	Shows concern or worry
R/O	Reassures, encourages or shows optimism
Legit	Legitimizes
Partner	Makes a partnership statement (physician only)
SDis	Makes a statement of self-disclosure (physician only)
Disapprove	Shows disapproval or disagreement – direct to person present
Crit	Shows criticism – general, not direct to person present
?Reassure	Asks for reassurance
Trans	Transition words
Orient	Gives orientation, instructions
Check	Paraphrase, checks for understanding
?Bid	Bid for repetition

Table 1 (continued)

Categories of the Roter Interaction Analysis System (Roter et al., 1997)

Abbreviation	Category
?Understand	Asks for understanding
?Opinion	Asks for opinion (physician only)
[?]Med	Asks questions (closed-ended) – Medical condition
[?]Thera	Asks questions (closed-ended) – Therapeutic regimen
[?]L/S	Asks questions (closed-ended) – Lifestyle
[?]P/S-F	Asks questions (closed-ended) – Psychosocial-Feelings
[?]Other	Asks questions (closed-ended) – Other
?Med	Asks questions (open-ended) – Medical condition
?Thera	Asks questions (open-ended) – Therapeutic regimen
?L/S	Asks questions (open-ended) – Lifestyle
?P/S-F	Asks questions (open-ended) – Psychosocial-Feelings
?Other	Asks questions (open-ended) – Other
Gives-Med	Gives information – Medical
Gives-Thera	Gives information – Therapeutic regimen
Gives-L/S	Gives information – Lifestyle
Gives-P/S	Gives information – Psychosocial (Patient only)
Gives-Other	Gives information – Other
C-Med/Thera	Counsels or directs behavior – Medical condition/Therapeutic Regimen

Table 1 (continued)

Categories of the Roter Interaction Analysis System (Roter et al., 1997)

Abbreviation	Category
C-L/S-P/S	Counsels or directs behavior – Lifestyle/Psychosocial (Physician only)
?Service	Requests for services or medication (Patient only)
Unintell	Unintelligible utterances

The transcripts of the medical visits were coded using the abbreviations found in Table 1. The total physician and patient utterances in each category were then calculated using the coding form in Appendix F.

In the study by Roter et al. (1997), summary groupings of the RIAS coding categories were used. The above categories were summarized into composite communication behaviours that relate broadly to the content, affect, and process dimensions of the visit. According to Roter et al. (1997), these composite communication behaviours include: closed-ended questions, open-ended questions, biomedical information exchange, psychosocial information exchange, positive talk, negative talk, social talk, facilitation statements, and orientation statements. The present study also used these composite communication behaviours listed in Table 2.

Table 2

CompositeCategories of the Roter Interaction Analysis System (Roter et al., 1997)

Functional grouping	Composite communication behav.	RIAS coding categories
Content categories	Questions – close ended	[?]Med, [?]Thera, [?]L/S, [?]P/S-F, [?]Other
	Questions – open ended	?Med, ?Thera, ?L/S, ?P/S-F, ?Other
	Biomedical information	Gives-med, Gives-Thera, C-Med/Thera, ?Service
	Psychosocial exchange	Gives-L/S, Gives-P/S, C-L/S-P/S, SDis, ?Reassure
Affective categories	Positive talk	Laughs, Approve, Comp, Agree, Empathy, R/O, Legit, Partner
	Negative talk	Concern, Disapprove, Crit
	Social talk	Personal
Process categories	Facilitation	BC, Trans, Check, ?Bid, ?Understand, ?Opinion
	Orientation	Orient

The proportion of utterances for physicians and patients were calculated for each

communication behaviour composite using the coding form in Appendix G. First, the

number of utterances in each category were added together to obtain a total for the

corresponding communication behaviour. For example, the total number of "Concern",

"Disapprove", and "Crit" utterances made by the patient were added together to form a total

score for the amount of "Negative Talk" by the patient during the medical visit.

The proportion for each communication behaviour was then calculated by dividing

this score by the total number of utterances in the medical visit (found at the bottom of

Appendix A), and multiplying by 100. To continue the example above, the total "Negative

Talk" by a patient was divided by the total number of physician and patient utterances and

multiplied by 100. The proportion for each physician and patient communication behaviour

was then divided by the number of utterances for either the physician or patient and

multiplied by the grand mean of all utterances to obtain a rate for the communication

behaviour. For example, the rate for patient "Negative Talk" was determined by dividing the

proportion for patient "Negative Talk" by the total number of patient utterances and

multiplying by the grand mean of physician and patient utterances.

Patient Satisfaction

To determine overall satisfaction two variables were combined to determine general

patient satisfaction. Patient question #1 "this was a very satisfying visit for me" and patient

question #10 "I'm very satisfied with the medical care I received". Patients were requested to

respond on a scale of 1 to 5 to these two questions following their visit. Approximately 90%

of patients "agreed" or "strongly agreed" that the visit and medical care they received were

satisfying. None of the patients responded that they were unsatisfied with the visit or the

health care they received.

A new variable named "Overall Satisfaction" was created from the above two

variables. Patient satisfaction is a latent variable which is made up of two manifest variables: whether the patient is satisfied with that specific visit, and whether the patient is satisfied with the health care he or she receives in general. Before the latent variable was computed, item analysis was used to test the reliability of the scale. The reliability coefficient, Cronbach's alpha, was 0.81, indicating a fairly high level of reliability. There is a positive correlation between the two variables: $r=0.68$, $p<0.01$. This positive correlation shows that there is a strong relationship between the two questions, and that they both measure related concepts with regards to patient satisfaction with the visit.

Similarly, other latent variables of patient satisfaction were created using the categories outlined in Evans, Stanley, and Burrows (1992). These latent variables combined questions from the patient questionnaire which measured the patient's satisfaction with the physician's level of affect, expertise, and communication. Please see Appendix H for percentage of responses to each of the patient questions. The questions from the patient satisfaction questionnaire which are combined to create each latent variable (affective satisfaction, expertise satisfaction, and communication satisfaction) are outlined in Table 3. Chronbach's alpha for these latent variables were 0.77 for affective satisfaction, 0.90 for expertise satisfaction, and 0.90 for communication satisfaction.

Table 3

Patient Satisfaction Latent Variables

Latent Variables	Patient questions
Affective satisfaction	3. My doctor encouraged me to talk
	5. My doctor was not able to give me his/her full attention
	7. My doctor and I laughed and joked together during my visit
	11. My doctor really seemed to care about me and my health problems
	14. My doctor told me all I wanted to know about my condition And treatment
	15. I felt comfortable asking my doctor questions
	17. My doctor seemed to be in a hurry
	24. My doctor made me feel important
	25. My doctor acted bossy and domineering at times during my visit today
	26. My doctor was friendly and warm
Expertise satisfaction	2. My doctor was very careful to check everything when Examining me
	9. My doctor has a good understanding of my past health History
	15. I count on my doctor to set my mind at ease when I'm worried about my health
	18. My doctor was aware of my most important health problems
	19. I have health problems which should have been discussed today but were not
	20. My doctor asked for my opinion when trying to decide on the best way to treat my problem
	27. My doctor is competent and well trained
	28. My doctor was as thorough as he/she should have been
	29. I have great confidence in my doctor

Table 3 (Continued)

Patient Satisfaction Latent Variables

Latent Variables	Patient questions
Communication satisfaction	4. My doctor frequently interrupted me
	6. My doctor missed important information that I gave him/her
	8. My doctor asked whether I understood the information he/she gave me about my condition
	12. My doctor explained things in words I could understand
	13. My doctor told me exactly what he/she planned to do next in my treatment
	19. My doctor encouraged me to tell him/her everything I thought important
	22. My doctor clearly explained why I should do the things he/she asked me to do
	23. My doctor answered all of my questions
	30. My doctor understood what I was telling him/her about my problem
	31. My doctor explained my medical problems to me

Inter-scorer Reliability

Two scorers independently coded the data according to the data scoring system

detailed above. The second scorer scored 15% of the data, which was then compared to the

scoring of the same data by the first scorer. The inter-scorer reliability (Pearson Correlation)

was $r = 0.94$, $p<0.01$.

Results

Length of Conversation

After examining the data, it was found that the average medical visit lasted for 544.61

seconds (approximately 9 minutes) with a standard deviation of 255.43 seconds

(approximately 4.25 minutes). There was no difference between physicians and patients in

the number of words $t(30) = 0.79$, $p>0.05$, or utterances $t(30) = -0.21$, $p>0.05$ spoken during

the medical encounter.

There was no significant correlation between the length of conversations and any of

the satisfaction latent variables.

Physician and Patient Demographic Information

The physician's number of years in practice correlated positively with the rate of

doctor biomedical talk ($r=0.45$, $p<0.05$) as well as the rate of patient positive statements

($r=0.50$, $p<0.01$). The physician's age is positively correlated with the length of conversation

($r=0.38$, $p<0.05$), the rate of physician's biomedical talk ($r=0.45$, $p<0.05$), and rate of patient

positive statements ($r=0.56$, $p<0.01$).

In addition, there were two interesting findings with regards to patient demographic

variables. First, the patient's communication satisfaction variable is negatively correlated

with whether or not the physician reportedly enjoys his profession ($r=-0.49$, $p<0.05$). The

patient's rating of his or her own health also negatively correlated with their overall

satisfaction ($r=-0.51$, $p<0.01$), as well as their affective ($r=-0.51$, $p<0.01$) and communication

($r=-0.44$, $p<0.05$) satisfaction variables.

Patterns of Conversation

The mean and standard deviation was calculated for each of the categories of communication for both the physician and patient. The results are presented below in Table 4. Please refer to the data scoring section for a description of the categories of physician and patient conversation.

Table 4

Means and SDs for Physician and Patient Categories (N=31)

Category	Physician		Patient	
	Mean	SD	Mean	SD
Questions – close ended	19.28	11.33	1.90	2.37
Questions – open ended	5.19	3.41	1.12	1.88
Biomedical information	41.98	19.77	61.55	25.05
Psychosocial exchange	4.26	6.08	25.48	16.98
Positive talk	40.54	14.85	38.80	19.50
Negative talk	3.15	3.03	5.12	5.21
Social talk	7.74	7.23	7.99	13.47
Facilitation	24.74	9.18	5.25	4.18
Orientation	10.34	7.32	0.58	1.13

A paired samples t-test was performed on each category to determine if patients and doctors differ in their patterns of communication during the medical visit. It was found that doctors and patients do differ on all categories except for the amount of positive and social talk. The results are presented in Table 5 below.

Table 5

Differences in Physician and Patient Categories (N=31)

Categories	t	df	Sig. (p<0.05)
Questions – close ended	8.29	30	0.00
Questions – open ended	5.13	30	0.00
Biomedical information	-3.79	30	0.00
Psychosocial exchange	-7.32	30	0.00
Positive talk	0.44	30	0.66
Negative talk	-2.11	30	0.04
Social talk	-.013	30	0.89
Facilitation	10.82	30	0.00
Orientation	7.20	30	0.00

The proportions of the patterns of communication by both physicians and patients during the medical visits were determined by calculating the percentage of each category from the total mean of physician and patient talk. To obtain these percentages the mean for each category of conversation was first calculated (see Table 4). These means were then added to obtain a total of 157.22 for the physician categories and 147.79 for the patient categories. The percentages were derived by dividing the mean of each category by the total mean, and multiplying by 100. These percentages are summarized in Table 6.

Table 6

Percentage of Physician and Patient Categories (N=31)

Category	Percent of total conversation	
	Physician	Patient
Questions – close ended	12%	1%
Questions – open ended	3%	0.7%
Biomedical information	27%	42%
Psychosocial exchange	3%	17%
Positive talk	26%	26%
Negative talk	2%	4%
Social talk	5%	5%
Facilitation	16%	4%
Orientation	6%	0.3%
TOTAL	100	100

From the percentages above, it is evident that physicians spend most of the medical visit engaged in biomedical speech (27%) and positive talk (26%), which indicates that physicians spend most of the medical visit giving medical and therapeutic information, as well as making positive statements. They devote 16% of their conversation to facilitating the process and/or content of the conversation. They also spend 12% of their conversation asking close-ended questions, which direct patients to provide "yes" or "no" type answers. In addition, physicians devote 6% of their conversation making orientation statements, 5% making social statements, 3% asking open ended questions, 3% engaging the patient in a

psychosocial exchange, and 2% of their conversation is devoted to negative statements.

As for the percentage of patient conversation, it can be seen that 42% of their conversation is devoted to biomedical speech, as well as positive statements (26%), and psychosocial exchange (17%). The rest of their conversation is spent making social (5%), negative (7%), and facilitative (4%) statements. Very little of patient conversation is spent asking closed-ended (1%) or open-ended (0.7%) questions, or making orientation statements (0.3%).

Gender Differences

Gender differences in this study were measured between the gender combinations of each physician-patient dyad. Since all the physicians in this sample are male, gender combinations are measured between male physician/male patient and male physician/female patient dyads. Means and Standard Deviations for these dyads for different categories of communication are summarized in Table 7 below.

Table 7

Mean and Standard Deviation for Male/Male and Male/Female Dyads for Physician and

Patient Categories of Communication (N=31)

Category of Communication	Physician				Patient			
	Male/Male		Male/Female		Male/Male		Male/Female	
	M	SD	M	SD	M	SD	M	SD
Questions – close ended	17.33	12.19	20.69	10.80	1.06	1.81	2.50	2.59
Questions – open ended	5.46	4.00	5.00	3.01	0.95	1.39	1.24	2.21
Biomedical information	42.92	23.92	41.32	16.88	57.70	27.67	64.33	23.40
Psychosocial exchange	4.99	6.48	3.75	5.91	25.81	18.33	25.25	16.49
Positive talk	44.14	13.33	37.95	15.72	40.96	22.25	37.24	17.76
Negative talk	3.48	3.30	2.92	2.90	4.60	4.21	5.50	5.92
Social talk	7.62	8.22	7.84	6.69	8.74	19.18	7.46	7.75
Facilitation	21.17	8.76	27.34	8.81	5.41	5.36	5.14	3.26
Orientation	11.18	7.37	9.74	7.44	0.95	1.48	0.31	0.73

An independent samples t-test revealed that there were no significant differences in

any of the categories of physician or patient communication between male and female

patients. That is, physicians or patients do not differ in their patterns of talk between male

and female patients.

There were also no differences found between the gender combinations in the length

of interviews, $t(29) = -0.49$, $p>0.05$, or the total number of utterances, $t(29)=-0.02$, $p>0.05$.

In addition, there were no differences between the male/male and male/female groups in the number of utterances spoken by either the physicians, $t(29)=-0.06$, $p>0.05$, or the patients, $t(29)=0.01$, $p>0.05$.

Physician Patterns of Communication and Patient Satisfaction

Pearson Correlations were used to examine the research questions stated previously. Namely, to describe patterns of doctor communication, and to examine the association between physician communication patterns and patient satisfaction. Table 8 presents the correlations between physician communication categories and patient satisfaction variables.

It is interesting to note that there are negative correlations among some of the doctor communication categories. For example, there was a negative correlation between closed-ended questions and positive ($r=-0.37$, $p<0.05$) and social statements ($r=-0.41$, $p<0.05$). In addition, a negative correlation was found between biomedical information and positive ($r=-0.49$, $p<0.01$) and social statements ($r=-0.41$, $p<0.05$).. Finally, there was a negative correlation found between doctor facilitative and orientation statements ($r=-0.64$, $p<0.01$).

From Table 8, it can been seen that there was a negative correlation between the rate of doctor closed-ended questions and all satisfaction latent variables: overall patient satisfaction ($r=-0.50$, $p<0.01$), affective satisfaction ($r=-0.50$, $p<0.05$), expertise satisfaction ($r=-0.43$, $p<0.05$), and communication satisfaction ($r=-44$, $p<0.05$).

There was also a negative correlation between the rate of doctor facilitative statements and overall patient satisfaction ($r=-0.44$, $p<0.01$). Finally, there was a positive inter-correlation between all satisfaction latent variables.

Table 8   Correlations Among Physician Communication Categories and Patient Satisfaction Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Dr. closed-ended questions	--	.17	.35	-.31	-.37*	-.01	-.41*	.08	.14	-.50**	-.50*	-.43*	-.44*
2. Dr. open-ended questions		--	-.18	-.05	.11	-.04	-.07	.07	-.18	-.09	-.11	-.25	-.12
3. Dr. biomedical statements			--	-.11	-.49**	-.03	-.41*	.08	.09	-.14	.00	.03	.13
4. Dr. psychosocial statements				--	.22	.27	.19	-.00	-.28	.61	.21	.23	.13
5. Dr. positive statements					--	-.14	.19	.16	-.40*	.03	.24	.24	.28
6. Dr. negative statements						--	-.31	-.30	.12	.04	.12	.14	-.06
7. Dr. social statements							--	.22	-.18	.20	.32	.08	.10
8. Dr. facilitative statements								--	-.64**	-.44*	-.20	-.28	-.08
9. Dr. orientation statements									--	.14	-.03	.02	-.10
10. Pt. overall satisfaction										--	.81**	.80**	.71**
11. Pt. affective satisfaction											--	.84**	.89**
12. Pt. expertise satisfaction												--	.85**
13. Pt. communication satisfaction													--

* Correlation is significant at the 0.05 level (1-tailed)
** Correlation is significant at the 0.01 level (1-tailed)

Discussion

A number of meaningful results emerged from this study, some which supported previous research and others that were surprisingly contradictory.

Length of Interview

In this study, there was no difference found between doctors and patients in the number of words or utterances spoken during the medical visit, there was also no relationship between the length of the medical visit and any of the communication categories. This contradicts the finding by Bain (1979) that physicians dominate the interview process by doing more of the talking in a medical encounter than patients. This finding also shows that the length of the medical visits did not vary with the presence of different communication categories such as psychosocial or biomedical exchange.

The finding that the length of conversation did not have an effect on patient satisfaction is consistent with previous research which shows that longer visits do not necessarily result in increased or decreased satisfaction for the patient (West & Frankell, 1991).

Physician and Patient Characteristics

There was no difference found between the male physician/male patient and male physician/female patient combinations in any of the categories of communication. There was also no difference found between the gender combinations in terms of the length of the visit, or turn taking. These are surprizing findings given that previous research has found differences between gender combinations in terms of the structure of the medical visit (Hall et al, 1994). For example, Hall et al (1994) found that female patients received more

information and more empathy than male patients in the medical visit.

The longer a physician is in the profession and the older he is, the more biomedical talk is evident in the medical visit. The length of time the doctor in his profession as well as physician age also correlate with patient positive statements. This result may be attributed to the patients' increased respect for older and more established doctors. The physician's age is also related to the length of the conversation, with older physicians engaging in longer medical visits.

It was interesting to note that the patient's health rating had a negative relationship with overall, affective, and communication satisfaction. This shows that patients who rated their own health as poor were more satisfied with the physician's affective and communication skills. Furthermore, it shows that patients who rated their health as good were less satisfied with the physician's affective and communication skills. One explanation for this result is that healthier patients are perhaps more demanding of a physician's holistic skills and may expect more in terms of the physician's affective and communication skills. Patients with poorer health might be more concerned with the state of their health rather than the physician's affective and communication skills and therefore are more satisfied with the physician's abilities in general.

Differences in Physician and Patient Communication Categories

With regards to communication categories, physicians and patients differ significantly on the rate of all categories except for social and positive talk. Overall physicians asked more questions than patients, whereas patients hardly asked any questions at all. The questions asked by both physician and patient were of a closed-ended nature as there were very few

open-ended questions asked in the medical visits studied. Physicians also engaged in more

facilitation and orientation statement than did patients. Patients gave more biomedical

information, and engaged in more psychosocial exchange and negative talk than physicians.

Physicians engaged in very little psychosocial talk as compared to patients.

Some interesting patterns emerged when looking at the rates of communication

categories. Most of the medical visits in this study showed that the physician and patient

were both engaged in biomedical talk followed by positive talk. After biomedical and

positive talk, physicians engaged in more facilitation and closed-ended questions, while

patients engaged in more psychosocial talk.

The above results are evidence that physicians are more involved with the content and

process aspect of the medical visit while patients are more involved with the affective

relationship between themselves and the physician.

Physician communication behaviours and patient satisfaction

As mentioned previously, patient satisfaction was measured using four latent

variables: overall satisfaction, satisfaction with physician affective skills, satisfaction with

expertise of physician, and satisfaction with physician communication skills.

Closed-ended questions by the physician resulted in a decrease in all patient

satisfaction variables. The negative relationship between patient satisfaction and physician

closed-ended questions is expected and has been reported in previous research (Bertakis,

Roter, & Putnam, 1991).

Interestingly, and unexpectedly, facilitative statements by the physician resulted in

low overall satisfaction for patients. That is, patient satisfaction with the visit decreases as the

number of facilitative statements by the physician increase. Facilitative statements consist of back-channel responses, transition words, paraphrasing, checking for understanding, bid for repetition, asking for understanding, and asking for the patient's opinion. This is not an expected result since one would assume that facilitative statements are used for clarification purposes to assist in the process of communication, and therefore increase satisfaction with the medical encounter. An alternative interpretation is that excessive physician facilitative statements may be perceived by the patient as controlling, interruptive, or even condescending in the process of communication, and thus may add to the dissatisfaction of the patient during the medical visit.

Finally, there was a positive intercorrelation among all patient satisfaction variables, implying that it is important for the physician pay attention to different skills. More importantly, the study shows the expertise, affective, and communication skills of the physician are all important in the overall satisfaction of the patients. Similar to above, this result supports the findings by researchers (Taylor, 1979; Stiles et al, 1979) that patients rate the physician's communication and affective skills as important as their expertise in the technical aspect of the medical encounter.

Limitations of the study

Caution must be used when generalizing the above results because of some limitations which were present in the study. First, the majority of patients were satisfied with the medical encounter, which may have created a "ceiling effect" or a restricted range in the independent variable. Second, the clinic in which the study was conducted was established at approximately the same time as the university in the area (the University of Northern British

Columbia) and was one of the only practices that was accepting new patients in the area. This may account for the high number of more educated patients who participated in the study. This sample is also based on convenience and not on random sampling methods, and as such may not be a sample which is representative of the Prince George population. Finally, the time that the patient spent in the waiting room prior to seeing the physician was not factored into patient satisfaction. Future studies should study the effect of the length of patient waiting times on the patient's satisfaction.

Conclusion

One major finding in this study is that the content, process, and affective categories of communication differ for physicians and patients, with doctors concentrating more on the content and process categories and the patients more on the affective aspects of the medical visit. It was also found in this study that the expertise, affective, and communication skills of the physician are all important in the overall satisfaction of the patient. These findings point to the fact that there is a need for physicians to give more consideration to their affective and communication skills than they currently are.

As mentioned previously, many of the findings of this study corroborated the results of previous research. However, some surprizing findings did emerge which were contradictory or non-existent in existing studies. The most surprizing of these findings is the relationship between patient satisfaction and facilitative statements. This relationship calls for a reconceptualization of the term "facilitative" statements as the present study showed that these statements by physicians may be viewed as interruptive and intrusive by patients.

Interestingly, the length of the visits was not affected by any of the communication categories, and did not affect patient satisfaction. In this study, physicians do not dominate the conversation by talking more than the patients, and longer visits did not necessarily result in increased or decreased satisfaction for patients.

This study also found no differences between the gender combinations in the length of the visits or any communication categories. These are findings that contradict previous research that states that there are differences in the structure of the medical visit between gender combinations.

This study also contributed empirically in an important way since no interns were used in the physician sample as had been done in previous research. The exclusion of interns from the physician sample eliminates the potential effect of salary versus fee-for-service payment systems on the length of the medical interview.

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Appendix A - Consent Form For Physicians

Hello, I am currently a graduate student in psychology at the University of Northern British Columbia and I am conducting a study of doctor-patient communication patterns. If you agree to participate in this study, I will be audio taping your conversation with your patients. You will also be asked to take a few minutes after the visit to complete a short questionnaire. I would like you to know that the information you provide in the visit, as well as on the questionnaire, will be kept absolutely confidential. You will remain anonymous throughout this study. No names will appear on any of the forms or questionnaires, and you will be identified with a code number. I would like to assure you that the audio taped conversations will only be heard by the research team and will be kept in a locked cabinet when not in use.

You should feel free to refuse to participate in this study, or not to answer any of the questions on the questionnaire if you don't feel comfortable with them. You are also free to withdraw your participation from this study at any time.

If you have any questions, please phone my supervising professor Dr. Han Li at 960-6502 at UNBC.

Thank you for your time.

I have read and understood the above, and I consent to take part in this study

_____   _____
Signature   Date

I confirm that the above information sheet has been read and understood

_____   _____
Witness' Signature   Date

Physician Code Number_____

Appendix B - Physician Demographic Information

Physician Code Number _____

Please take a few moments to answer the following questions about yourself. Please be assured that this information will be kept strictly confidential, and will only be used in aggregate form to report demographic information.

1) How long have you been practising medicine? _____ Years

2) Your age:

      ❑ 20 to 29 years old
      ❑ 30 to 39 years old
      ❑ 40 to 49 years old
      ❑ 50 to 59 years old
      ❑ 60 to 69 years old
      ❑ 70 years or older

3) Your gender: ❑ Male   ❑ Female

4) In general, do you enjoy your profession?

      ❑ Very much
      ❑ Most of the time
      ❑ Sometimes
      ❑ Rarely
      ❑ Not at all

Appendix C - Information Sheet For Participants

Hello, I am currently a graduate student in psychology at the University of Northern British Columbia and I am conducting a study of doctor-patient communication patterns. If you agree to participate in this study, I will be audio taping your conversation with your doctor today. You will also be asked to stay a few minutes after your visit and complete a short questionnaire. I would like to point out that your doctor will not see your responses to these questions. The information you provide in the visit, as well as on the questionnaire, will be kept absolutely confidential. You will remain anonymous throughout this study. No names will appear on any of the forms or questionnaires, and you will be identified with a code number. I would like to assure you that the audio taped conversations will only be heard by the research team and will be kept in a locked cabinet when not in use.

You should feel free to refuse to participate in this study, or not to answer any of the questions on the questionnaire if you don't feel comfortable with them. You are also free to withdraw your participation from this study at any time.

If you have any questions, please phone my supervising professor Dr. Han Li at 960-6502 at UNBC.

Thank you for your time.

I have read and understood the above, and I consent to take part in this study

_____   _____
Signature   Date

I confirm that the above information sheet has been read and understood

_____   _____
Witness' Signature   Date

Participant Code Number_____

Appendix D – Patient Questionnaire

Participant Code Number_____

Physician Code Number _____

PATIENT QUESTIONNAIRE

The following are statements about your feelings regarding your visit with your doctor today. There are no right or wrong answers; we just want your opinion. We would like to remind you that your doctor will not see your answers to these statements under any condition. Based on your visit today, please circle the answer which best reflects your feelings.

	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
1. This was a very satisfying visit for me.	1	2	3	4	5
2. My doctor was very careful to check every- thing when examining me.	1	2	3	4	5
3. My doctor encouraged me to talk about my worries.	1	2	3	4	5
4. My doctor frequently interrupted me.	1	2	3	4	5
5. My doctor was not able to give me his/her full attention.	1	2	3	4	5
6. My doctor missed important information that I gave him/her.	1	2	3	4	5
7. My doctor and I laughed and joked together during my visit.	1	2	3	4	5
8. My doctor asked whether I understood the information he/she gave me about my condition or treatment.	1	2	3	4	5
9. My doctor has a good understanding of my past health history.	1	2	3	4	5
10. I'm very satisfied with the medical care I received.	1	2	3	4	5
11. My doctor really seemed to care about me and my health problems.	1	2	3	4	5
12. My doctor explained things in words I could understand.	1	2	3	4	5

13. My doctor told me exactly what he/she planned to do next in my treatment.	1	2	3	4	5
14. My doctor told me all I wanted to know about my condition and treatment.	1	2	3	4	5
15. I felt comfortable asking my doctor questions.	1	2	3	4	5
16. I count on my doctor to set my mind at ease when I'm worried about my health.	1	2	3	4	5
17. My doctor seemed to be in a hurry.	1	2	3	4	5
18. My doctor was aware of my most important health problems.	1	2	3	4	5
19. My doctor encouraged me to tell him/her everything I thought important.	1	2	3	4	5
20. I have health problems which should have been discussed today but were not.	1	2	3	4	5
21. My doctor asked for my opinion when trying to decide on the best way to treat my problem.	1	2	3	4	5
22. My doctor clearly explained why I should do the things he/she asked me to do.	1	2	3	4	5
23. My doctor answered all of my questions.	1	2	3	4	5
24. My doctor made me feel important.	1	2	3	4	5
25. My doctor acted bossy and domineering at times during my visit today.	1	2	3	4	5
26. My doctor was friendly and warm.	1	2	3	4	5
27. My doctor is competent and well trained.	1	2	3	4	5
28. My doctor was as thorough as he/she should have been.	1	2	3	4	5
29. I have great confidence in my doctor.	1	2	3	4	5

30. My doctor understood what I was telling him/her about my problem	1	2	3	4	5
31. My doctor explained my medical problems to me.	1	2	3	4	5

Please answer the following questions about yourself:

1) How long have you been seeing this doctor? (Please choose one)
_____Weeks
_____Months
_____Years

2) How many times have you seen this doctor in the past 6 months? _____

3) How would you rate your health? (Please choose one)

    ❑Excellent   ❑ Good   ❑ Fair   ❑ Poor

4) Your age: _____

5) Your gender: ❑ Male ❑ Female

6) Are you currently employed? ❑ Yes   ❑ No
    If yes, please indicate your type of employment: _____

7) What is the highest level of education you have completed? (Please choose one)

    ❑ None
    ❑ Public or grade school
    ❑ High school
    ❑ Community/Technical College
    ❑ University

8) Is English your first language? ❑ Yes   ❑ No
    If no, how fluent would you rate your spoken English?
    ❑ Fluent
    ❑ Fair
    ❑ Poor

THANK YOU SO MUCH FOR YOUR TIME AND HELP.

Appendix E - Data Gathered

DR# - The physician code number
PATIENT# - The patient code number
PTGEN – Patient gender
PTAGE – Patient age
PTC – Patient Consent Form completed (YES/NO)
PTQ – Patient Questionnaire completed (YES/NO)
DRQ – Physician Questionnaire completed (YES/NO)
TAPED – Taping of conversation completed (YES/NO)

DR#	PATIENT#	PTGEN	PTAGE	PTC	PTQ	DRQ	TAPED
007	121	F		Y	N	Y	N
007	196	F	27	Y	Y	Y	N
11	100	F	57	Y	Y	Y	N
11	102	M	52	Y	Y	Y	N
11	105	M	38	Y	Y	Y	N
11	133	F	25	Y	Y	Y	N
11	136	F	42	Y	Y	Y	N
11	155	F	37	Y	Y	Y	N
11	164	M	36	Y	Y	Y	N
11	169	M	47	Y	Y	Y	N
11	171	F	18	Y	Y	Y	N
12	148	F	71	Y	Y	Y	Y
13	113	F	52	Y	Y	Y	Y
13	115	F	65	Y	Y	Y	Y
13	119	F	16	Y	Y	Y	Y
13	120	F	58	Y	Y	Y	N
13	128	F	75	Y	Y	Y	Y
13	129	F	38	Y	Y	Y	N
13	130	F	78	Y	Y	Y	Y
13	132	M	40	Y	Y	Y	Y

13	134	F	66	Y	Y	Y	Y
13	139	M	60	Y	Y	Y	N
13	140	F	27	Y	Y	Y	N
13	142	F	49	Y	Y	Y	N
13	192	M		Y	N	Y	Y
14	101	M	57	Y	Y	Y	N
14	108	F	39	Y	Y	Y	N
14	109	F	29	Y	Y	Y	N
14	149	M	72	Y	Y	Y	N
14	151	M	41	Y	Y	Y	N
14	168	F	41	Y	Y	Y	N
14	172	M	53	Y	Y	Y	N
14	174	F	26	Y	Y	Y	N
14	198	M	54	Y	Y	Y	N
16	110	M	39	Y	Y	Y	N
16	112	F	67	Y	Y	Y	N
16	138	F	39	Y	Y	Y	Y
16	153	M	38	Y	Y	Y	Y
16	161	M	59	Y	Y	Y	Y
16	163	M		Y	Y	N	Y
16	167	F	56	Y	Y	Y	Y
16	177	M	61	Y	Y	Y	Y
16	191	M	54	Y	Y	Y	N
16	197			Y	N	Y	N
17	103	F	40	Y	Y	Y	Y
17	117	F	45	Y	Y	Y	N
17	131	F	48	Y	Y	Y	N
17	135	F	22	Y	Y	Y	N

17	143	F	46	Y	Y	Y	Y
17	145	F	42	Y	Y	Y	Y
17	146	F	52	Y	Y	Y	Y
17	150	F	22	Y	Y	Y	Y
17	170	F	28	Y	Y	Y	Y
17	175	M	25	Y	Y	Y	Y
17	202	F	35	N	Y	N	N
17	203			Y	N	Y	Y
18	114	M	24	Y	Y	Y	N
18	116	F	42	Y	Y	Y	N
18	118	F	28	Y	Y	Y	N
18	179	M	58	Y	Y	Y	N
18	182	M	38	Y	Y	Y	N
19	104	F	72	Y	Y	Y	Y
19	107	F	22	Y	Y	Y	Y
19	137	F	19	Y	Y	Y	Y
19	152	F	74	Y	Y	Y	Y Mental health?
19	154	F	58	Y	Y	Y	Y
19	156	F	40	Y	Y	Y	Y
19	160	M		Y	N	N	N
19	162	M	43	Y	Y	Y	N
19	165	F	62	Y	Y	Y	N
19	181	F	18	Y	Y	Y	N
19	188	F	29	Y	Y	Y	N
20	200	M	?	N	N	Y	Y
21	106	F	35	Y	Y	Y	N
21	111	F	38	Y	Y	Y	Y
21	141	M	37	Y	Y	Y	Y

21	144	M	50	Y	Y	Y	Y
21	166	M	57	Y	Y	Y	Y
21	173	F	18	Y	Y	Y	Y
21	176	F	45	Y	Y	Y	Y
21	184	F	41	Y	Y	Y	Y
21	185	M	53	Y	Y	Y	Y
21	186	M	33	Y	Y	Y	Y
21	187	M	26	Y	Y	N	Y
21	189	M	33	Y	Y	Y	N

Appendix F - Coding Form For Physician And Patient Utterances

Physician Code #____ Patient Code # ____

Category	Number of Physician Utterances	Total	Number of Patient Utterances	Total
Personal				
Laughs				
Approve				
Comp				
Agree				
BC (dr)				
Empathy				
Concern				
R/O				
Legit				
Partner				
Sdis (dr)				
Disapprove				
Crit				
?Reassure				
Trans				
Orient				

Check				
?Bid				
?Understand				
?Opinion				
[?] Med				
[?] Thera				
[?] L/S				
[?] P/S				
[?] Other				
? Med				
? Thera				
? L/S				
? P/S				
? Other				
Gives-Med				
Gives-Thera				
Gives-L/S				
Gives-P/S				
Gives-Other				

C-Med/Thera				
C-L/S-P/S				
?Service				
Unintell				

Total Number of Physician Utterances _____

Total Number of Patient Utterances _____

Total Number of Utterances _____

Appendix G - Coding Form For Composites Of Utterance Categories

Communication Behavior	Category	# Physician Utterances	Proportion of Physician Utterances	# Patient Utterances	Proportion of Patient Utterances
Questions- Close Ended	[?] Med				
	[?] Thera				
	[?] L/S				
	[?] P/S				
	[?] Other				
Totals					
Questions – Open Ended	? Med				
	? Thera				
	? L/S				
	? P/S				
	? Other				
Totals					
Biomedical Information	Gives-Med				
	Gives-Thera				
	C-Med/Thera				
	?Service				
Totals					
Psychosocial Exchange	Gives-L/S				
	Gives-P/S				
	C-L/S-P/S				
	SDis				
	?Reassure				
Totals					

Communication Behavior	Category	# Physician Utterances	Proportion of Physician Utterances	# Patient Utterances	Proportion of Patient Utterances
Positive Talk	Laughs				
	Approve				
	Comp				
	Agree				
	Empathy				
	R/O				
	Legit				
	Partner				
Totals					
Negative Talk	Concern				
	Disapprove				
	Crit				
Totals					
Social Talk	Personal				
Facilitation	BC				
	Trans				
	Check				
	?Bid				
	?Understand				
	?Opinion				
Totals					
Orientation	Orient				

Appendix H - Percentage Of Responses To Patient Satisfaction Questions

Question	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
1. This was a very satisfying visit for me	51.6	38.7	--	--	--
2. My doctor was very careful to check everything when examining me	51.6	38.7	--	--	--
3. My doctor encouraged me to talk	45.2	38.7	3.2	3.2	--
4. My doctor frequently interrupted me	58.1	29.0	--	3.2	--
5. My doctor was not able to give me his/her full attention	74.2	12.9	--	--	6.5
6. My doctor missed important information that I gave him/her	71.0	19.4	--	--	--
7. My doctor and I laughed and joked together during my visit	19.4	58.1	12.9	--	3.2
8. My doctor asked whether I understood the information he/she gave me about my condition	41.9	41.9	9.7	--	--
9. My doctor has a good understanding of my past health history	51.6	32.3	6.5	3.2	--
10. I'm very satisfied with the medical care I received	64.5	22.6	6.5	--	--
11. My doctor really seemed to care about me and my health problems	67.7	25.8	--	--	--
12. My doctor explained things in words I could understand	51.6	38.7	3.2	--	--
13. My doctor told me exactly what he/she planned to do next in my treatment	48.4	35.5	6.5	--	--
14. My doctor told me all I wanted to know about my condition and treatment	38.7	51.6	--	3.2	--
15. I felt comfortable asking my doctor questions	61.3	32.3	--	--	--
16. I count on my doctor to set my mind at ease when I'm worried about my health	45.2	41.9	6.5	--	--
17. My doctor seemed to be in a hurry	58.1	19.4	9.7	--	6.5

18. My doctor was aware of my most important health problems	41.9	45.2	6.5	--	--
19. My doctor encouraged me to tell him/her everything I thought important	41.9	38.7	6.5	3.2	--
20. I have health problems which should have been discussed today but were not	51.6	35.5	3.2	--	--
21. My doctor asked for my opinion when trying to decide on the best way to treat my problem	25.8	48.4	6.5	--	--
22. My doctor clearly explained why I should do the things he/she asked me to do	38.7	51.6	--	--	--
23. My doctor answered all of my questions	41.9	48.4	--	--	--
24. My doctor made me feel important	41.9	38.7	6.5	--	--
25. My doctor acted bossy and domineering at times during my visit today	71.0	16.1	--	--	3.2
26. My doctor was friendly and warm	61.3	29.0	--	--	--
27. My doctor is competent and well trained	58.1	29.0	--	--	--
28. My doctor was as thorough as he/she should have been	54.8	35.5	--	--	--
29. I have great confidence in my doctor	58.1	29.0	3.2	--	--
30. My doctor understood what I was telling him/her about my problem	45.2	41.9	--	--	--
31. My doctor explained my medical problems to me	45.2	41.9	--	3.2	--