

**PHARMACIST-CLIENT COMMUNICATION:  
A STUDY OF QUALITY AND CLIENT SATISFACTION**

by

ELAN CARLA MARIE PALUCK

B.S.P., University of Saskatchewan, 1988  
M.Sc., University of British Columbia, 1992

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Department of Interdisciplinary Studies

The University of British Columbia  
Vancouver, Canada

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## **ABSTRACT**

**OBJECTIVE OF STUDY:** The objective of the study was to examine the quality of interactions occurring between pharmacists and clients, the facilitators and barriers shaping the way pharmacists communicate with clients, and the use of client satisfaction ratings as an outcome measure for pharmacist-client communication.

**METHODS AND MEASURES:** Verbal exchanges between consenting pharmacists (n=100) and clients (n=786) were audio-recorded during four-hour, on-site, observation periods. Clients rated their interaction with the pharmacist using an 11-item Client Satisfaction Rating instrument, while pharmacists completed a questionnaire examining the factors predisposing, enabling, and reinforcing their communication with clients. Subsequent to data collection, an expert panel listened to the audiotapes and rated the quality of the interactions using a 9-item Quality of Communication rating scale.

**FINDINGS:** The mean overall expert rating for the pharmacist-client interactions was 4.0 (out of 7), and represented a “satisfactory” rating. Hierarchical multiple regression analysis revealed that the predisposing, enabling and reinforcing variables measured in the Pharmacists’ Questionnaire accounted for 19% of the variance in pharmacists’ technical quality scores. Client satisfaction ratings and expert ratings of communication quality were modestly correlated ( $r=0.14$ ;  $p<0.001$ ).

**CONCLUSIONS:** While the 60% of consultations in this study met or exceeded the mandated communication requirements of pharmacy practice, pharmacists were uniformly

weakest in their client assessment skills and in their discussions of medication precautions and non-pharmacologic approaches to symptom management. Most pharmacists in the study reported being highly predisposed to communicating with their clients, but many lacked the reinforcing factors, and to a lesser degree, enabling factors that are considered necessary to sustain quality communication in the workplace. Client satisfaction ratings were positively skewed with little variability, making it difficult to detect a relationship between the expert and client ratings. Reasons why the study was unable to capture more of the variance in its proposed relationships are provided, as well as areas for future research.

**KEY WORDS:** pharmacist-client communication, client satisfaction, quality



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## CHAPTER 1

### GENERAL OVERVIEW

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#### 1.1 INTRODUCTION

The health promotion literature increasingly acknowledges an underdeveloped potential and need to extend **community pharmacists'**<sup>1</sup> role in the areas of **health promotion** and disease prevention (Gardner and Sennott-Miller, 1987; Fincham and Smith, 1988; Lawrence, 1991; Burman, 1992; Smith, 1992a; Smith, 1992b; Paluck et al., 1992; Anderson, 1995). It is believed that community-specific health promotion programs, utilizing the community pharmacy and pharmacist as integral resources, can contribute to the improvement of health in populations.

Toward this long-term goal, baseline data were collected using a self-report questionnaire on the scope and frequency of pharmacist involvement in 33 various health promoting and disease preventing activities (Paluck et al., 1994). This study represents the next phase in this research. The objectives of this study are: 1) to descriptively examine the **quality** of interactions currently occurring between community pharmacists and their clients; 2) to describe the facilitators and barriers shaping the way community pharmacists currently communicate with their clients, and; 3) to investigate the use of client

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1 Terms presented in bold type are defined in the glossary.

satisfaction ratings as an outcome measure for **pharmacist-client communication**. The primary research questions being investigated in this dissertation are:

1. What are the factors that predispose, enable, and reinforce pharmacists to communicate with their clients?
2. Can pharmacy clients evaluate the quality of pharmacist-client communication using a self-completed rating instrument?

## **1.2 BACKGROUND**

The health care industry is a dynamic field that is constantly evolving to keep pace with innovative technologies. Recent political, economic, and technological changes are significantly affecting the way health services are, and will be, provided. Notable shifts within the health field include (Preus, 1995): the movement of government from being a “passive payer” to an “active purchaser”; a focus on services that promote health and wellness as opposed to illness only; an emphasis by both consumers and government on value (health and productivity) as well as cost (price and volume); and the evolution of a more activated or empowered patient requesting more knowledge and control in health care interventions.

Pivotal reports such as, *A New Perspective on the Health of Canadians* (Lalonde, 1974), the *Ottawa Charter for Health Promotion* (1986), and *A Framework for Health Promotion* (Epp, 1986) signalled the beginning of a new way to think about the delivery of Canadian health services. Common themes in those documents included the need to

strengthen community-based health services, foster greater public participation in health promoting activities, and reorient health services by modifying the organization, education, training, and attitudes of health care providers.

Like many health professions, the practice of pharmacy has struggled to adapt to contemporary ideals in health service delivery. Principles guiding pharmacy practice have changed radically in a relatively short period of time. For example, at one time it was considered unethical for a pharmacist to discuss with a client the therapeutic effect or composition of a prescription (Higby, 1996)—now, 40 years later, dialogue between the pharmacist and client is mandated (College of Pharmacists of British Columbia, 1992).

Numerous sources cite community pharmacists as being open and willing to expand their community health role, readily available and accessible to the public (Smith and Gibson, 1975; Nathan, 1989; Anderson-Harper et al., 1992; Meade, 1992; Smith, 1992a; Bokma and Brearly, 1995), and in most communities, the most frequently visited health care centre (Coons, 1990; Bokma and Brearley, 1995). In general, however, much of the scientific literature suggests that the quality of service (specifically pharmacist advice on prescription and non-prescription products) within many community pharmacies is failing to meet the challenges of today's health care system (Morrow and Hargie, 1992; Smith, 1992b; Taylor and Suveges, 1992). Many researchers support the notion that community pharmacies and pharmacists have the *potential* to be ambassadors and agents for the promotion of health. Pharmacy researchers, educators, and practitioners agree, however, that room for improvement exists in the provision of community pharmacy services.

Attempts to improve the quality of community pharmacy services date back to the late 1960s; however, one of the limitations of research in this area has been its heavy emphasis on community pharmacists' lack of knowledge. A plethora of sociobehavioural research supports the notion that improving the quality of care in community pharmacies will require a multifaceted approach (Bennis et al., 1976; Chase, 1979; Orlandi, 1987). It is unlikely that a simple adjustment in pharmacists' undergraduate or continuing education curriculum will produce a sustained influence on the day-to-day provision of pharmacy services (Fox et al., 1990).

Creating changes within the community pharmacy environment will require detailed attention to the personal, social, environmental, organizational, and legal factors influencing pharmacy practice. While acknowledging the importance of these variables, however, the community pharmacist possibly remains the most important variable in the provision of quality pharmacy services (Berardo et al., 1989). Therefore, a reasonable place to begin research in this area is with pharmacists and their clients.

What is commonly referred to as **patient counselling** is the object of renewed interest in the **pharmacy literature**. Hammond and Lambert (1994) suggest three reasons why a renewed interest in patient counselling has occurred in the United States: 1) the Omnibus Reconciliation Act (OBRA) of 1990, which mandates the dialogue between pharmacists and their Medicaid clients; 2) the publication of the Inspector General's report on the clinical role of the community pharmacist, which called for immediate action to remove all barriers to the provision of clinical pharmacy services within the community; and 3) the adoption of **pharmaceutical care** as a philosophy of practice that advocates pharmacist responsibility for patient outcomes and follow-up.

In British Columbia (B.C.), three similar issues have stimulated interest in patient counselling provided by community pharmacists. In 1992, the College of Pharmacists of British Columbia passed Bylaw B19(17), the Pharmacist/Patient Dialogue Bylaw, which established a minimum **standard** of dialogue between patients and pharmacists before medications are released. The bylaw requires the pharmacist to identify the patient, identify the drug being dispensed, review the dosage regimen, provide instructions required to achieve therapeutic response, and review the medication's storage requirements (College of Pharmacists, 1992). In 1991, the B.C. Royal Commission on Health Care and Costs recommended that health services be provided closer to patients' homes, public servants and health professionals put the public first, and that health care services focus attention on measurable outcomes that demonstrate improved health outcomes. Finally, as in the United States, pharmacist regulators and educators in British Columbia have embraced the ideals of pharmaceutical care, and have worked to direct undergraduate and continuing education curricula to meet the associated additional practice demands.

An important underlying theme in Bylaw 19(17), and in the new philosophy of practice known as pharmaceutical care, is that of communication between the pharmacist and the pharmacy patron. Often referred to in the more general health science literature as patient-provider **communication**, the investigation of this communication dyad is well-documented (Wasserman and Inui, 1983). In general, it has been demonstrated that effective patient-provider communication is highly correlated with client satisfaction, which has been correlated with **patient compliance** behaviours such as keeping appointments with physicians and maintaining medication regimens. Research also

indicates that communication behaviours of health care providers can be changed—for example, they can learn to become more empathetic and to use less jargon (Wasserman and Inui, 1983). Therefore, examining pharmacist-client communication will be of key importance in future attempts at creating change within the delivery of pharmacy services.

In summary, political, economic, ideological, and technological shifts in the health care industry have resulted in additional demands on community pharmacy practice. Though community pharmacists and pharmacies have the potential to influence the health of a great many people, the literature lacks substantive evidence of pharmacists' current success in attempting, much less accomplishing, this shift in practice. Improving the quality of pharmacy services will require multidimensional interventions, and detailed information pertaining to variables that influence the provision of pharmacy services will be necessary. As the community pharmacist is the most visible, and possibly the most important, variable in the provision of quality pharmacy services, it is necessary to examine the current quality of verbal interactions occurring between pharmacists and clients, and the personal, social, and environmental factors that influence pharmacist-client communication.

### **1.3 TERMINOLOGY**

This section contains brief overviews and definitions of three areas within this study: the construct of quality, the term pharmacist-client communication, and the terminology referring to pharmacy clients.

### 1.3.1 Defining Quality

Quality health care can be defined as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes that are consistent with current professional knowledge” (Lohr, 1990). There are three primary characteristics of quality care: accessibility, acceptability, and technical quality (Mount, 1994). Accessibility refers to a patient’s ability to reach available services; acceptability refers to the extent to which health care satisfies patients; and technical quality refers to the degree to which providers coordinate judgement, skill, and available technology to improve the health of patients. Within pharmacy research, there are three primary outcomes that can be used to estimate the quality of services (Fincham, 1993; Cooper, 1993).

1. Clinical outcomes: consider changes in the biological and physiological characteristics of a disease after treatment (e.g., serum cholesterol, blood glucose).
2. Humanistic outcomes: consider a patient’s perspective in assessing quality (e.g., quality of life, functional status, and patient satisfaction).
3. Economic outcomes: consider both the cost and consequences associated with various treatment alternatives and incorporate attributes of humanistic and clinical outcomes (e.g., cost-benefit analysis, cost-effectiveness analysis).

Mount (1994) discussed two reasons why defining the quality of health services can be difficult. First, the definition of quality is dependent on one’s perspective. If the three key players in health services (providers, consumers, and administrators) were asked

how they defined quality health services, their definitions, based on their perspectives, would differ substantially; thus, there would be a lack of consensus on the characteristics and definition of quality. Second, quality of care is intrinsically tied to an incomplete understanding of health and the effects of health care interventions because “it is difficult to anticipate these consequences, to identify when they do occur, and to determine their overall positive or negative effects” (Mount, 1994: 63). This study considers the perspectives of patients, providers, and pharmacist educators in the assessment of communication quality.

An extensive literature review on quality assessment in pharmaceutical care by Farris and Kirking (1993) cautioned against excessive focus on outcomes, and proposed three primary reasons for ensuring a balance between process and outcome in any evaluation. First, quality is a value judgement placed on an activity or process; however, we must first be able to identify the components of the activity to evaluate it. Second, to identify the activities or factors within the process of pharmaceutical care that are working (or not working), they need to be linked to outcomes (either positive or negative) and quality of life ratings. Finally, outcomes alone are not a direct measure of the care provided; for example, the medication may have been ineffective, even though the quality of care was appropriate and adequate. Alternately, positive outcomes may have been brought about by processes other than the quality of care provided.

Although this study is interested in the quality of pharmacy services, its primary focus will be on examining the quality of **pharmacist-client communication**. Attention to all three components of quality (accessibility, acceptability, and technical quality) is beyond the scope of this project. Thus, for the purposes of this study, the term quality will



be narrowly defined as the acceptability and technical quality of exchanges occurring between pharmacists and clients.

### 1.3.2 Defining Pharmacist-Client Communication

Very little information is known about the way in which pharmacists and their clients communicate. A major limitation in furthering knowledge in this area can be attributed to inconsistent terminology (DeYoung, 1996). Terms such as patient counselling, verbal counselling, patient advice, patient education, pharmacist instruction, patient instruction, health education, drug counselling, drug education, and clinical pharmacy services have all appeared interchangeably in the pharmacy literature. While patient counselling is the most common term used to describe clinically-oriented<sup>2</sup> pharmacist-client communication, it may not reflect the actual context of pharmacist-client exchanges.

An early definition of patient counselling in the pharmacy literature proposed that patient counselling entailed “any oral or written communication (including auxiliary labels) from the practitioner relating to the drug product and its use” (Puckett et al., 1978). Thus, a pharmacist affixing a *Take with Food* auxiliary label on a prescription vial (requiring two seconds of time) and another pharmacist reviewing with a client his new insulin regimen (requiring 15 minutes) had both counselled their patients. The limitations

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2 The term “clinically-oriented” communication refers to dialogue between pharmacists and clients that is limited to professionally-accepted advice provided by the pharmacist when a drug product is being dispensed. Personal greetings and jokes, for example, are not included in this term, though these may be an important part of overall communication or counselling effectiveness and quality.

of this early definition, from both a research perspective (consistency in measurement) and a patient care perspective (ensuring an acceptable standard of care), failed to stimulate a more informative definition. Even by 1989, an extensive review of the pharmacy literature failed to produce a clear and consistent definition of patient counselling (Pedersen and Schulz, 1990).

The term counselling is considered difficult to define, even within the field of professional counselling (Cormier and Hackney, 1993). Cormier and Hackney suggest that it is an "interpersonal relationship between someone actively seeking help and someone willing to give help in a setting that permits help to be given and received." They note that this definition does not differentiate counselling from other activities such as consulting or advising, and therefore add that the process of counselling is "directed toward people who experience difficulties as they live through the normal stages of life-span development" (p. 2). Thus, the emphasis in professional counselling is on the provision of assistance to a person, eventually enabling them to make their own decisions (Pedersen and Schulz, 1990).

The professional counselling process involves five stages (Cormier and Hackney, 1993). The counsellor and the client establish a relationship in Stage 1, and an assessment of the client is made in Stage 2. During Stage 3, goals are set, thus committing the counsellor and the client to a common set of conditions, course of action, or outcome. Interventions to address the client's needs are implemented in Stage 4, while termination and follow-up of the counselling relationship occur in the fifth stage.

All of the stages within the professional counselling process can be detected within the ideals of pharmacy's recent philosophical force, pharmaceutical care. Pharmaceutical care is defined as the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life (Hepler and Strand, 1990). It marks the advent of client participation or shared decision-making in the clinical pharmacy process, and establishes pharmacists' responsibility to provide the long-term follow-up monitoring of care required for many of today's pharmaceutical preparations. A number of smaller intervention studies have demonstrated beneficial impacts of pharmaceutical care principles (for example, Carter et al., 1997; Erikson et al., 1997; Konzem et al., 1997); however, because of the extensive commitment required by the pharmacist (time, training, financial), it is unlikely that the pharmaceutical care process will find its way into the day-to-day operations of most community pharmacies for quite some time.

Key elements and outcomes in successful professional counselling are summarized in the top half of Table 1.1. Practitioners of pharmaceutical care may exhibit all of the characteristics of a successful professional counsellor; however, the outcomes for pharmacy patrons (listed in the bottom half of the table) are clearly quite different from the outcomes arising from professional counselling. For example, the ideals of pharmaceutical care recognize that counselling is voluntary, that confidentiality is essential, and that if clients' perceptions or decisions are accepted and encouraged, a healthy communication will ensue. However, while some of the outcomes associated with professional counselling may naturally evolve (e.g., clients developing a more useful understanding of their problem), the pharmacist-client relationship strives to achieve a mixture of economic, physiologic and humanistic outcomes pertaining to clients' drug use.

**Table 1.1 Elements and Outcomes of Quality Counselling**

<b>Elements of Professional Counselling<sup>3</sup></b>	<b>Outcomes of Professional Counselling<sup>3</sup></b>
<p>It involves responding to the feelings, thoughts, and actions of the client.</p> <p>It involves a basic acceptance of the client's perceptions and feelings irrespective of outside evaluative standards.</p> <p>Confidentiality and privacy constitute essential ingredients in the setting.</p> <p>The counsellor operates with a conservative bias against communicating to the client detailed information about his/her own life.</p> <p>Counselling is voluntary.</p> <p>Counsellors and clients must be aware of, and sensitive to, the verbal and non-verbal messages that are continually being transmitted during the interview process.</p>	<p>Clients begin to own their problems and issues.</p> <p>Clients develop a more useful understanding of problems and issues.</p> <p>Clients acquire new responses to old issues.</p> <p>Clients learn how to develop effective relationships.</p>
<b>Outcomes of Quality Pharmacist-Client Communication<sup>4</sup></b>	
<p><b>Economic:</b></p> <ul style="list-style-type: none"> <li>• Reduced hospital emergency room and/or family physician visits</li> <li>• Lowered drug expenditures (for clients and third-party payers)</li> <li>• Decreased primary care costs for self-limited illness</li> </ul> <p><b>Clinical:</b></p> <ul style="list-style-type: none"> <li>• Changes in the number of drugs or doses per client per day</li> <li>• Improved compliance with medication regimen</li> <li>• Reduced adverse drug reactions and interactions</li> <li>• Increased knowledge pertaining to the drug, disease, or administration of the drug</li> <li>• Improved physiological performance (e.g., decreased blood pressure or blood glucose)</li> </ul> <p><b>Humanistic:</b></p> <ul style="list-style-type: none"> <li>• Improved quality of life</li> <li>• Increased client satisfaction</li> <li>• Empowered/activated clients</li> </ul>	

<sup>3</sup> Cormier and Hackney, 1993

<sup>4</sup> Cooper, 1993; Fincham, 1993

In summary, the pharmacy literature suggests that the term patient counselling is the most common way of referring to clinically-oriented communication occurring between pharmacists and clients (DeYoung, 1996). Literature describing the form and content of these exchanges, however, suggests that this term is inappropriate. In this study, the term pharmacist-client communication will be used and is defined as the “exchange of information [between pharmacists and clients] for some purpose” (Inui and Carter, 1985). It includes all verbal exchanges that occur, ranging from medication-related exchanges to solidarity-building exchanges such as personal comments, greetings, or laughter, for example. With this range, it goes beyond the range of clinically-oriented communication (as defined in footnote 2).

### **1.3.3 Patient, Client, or Customer?**

Within the pharmacy literature, and indeed during a pharmacist’s training, it is the norm to refer to the recipient of the medication or health advice as the patient; however, many of the interactions occurring in community pharmacies do not involve an ill person. For example, a person inquiring about sunscreen protection would not be considered a patient of the pharmacist. If asked, it is unlikely whether even long-term pharmacy patrons being treated for chronic illnesses, such as diabetes or hypertension, would perceive themselves as the pharmacist’s patients.

Having rejected the popular title, a few alternatives exist. The term “person” is accurate, but does not provide information regarding the relationship that may exist between the pharmacist and the individual; other alternatives include “customer” and “client.” Chambers Dictionary (MacDonald and Kirkpatrick, 1977) provides the following

distinctions: A customer is “one who buys from one,” while a client is “one who employs a lawyer or professional advisor.” The term customer was not chosen due to its heavy emphasis on consumerism. Thus, the term client is used in this paper to represent the professional and business roles of community pharmacists, and to acknowledge the perceptions or expectations clients may hold regarding the role of community pharmacists.

#### **1.4 CONCEPTUAL MODEL OF THE STUDY**

It is a well-accepted standard of research to use a model or theory to guide the study's design and analyses. Theoretically-derived study models can place the research problem in a larger context, allow for relationships between study variables to be visually displayed and tested, and thus contribute to the furthering of knowledge within an area (Crestwell, 1994; Bowling, 1997).

The model chosen to guide this study was adapted from a health promotion and health education planning framework known as the PRECEDE-PROCEED model (Green, 1974; Green et al., 1980; Green and Kreuter, 1991; Green and Joab, 1997) (Figure 1.1). In the latest edition of their textbook on the model, Green and Kreuter (1998) use the acronym PRECEDE to stand for “Predisposing, Reinforcing, and Enabling Constructs in Educational/Environmental Diagnosis and Evaluation”; PROCEED stands for “Policy, Regulatory and Organizational Constructs in Educational and Ecological Development.” The PRECEDE component of the model is a diagnostic or needs assessment phase, while the second component, PROCEED, forms the developmental stage of planning that initiates and monitors the implementation and evaluation process. Among the more than 700 published applications of the PRECEDE-PROCEED model, only four are known in pharmacy research (Fedder and Beardsley, 1979; Fedder, 1982; Opdyke et al., 1992; Wallenius, 1995). This model has been used extensively in almost all other areas of health services and public health planning, health education, and health promotion (Green and Kreuter, 1991; Green and Joab, 1997).

The PRECEDE/PROCEED framework identifies three categories of factors that affect the behaviours of individuals and populations: **predisposing factors** are the antecedents to behaviour that provide the rationale or motivation for the behaviour; **enabling factors** are the antecedents to behaviour that allow a motivation to be realized; and **reinforcing factors** are factors subsequent to a behaviour that provide the continuing benefit, reward, or incentive for the behaviour to be repeated and maintained. Though the three categories are not mutually exclusive, this type of classification provides a

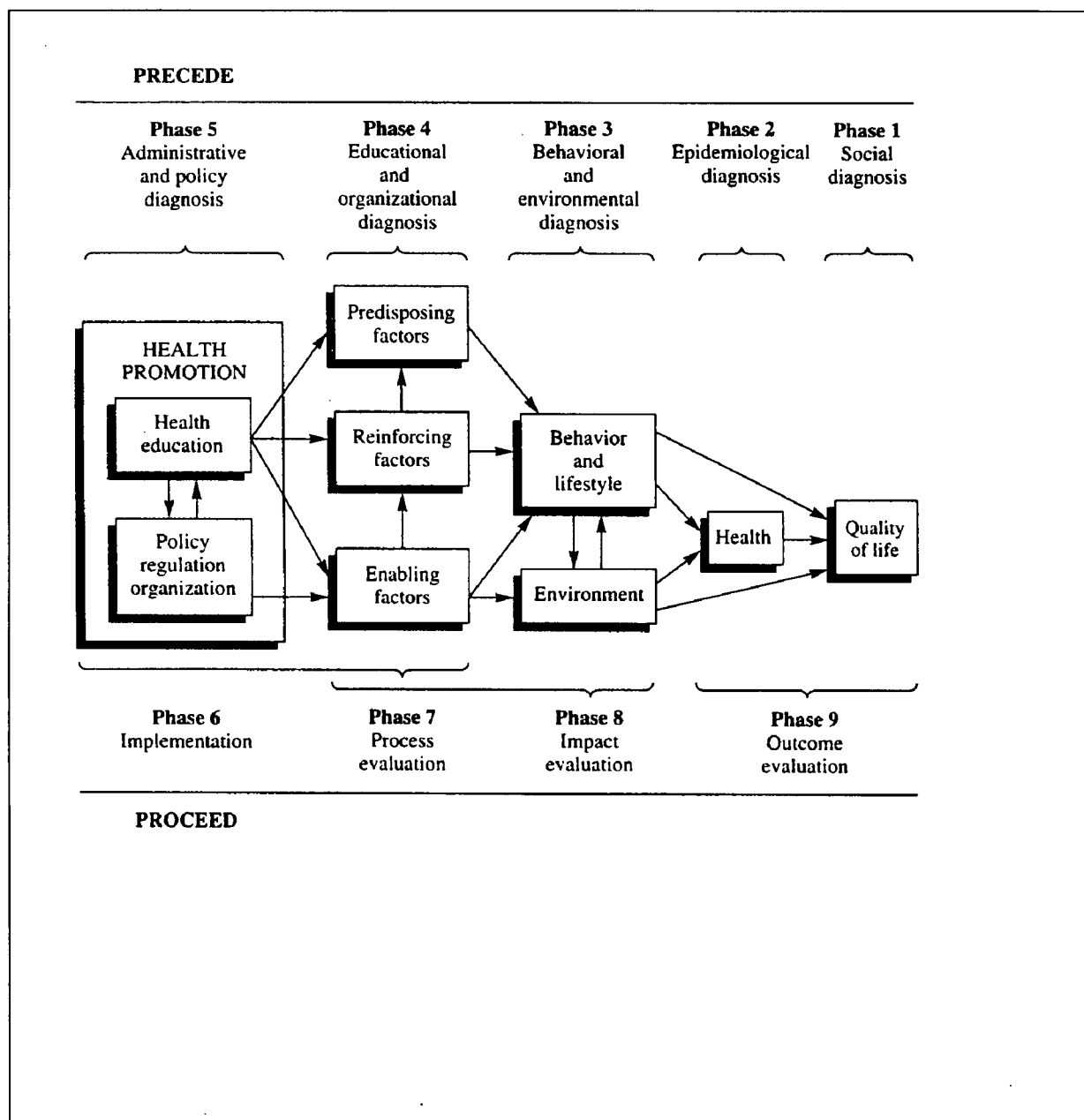


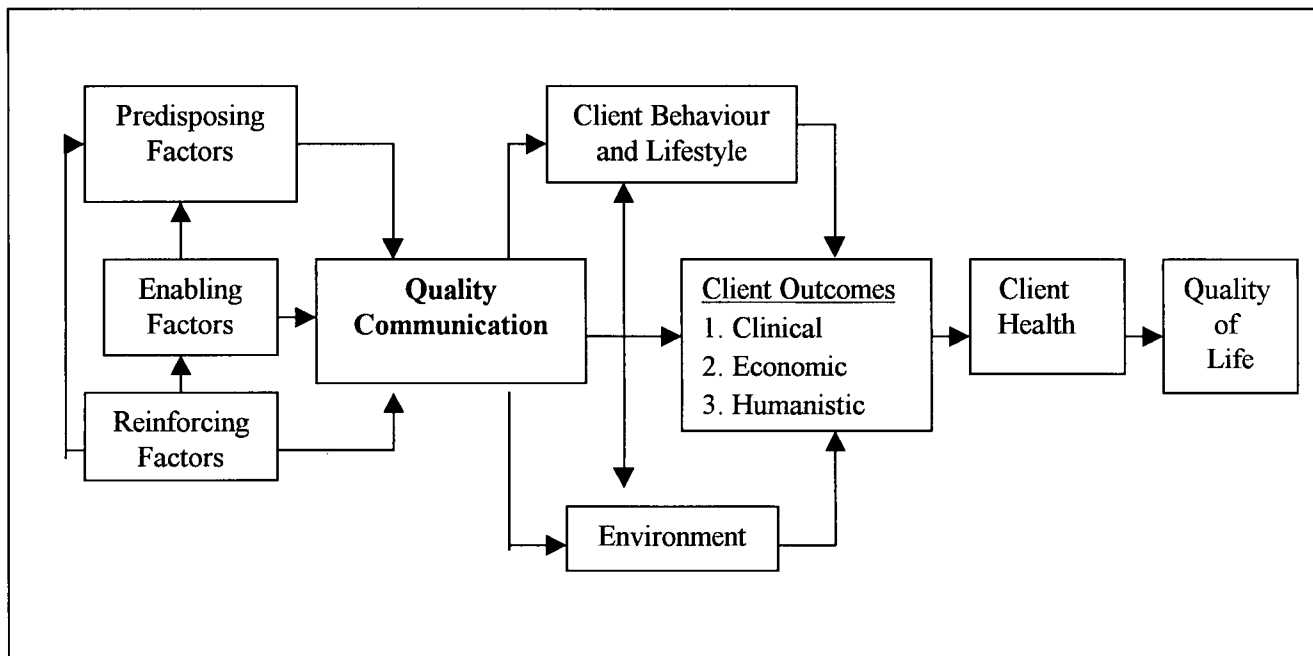
Figure 1.1 The PRECEDE-PROCEED Model for Health Promotion Planning and Evaluation



conceptual framework (Green and Kreuter, 1991). By examining the research problem according to these three broad categories, analysis of study results is aided, and future efforts designed to improve the quality, frequency, and nature of pharmacist-client communication will have a solid base. By understanding the causes of poor pharmacist-client communication, the most efficient combination of education, training, resource development, and rewards to influence the factors that predispose, enable, or reinforce the behaviour can be used to intervene (Green and Kreuter, 1991).

Based on these strengths, the PRECEDE model was used to develop a conceptual model for the current study (Figure 1.2). The behaviour of interest in this study is pharmacists' ability to communicate health information that is accurate, relevant, and helpful for clients, simply referred to as communication quality. The quality of the patient-provider relationship has been found to have a significant effect on client outcomes (Sexton and Whiston, 1994); however, the search to identify those factors in the communication process that might enhance efficacy and contribute to successful outcomes has been less successful (Sexton and Whiston, 1994).

The model purports that the quality of pharmacist-client communication is influenced by the three main categories of behavioural determinants and that relationships also exist among these three constructs. Reinforcing factors influence the enabling factors, which in turn affect the predisposing factors; reinforcing factors also directly influence the predisposing factors. The impact variable of interest in this study is the quality of pharmacist-client communication. While quality pharmacist-client communication may



**Figure 1.2 Conceptual Model of the Study Problem**

result in a combination of clinical, economic, and/or humanistic outcomes, this study focuses on client satisfaction as an outcome measure.

Though this study is limited to examining the above relationships, the model acknowledges the interplay of clients' behaviour and lifestyle, and the greater environment, with both the occurrence of quality communication, and its subsequent client outcomes. Positive client outcomes can improve client health and ultimately influence their quality of life. It is important to note that all of the relationships in the model are likely bi-directional.

## **1.5 STUDY OVERVIEW**

To address the study's research questions, a prospective, direct observational, study was chosen. To involve as many pharmacists in the study as possible, an invitational letter was mailed to licensed community pharmacists practicing in British Columbia's Lower Mainland (n=836), requesting their participation in a study examining verbal communication between pharmacists and clients. A pair of researchers visited consenting pharmacists for a prearranged observation period during the months of May and June (1995), to collect on audiotape the verbal exchanges occurring between the pharmacist and clients. Participating clients evaluated their interaction with the pharmacist using a 13-item client satisfaction questionnaire, while pharmacists completed a seven-page questionnaire that gathered information on the pharmacist and pharmacy factors that predispose, enable, and reinforce the occurrence of quality communication in their practice environment. An eight member expert panel of practising pharmacists and University of British Columbia pharmacy educators listened to the audiotapes and worked in pairs to rate the quality of the pharmacist-client communication. In this study, the expert panel ratings of communication quality serve as an impact variable to which the predisposing, enabling, and reinforcing factors will be correlated; the quality ratings are also used as a independent variable that will be correlated to client satisfaction ratings.

## **1.6 DISPOSITION OF THESIS**

With the approval of the Faculty Supervisory Committee, an alternate thesis format was chosen, which allows for a more complete examination of the three distinct,

yet inter-related, content areas addressed within this study. The following overview outlines the thesis structure.

Chapter 2 contains a detailed description of the research methods used in this study and an explanation of the development of the study's three measurement instruments. It also presents demographic descriptions of the study participants, and establishes the psychometric properties of scales used. Chapters 3 through 6 are self-contained chapters that cover specific areas of the study's conceptual framework. Thus, each of these largely descriptive chapters contains an introduction, literature review, methods, results, and discussion sections that is relevant to its particular topic. Having thoroughly discussed the study's methods in Chapter 2, however, methods sections in these chapters are brief and pertain only to that content area. Chapter 3 contains an examination of the predisposing, enabling, and reinforcing factors influencing pharmacist-client communication. Chapter 4 details the quality of pharmacist-client interactions collected in this study, while Chapter 5 presents client satisfaction ratings for these interactions. The study's findings, as presented in Chapters 2 through 5, are integrated in Chapter 6 where the study's primary research questions are addressed. Each chapter contains the pertinent appendices and references, while a complete bibliography and a glossary of terms can be found at the end of the thesis. Terms presented in bold-face type are included in the glossary.

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## **CHAPTER 2**

### **STUDY METHODS, PARTICIPANTS AND MEASURES**

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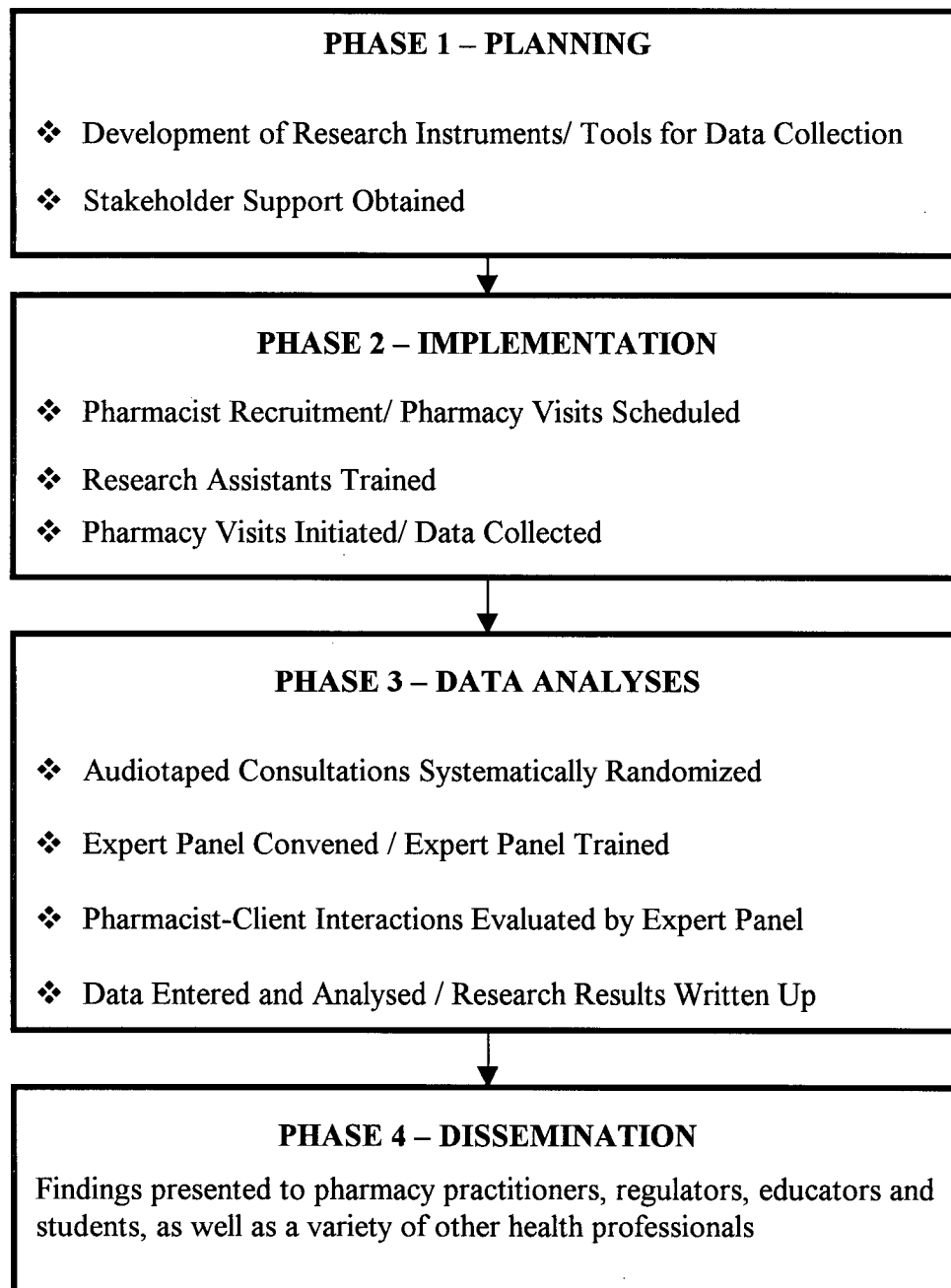
#### **2.1 INTRODUCTION**

Chapter 2 provides details of the research methods used in this study through a general description of the steps undertaken in preparing for the study, followed by a full account of the protocol used in visiting pharmacies. Section 2.3 describes, in detail, the sample of pharmacists, pharmacies, and clients that participated in the study. The remainder of the chapter discusses the development of the study's three measurement instruments and presents data that establish the reliability of the scale items and the validity of inferences that can be made from their use

#### **2.2 RESEARCH PROTOCOL**

##### **2.2.1 Study Preparation**

This study uses a prospective, direct observational approach incorporating surveys, on-site observations, and expert rater panels to achieve the study's goals (see Table 2.1). To maximize participant response, great effort was taken throughout the planning, implementation, and analyses stages of this project to gain pharmacists' support by engaging them as active research participants rather than passive research subjects.



**Figure. 2.1 Chronological Overview of Study Methods**

Prior to the study, letters of endorsement for the project were obtained from the pharmacists' provincial regulatory board, the College of Pharmacists of British Columbia, and community pharmacists' voluntary organization, the British Columbia Pharmacy Association. Permission from the upper management of the major chain pharmacies operating in the province's sampling frame was also obtained. Finally, as per university requirements, a certificate of approval was obtained from the University of British Columbia (UBC) Behavioural Sciences Screening Committee indicating that the study methods met the current ethical standards for social science research.

During the data collection phase, pharmacists were encouraged to work with the researchers in adapting the existing protocol for obtaining client consent to help minimize disruptions to the pharmacy's daily routine. In addition, four of the practicing pharmacists that had participated in the study worked with four academicians as part of an expert panel, to establish the study's standards for quality communication during the rating process.

Finally, during the analyses phase, research findings were presented on four occasions to a variety of pharmacy regulators, administrators, educators, students, and practitioners, thus allowing the greater pharmacy community opportunities to refute and/or refine inferences made from the collected data.

### **2.2.2 Pilot Testing**

To minimize costs in conducting the pilot study, a small random sample of local pharmacists (n=30) was generated. The sample received a cover letter in the mail, followed up by a reminder letter and a telephone call. With this approach, the study recruited only

three pharmacists (10 per cent response). The pilot testing proceeded with the three pharmacists as planned, but with major implications regarding recruitment for the full-scale study. The lower than anticipated response indicated that additional time and money would be required to ensure an adequate sample. Despite the poor response by pharmacists, the pilot testing allowed for an opportunity to rehearse and refine the research protocol and instruments. Preliminary data analyses were not attempted at this point.

### **2.2.3 Sampling Description**

The study sought to obtain a minimum of 100 community pharmacists to ensure  $\pm 0.1$  precision of the mean with 95% confidence (alpha probability 0.05). Earlier work by Smith (1990) using a similar method for data collection demonstrated that a 50 per cent response could be attained; however, Smith's U.K. study was not required to conform to the University of British Columbia's (UBC) standard of ethical research design. In her study, a sign was posted in the pharmacy advising clients of the study, and requesting them to inform the pharmacist if they chose *not* to participate. Thus, the pharmacist, wearing a wireless microphone, was able to record all of his or her clients—except of course, those who had read the notice and informed the pharmacist of their desire to not participate. In this study, the UBC Ethics Committee required that active consent be obtained from every client prior to recording their conversation. The process involved in obtaining client consent worried many of the pharmacists and pharmacy managers and possibly contributed to the poor response rate of pharmacists in the pilot phase. In addition, it should be noted that the period during which the pharmacy visits were planned coincided with the implementation of the

provincial PharmaNet system (a computer system linking the pharmacy records of all BC citizens.) Thus, the confusion and apprehension surrounding the PharmaNet system may have also played a part in the low participation rate in this study.

A list of pharmacists registered with the College of Pharmacists of British Columbia was available and since registration with the College is mandatory for practice, the list is considered complete. The *College Directory* lists pharmacists alphabetically according to each geographical district. Pharmacists for whom a work address was not listed were assumed unemployed and excluded; this assumption has been verified with the College as being correct. The listed work address of pharmacists also provided the study with a way to select community pharmacists and exclude hospital pharmacists. Based upon previous research that has used the *College Directory* to obtain a mailing list (Paluck et al., 1994), it was anticipated that 10 per cent of pharmacists on the list would be ineligible for the study (had moved, retired from practice, gone on maternity leave, or were unable to be found, for example). Thus, in combination with the 10% response rate witnessed during pilot testing, it was necessary to include the entire population of Lower Mainland community pharmacists (N=836) in the study to obtain the desired minimum sample size of 100.

#### **2.2.4 Recruitment**

An invitational letter was mailed out to 836 licensed pharmacists who were practising pharmacy in one of the consenting Lower Mainland chain pharmacies or in one of the independently owned pharmacies. The letter requested participation in a study examining

verbal communication between pharmacists and clients. Three follow-ups (a reminder letter, a telephone follow-up call, and finally an on-site visit to the pharmacy manager) were used to attain the desired sample size. Pharmacists consented to being visited by a pair of researchers for a four-hour period, during which their verbal interactions with consenting pharmacy clients would be recorded with a wireless microphone.

### **2.2.5 Scheduling of Pharmacy Visits**

Each pharmacy visit was scheduled for four hours; however randomly assigning times for the visits was unrealistic considering the diversity of most pharmacists' schedules. Therefore, flexibility in scheduling the visits around the pharmacists' work schedule took priority over random assignment when developing the on-site visit schedule.

Participating pharmacists were assigned to one of nine time periods over a seven-week period in May and June 1995 (see Figure 2.2). The goal of scheduling was to have fairly equal numbers of the visits (approximately one-third) scheduled for an "early week" (Monday -Tuesday), a "mid-week" (Wednesday-Thursday) or a "weekend" visit (Friday - Sunday). The scheduling of visits in this manner was designed to minimize possible bias occurring because of time-of-day or time-of-week influences. The use of two pairs of on-site observers made it possible for as many as six visits to be scheduled in one day. The ideal schedule however, saw each pair completing an average of ten visits per week.

Pharmacy Visits for Team #1							
Week #1							
	Early Week		Mid-Week		Weekend		
Time	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
9 a.m. - 1 p.m.							
2 p.m. - 6 p.m.							
7 p.m. -11 p.m.							

**Figure 2.2 Sample Scheduling Form for the Pharmacy Visits**

### **2.2.6 The Pharmacy Visit**

#### *General Start-Up Protocol*

The day before a scheduled pharmacy visit, a reminder telephone call was made to the pharmacy and, on the day of the visit, two research assistants arrived at the pharmacy (see Table 2.1). The supervisory research assistant would brief the pharmacist and pharmacy staff

**Table 2.1 Pharmacy Visit Protocol**

SET-UP DUTIES UPON ARRIVAL AT PHARMACY	
RESEARCH ASSISTANT	SUPERVISORY RESEARCH ASSISTANT
Set up audio equipment. Test audio equipment. Set up table and chair if no waiting area is available.	Brief pharmacist and staff on the protocol for obtaining client consent. Demonstrate the use of the wireless microphone.

↓

COLLECTING DATA	
RESEARCH ASSISTANT	SUPERVISORY RESEARCH ASSISTANT
<p><b><u>After the Interaction:</u></b> Collect cash coupon from client. Provide client with a satisfaction questionnaire coded with client's number. Collect completed questionnaires.</p> <p><b><u>Other General Duties:</u></b> Record number of clients requesting OTC advice. Collect descriptive pharmacy data.</p>	<p><b><u>Before the Interaction:</u></b> Obtain client consent as per study protocol. Provide client with coded cash coupon. Tag prescription of consenting client with the code number. Turn tape recorder on when prescription is ready for distribution. Ensure pharmacist's microphone is turned on before the consultation begins.</p> <p><b><u>Other General Duties</u></b> Record number of clients asked to participate Collect descriptive pharmacy data</p>

↓

CONCLUDING A PHARMACY VISIT	
RESEARCH ASSISTANT	SUPERVISORY RESEARCH ASSISTANT
Take down equipment.	Debrief pharmacist. Provide pharmacist with the Pharmacist Questionnaire and the directions for its return.



on the process of obtaining consent from pharmacy clients, while the second research assistant set up the audio recording equipment. The wireless microphone was attached to the pharmacist's lab coat lapel. The receiver was set up in the dispensary in an unobtrusive location that allowed the researcher to keep an eye on the equipment as well as view any approaching clients. If a client waiting area was not available at the pharmacy, a chair and small table were set up for clients completing the client satisfaction questionnaires.

### *Obtaining Client Consent*

The supervisory research assistant remained in the dispensary and was responsible for obtaining consent from pharmacy clients who were bringing in a new prescription or seeking advice from the pharmacist regarding health matters or over-the-counter (OTC) drug selection. When a client approached the prescription drop-off counter, the supervisory research assistant would obtain consent by providing the client with a verbal and written explanation of the project and its purposes (as approved by the UBC Ethics Review Committee- Appendix 2.1). If the pharmacist or pharmacy technician were in a position to have the first contact with a client, they were given the option of obtaining consent from the client, or referring the client to the researchers for information about the study.

Anyone bringing in an empty prescription vial was assumed to be obtaining a prescription refill and was excluded from the study, as the study's primary interest was in new prescriptions or OTC consultations. Pharmacy clients who did not communicate with the pharmacist in English were also excluded. One of the research assistants was able to translate

the Client Satisfaction Questionnaire verbally into Cantonese or Mandarin<sup>5</sup> for those who could understand some English, but were unable to read it. All pharmacy clients were provided the option of having the research assistant read the Client Satisfaction Questionnaire to them. Persons unable to read English, or very elderly clients whose eyesight was poor, took advantage of this offer in 4.5% of the cases.

Individuals who brought in a written prescription (assumed to be a new drug for them) or asking for advice regarding over-the-counter (OTC) medication or other health issues were approached to participate in the study. In some cases, people who brought in a prescription were actually renewing an existing prescription—these persons were included in the study as there was no discrete way of determining whether the prescription was new or a renewal of one of their current medications. The on-site research teams were encouraged to work with the pharmacy staff to adapt, as necessary, the existing protocol for obtaining consent, in order to avoid interrupting the normal flow of traffic and business in the pharmacy. Most typically, busier pharmacies had one or more pharmacy technicians working at the front counter, resulting in the technicians having the first contact with the client. Thus, in some pharmacies, the technicians were responsible for initiating the request, while in other pharmacies the technicians served only as a mediator between the on-site researchers and the clients. Pharmacists employed at smaller pharmacies or working during a slower time of the day (night shift, for example) often had the first contact with clients, and were also given the option of introducing the study to clients or referring clients to the researchers. Overall

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5 Cantonese and Mandarin are the Chinese dialects spoken by a large number of persons residing in the study's sampling area.

confusion and moments of awkwardness were minimized, however, when the pharmacist or technician acted as a referral agent in the process of obtaining client consent.

### *Audiotaping and Tracking Pharmacist-Client Exchanges*

Being able to match the recorded consultation to the client's satisfaction rating was considered essential in this study, but it proved to be a complicated procedure that was highly dependent on using two research assistants at each site. The following system was developed and successfully allowed each pharmacist-client audio recording to be linked to the corresponding client satisfaction rating.

The supervisory research assistant, situated in the pharmacy dispensary, provided consenting clients with a project information leaflet (Appendix 2.2) and a sequentially numbered cash coupon worth one dollar (Appendix 2.3). The clients were instructed to retain the cash coupon until after they had spoken with the pharmacist. After their interaction with the pharmacist, clients presented the cash coupon to the second research assistant (seated outside the dispensary), who was responsible for administering and gathering the client satisfaction questionnaires.

In addition to obtaining consent, the supervisory research assistant was responsible for audiotaping and tracking the pharmacist-client interactions. In many pharmacies there was more than one pharmacist on duty. Thus, a flagging system was necessary to ensure that only the study pharmacist communicated with the consenting client. The developed system required that the supervisory research assistant mark the prescriptions of consenting clients with a small, brightly colored, adhesive note (a Post-It® note) containing the client's code

number (from the cash coupon). The Post-It® note cued the pharmacist(s) and pharmacy technicians that the prescription belonged to a study participant.

When the flagged prescription was ready to be distributed, the supervisory research assistant turned on the tape recorder and microphone, so that the pharmacist could document the code number written on the Post- It® note prior to approaching the client. After the consultation, the client went over to the second research assistant and exchanged the coded coupon for one dollar and a questionnaire that was coded with their number. Completed questionnaires were returned back to the research assistant, and placed sequentially in a large brown envelope labeled with details of the pharmacy visit (date, time, location).

#### *Protocol for Concluding a Pharmacy Visit*

Fifteen minutes prior to the completion of a scheduled research visit, no attempts were made to recruit study participants. After the last client had been recorded, the second research assistant took down the equipment. At this time, the supervisory research assistant debriefed the pharmacist to help relieve any post-experimental stress experienced by the pharmacist that may have been a result of being tape-recorded and observed at work (Carlsmith et al., 1976). The pharmacist was given a seven-page questionnaire examining the factors that predisposed, enabled, and reinforced his or her communication patterns and was asked to return the completed questionnaire (coded with his/her number) within two weeks. An invoice, complete with the pharmacist's mailing address was included with the questionnaire so that a \$50 honorarium could be forwarded to the correct pharmacist. The pharmacist and all staff who contributed to the project were then thanked for their time and efforts. Honoraria were

optional as some stores had policies preventing their employees from accepting cash or merchandise gifts for their participation in research projects and/or from pharmaceutical drug company representatives.

## **2.3 PARTICIPANTS**

The following section provides descriptions of the pharmacy, pharmacist, and client samples that participated in the study. Subsequent chapters will, therefore, be limited to summary descriptions only.

### **2.3.1 Response Rate**

A letter was mailed to all Lower Mainland , practising pharmacists (N=836) requesting their participation in the study. One-hundred and twenty-five (125) of the pharmacists were considered ineligible since they were not practising pharmacists or were no longer employed at their listed address. Pharmacists employed at two particular chains of pharmacies were also excluded because consent could not be obtained from the head office management of these pharmacy chains. A reminder postcard was mailed to the remaining pharmacists (n=691) approximately two weeks after the invitational letter. The combination of the invitational letter and reminder card recruited only 15 pharmacists for the study. A telephone call, further explaining the study's purpose and methods, was made to pharmacists (n=576), bringing the study total to 60 pharmacists. With only 75 pharmacists enlisted at this point, however, it was necessary to personally visit the managers of pharmacies that were not represented in the

study. Though the on-site visits were time consuming, they were very effective in recruiting the final 25 pharmacists required for the study; only 3 of the 28 pharmacies visited failed to provide a volunteer for the study. This final follow-up method brought the sample size up to 102, representing a 14.5% participation rate. Two participating pharmacists were later excluded from the study due to missing data (one pharmacist did not have any clients visit during the on-site visit and another pharmacists' consultations were lost due to a faulty audiotape). The final pharmacist sample was, therefore, 100.

### **2.3.2 The Pharmacy Sample**

Apart from the two pharmacy chains that would not give consent for the study to be conducted in their stores, there was participation from all other types of Lower Mainland pharmacies. Table 2.2 reveals that 28% of the pharmacies visited were independently owned ('independent') and/or a small chain of independently owned pharmacies (less than three stores). Almost one-third of the pharmacies belonged to larger corporate organizations. The remaining pharmacies were locally owned and operated as 'franchises'. When compared with the actual distribution of pharmacy types in BC's Lower Mainland, it appears that the large chain and franchise pharmacies were over-represented in the study, while independent pharmacies were under-represented.

The majority of pharmacies (61%) in the study employed the equivalent of two to three full-time pharmacists, while 57% of the pharmacies employed the equivalent of one to two full-time pharmacy technicians (57%). By performing many of the clerical duties associated with community pharmacy practice, pharmacy technicians can increase the amount

**Table 2.2 Sample Description of Participating Pharmacies**

	Frequency	Percent	1995 Distribution*
<b>Type of Pharmacy</b>			
Independent	21	20.6%	39%
Small Chain**	8	7.9	10%
Large Chain	34	33.3	27%
Franchise	39	38.2	25%
<b>No. of Full-Time Technicians Employed</b>			
0	23	23.0%	--
1-2	57	57.0	--
3-4	12	12.0	--
4+	8	8.0	--
<b>No. of Full-Time Pharmacists Employed</b>			
<2	20	20.0%	--
2-3	61	61.0	--
4-5	17	17.0	--
5+	2	2.0	--
<b>Private Consultation Area</b>			
Yes	22	22.0%	--
No	78	78.0	--
<b>Visibility of Client from Dispensary</b>			
Low	30	31.3%	--
Medium	36	37.5	--
High	30	31.3	--
<b>Visibility of Pharmacist from Front Shop</b>			
Low	32	32.0%	--
Medium	34	34.0	--
High	31	31.0	--
<b>Activity Level of Pharmacy</b>			
Busy	28	28.0%	--
Moderate	25	25.0	--
Slow	44	44.0	--

\* based on 1995 data from the College of Pharmacists of BC

\*\* 3 or fewer pharmacies

of time available for pharmacists to speak with clients. In this study, over three-quarters (77%) of the pharmacy's employed a minimum of one full time pharmacy technician.

Reports in the literature suggest that structural components within pharmacies, such as the availability of a private consultation area, or the height of a prescription counter, for example, can influence the quality of communication between pharmacists and clients (to be discussed in Chapter 3). Thus, it was important to collect descriptive data regarding the structure or layout of the pharmacy.

Approximately 78% of the pharmacies in this study's sample did not contain a private consultation area. The availability of a private area in the pharmacies participating in this study corresponds closely to other reports. For example, data collected in a 1995 survey of pharmacy clients indicated 77% of B.C. pharmacies do not have a private consultation area (Bokma and Brearley, 1995).

Data were also collected to examine the potential effect of a pharmacy's prescription counter on communication quality. The pharmacist's visibility to the client was assessed by a researcher standing in the non-prescription products area and estimating how well the pharmacist could be seen from a client's perspective. High visibility indicated that the pharmacist could be viewed from as far as two aisles away. Medium visibility meant the pharmacist was in view from the main aisle directly in front of the dispensary, while low visibility indicated the pharmacist was in view only when standing at the prescription counter. The visibility of the client (from the pharmacist's perspective) was estimated using a similar scale and was assessed by standing at the pharmacist's main work area and looking out into the front shop. Table 2.2 suggests that in terms of pharmacist and client visibility, the



pharmacies in this study were fairly equal in their distribution. It is not known, however, what the true distribution may be.

The activity level of the pharmacy was measured subjectively by the on-site researchers. Busy pharmacies were considered to be those that had a constant, fast paced flow of clients to and from the prescription counter. Moderate pharmacies were described as having a somewhat steady flow of activity, with only the occasional period of prolonged inactivity (i.e., > 10 minutes). Slow pharmacies were described as those that, during the course of the pharmacy visit, demonstrated a number of prolonged periods of prescription inactivity.

### **2.3.3 The Pharmacist Sample**

Table 2.3 indicates that slightly more male pharmacists (54% versus 46%) participated in the study. The age distribution of study pharmacists is similar to that of Lower Mainland pharmacists, with almost 60% ranging in age from 30 to 50 years.

Participating pharmacists reported working an average of 38.5 hours per week and providing 19 over-the-counter (OTC) drug consultations each day. Just under half (44%) of pharmacists reported providing more than 15 OTC consultations per day (range 1-60). Regrettably, the term *consultation* was not defined on the questionnaire, making it difficult to interpret the resulting numbers. Data collected by the on-site observers tracking the number of OTC interactions, however, indicated that it was exceedingly rare for a pharmacist to exceed nine OTC consultations during the four hour visit. Thus, it is highly probable that many pharmacists interpreted the term *consultation* to include OTC sales in their estimate.

**Table 2.3 Sample Description of Participating Pharmacists (n=100)**

	Frequency	Percent	1995 Distribution*
<b>Gender</b>			
Male	54	54%	52%
Female	46	46	51
<b>Employment Position</b>			
Owner	3	2.9	--
Owner/Manager	7	8.8	--
Manager	38	37.3	--
Staff Pharmacist	52	51.0	--
<b>Year of Graduation</b>			
1990-1995	21	21	20
1980-1989	34	34	32
1970-1979	34	34	29
1950-1969	11	11	17
1930-1949	0	0	1
<b>Pharmacist Age</b>			
20-29	23	23	21
30-39	29	29	30
40-49	31	31	31
50-59	12	12	11
60+	5	5	2
<b>No. of OTC Consults/Day**</b>			
1-9	21	21	--
10-15	35	35	--
16-25	25	25	--
25+	19	19	--

\* based on 1995 data from the College of Pharmacists of BC

\*\* self-reported data

#### **2.3.4 The Client Sample**

Pharmacy managers expressed great concern that the audiorecording process may be worrisome to their patrons. Despite these concerns, pharmacy clients were generally quite happy to participate in the study. A total of 786 clients consented to participate in the study, representing a participation rate of 85% (range 70%– 100%). The most common reason clients gave for not participating was a lack of time and almost all of the study's attrition resulted from clients being unable to complete their questionnaire (due to time constraints or failing to pick up their prescription during the study period).

Table 2.4 indicates that the client sample was predominately Caucasian (78.3%), and likely under-representative of the large (approximately 20 – 65% depending on the pharmacy location) Asian population residing in the study's sampling area.

A surprisingly large number of pharmacy clients (54.5%) modestly rated their health as being poor to average. Despite their perceived poor health, only about 50% of the clients in the sample had visited a pharmacist during the past year.

### **2.4 INSTRUMENT DEVELOPMENT**

Three research instruments were developed for use in this study: 1) the Pharmacists' Questionnaire collected self-reported data on the factors that predispose, enable, and reinforce pharmacist-client communication; 2) the Quality of Communication Scale was used by a panel of expert raters to evaluate the quality of prescription and non-prescription exchanges between pharmacists and clients; and, 3) the Client Satisfaction Rating Scale obtained clients'

**Table 2.4 Characteristics of the Client Sample (n=786)**

	Frequency*	Percent
<b>Gender</b>		
Male	272	35.8
Female	484	64.2
<b>Age</b>		
14-18	36	4.7
19-29	144	18.8
30-49	354	46.2
50-64	113	14.8
65+	119	15.5
<b>Education</b>		
Grade 8 or less	40	5.1
Grade 9-11	93	11.8
Grade 12	177	22.5
Technical school	75	9.5
Some college/university	173	22.0
College/university degree	194	24.7
<b>Ethnicity</b>		
Caucasian	592	75.3
Asian	81	10.3
East Indian	38	4.8
Aboriginal Indian	27	3.4
Other	15	1.9
<b>No. of Visits to Pharmacist in Past Year</b>		
0	365	50.2
1-3	117	16.1
4-9	107	14.7
10+	138	19.0
<b>Perceived Health Status</b>		
Poor	23	3.0
Below average	68	9.0
Average	322	42.5
Above average	217	28.7
Excellent	124	16.4

\* frequencies may not total 786 due to missing data

visit-specific assessment of their interaction with the pharmacist. The following sections describe the development of these instruments and provide data establishing the reliability of their items and the validity of inferences that will be drawn from their use in subsequent chapters.

#### **2.4.1 The Pharmacists' Questionnaire**

##### *Introduction*

The Pharmacists' Questionnaire, conceptually developed using the PRECEDE-PROCEED framework (Green 1974; Green et al., 1980, Green and Kreuter, 1991; Green and Joab, 1997), is a self-report measure of the **predisposing, enabling** and **reinforcing** factors associated with quality pharmacist-client communication. A review of the literature (see Chapter 3) revealed that 13 variables, representing the above three constructs, influenced pharmacist-client communication (Table 2.5). The current study restricted itself to measuring only 11 of the 13 variables, as the remaining two variables (pharmacy laws and regulations and financial remuneration) were difficult to assess within the scope of this study.

The specificity of the questionnaire's use required that a new instrument be developed. A number of previously developed instruments however, provided a majority of the final questionnaire items (Sanazaro, 1983; Moos, 1988; Mullen and Holcomb, 1990; Smith, 1990; MacDonald, 1991; Ortiz, Walker and Thomas, 1992; Raisch, 1993). Many of the items measuring the predisposing attitudinal factors were obtained from an instrument designed by Ortiz and his colleagues (1992). This group of researchers had developed a 28-item, attitudinal scale measuring pharmacists' orientation or attitude towards patient counselling.

The instrument was tested on 1,361 Australian community pharmacists and was found to have an internal consistency, measured using Cronbach's alpha, of 0.89. Factor analysis of the scale items revealed two general factors accounting for 42% of the total variance and 88% of the common variance; a) perceived benefits of counselling; and, b) personal justifications or excuses for not counselling. A limitation of the scale's usefulness as a research tool to discriminate between pharmacists in this study lies in the finding that only 1% of the study pharmacists could be considered to have negative orientation towards patient counselling.

**Table 2.5 Pharmacist and Pharmacy Variables Influencing Pharmacist-Client Communication**

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**A. Predisposing Factors**

1. Pharmacist attitudes toward pharmacist-client communication
2. Pharmacist adherence expectations (the extent to which clients follow advice)
3. Pharmacist outcome expectations regarding improved compliance and increased patronage
4. Pharmacist job/role expectations
5. Pharmacist self-efficacy to communicate

**B. Enabling Factors**

6. Technical resources (journals, library books)
7. Space to communicate privately with clients
8. Time to communicate with clients
9. *Financial remuneration\**

**C. Reinforcing Factors**

10. Organizational structure of the pharmacy
  11. Rewards/Incentives
  12. Support from peers and management
  13. *Pharmacy laws/regulations\**
- 

\*denotes variables influencing pharmacist-client communication, but not examined in this study

Remaining items in the Pharmacist Questionnaire were adapted from previously developed instruments - some for use with pharmacists (Smith, 1990; Raisch, 1993), but others with physicians and/or other health care providers (Sanazaro, 1983; Moos, 1988; Mullen and Holcomb, 1990; McDonald 1991). The majority of items used a five-point Likert-type response scale; however, some items used a three-point or dichotomous response scale. In terms of reliability, it would have been preferable to use a seven-point scale for all of the items (Streiner and Norman, 1991), but because almost all of the items had been obtained from other scales, it was decided to maintain the instruments' originally tested response scales.

Prior to pilot testing, a draft version of the questionnaire was circulated among UBC faculty and graduate students in the health and behavioural sciences to ensure face and content validity. During pilot testing, the questionnaire was pre-tested on a small sample of pharmacists (n=3) to correct problems associated with ambiguity or wording.

### *Scale Format*

The questionnaire (Appendix 2.4) was seven pages long and contained 63 items measuring 11 independent variables assigned *a priori* to one of the three categories of factors hypothesized to influence pharmacist-client communication. Specifically, the questionnaire included 31 items measuring predisposing factors, 11 items measuring enabling factors, 11 items measuring reinforcing factors, and 9 questions collecting descriptive and demographic information regarding the sample of pharmacists. A mixture of positively and negatively worded questions pertaining to pharmacist-client communication were included in the questionnaire, with most items being scored as follows: strongly agree = 5, agree = 4,

uncertain=3, disagree = 2, strongly disagree = 1. Negatively worded items were reverse scored in the coding of data. The majority of items not using this type of disagree/agree continuum incorporated a comparable 5-point scale that resulted in a score of "5" as being optimal and a score of "1" as being the least desirable response. Exceptions to the above scaling systems include one variable that used a dichotomous response category (serving as a screening item), and two other items using a three-point response scale. Open-ended questions (such as "what type of incentives or rewards are used in your store for pharmacists demonstrating good performance?") were entered as string variables and then collapsed into general categories using an ordinal scale.

#### *Analyses with the Pharmacist Questionnaire*

Using the SPSS for Windows software program (version 6.0), the reliability of items in the Pharmacists' Questionnaire and the validity of inferences that could be drawn from its use were assessed. Cronbach's alpha estimated the internal consistency of the scale's three constructs (predisposing, enabling, and reinforcing factors). To ensure the scale's homogeneity, items that substantially lowered the constructs' internal consistency and/or failed to correlate with the scale construct greater than, or equal to 0.20, were removed. A factor analysis was undertaken with the remaining items to assess their construct validity.

#### ***Results***

Cronbach's alpha was used to assess the internal consistency of items in the questionnaire's three constructs. The reliability of the 31 items assigned to the predisposing



factors construct was 0.90. Six enabling factor items failed to correlate with that construct at greater than or equal to 0.20 and were removed, thus leaving five items with an alpha coefficient of 0.54. In the reinforcing factors construct, four items demonstrated weak item-total correlations and were removed, leaving seven items with an alpha coefficient of 0.73. The PRECEED-PROCEED model is a conceptual framework, and although it is theoretically derived, its primary function is not to drive statistical data analyses. The assignment of scale items to the model's constructs is theoretical and serves as a framework to guide study design and the interpretation of findings; thus, flexibility in assigning variables to constructs is warranted. For example, depending on how it is viewed, the variable "pharmacists perceived knowledge" could be conceptualized as being either a predisposing or an enabling factor. In this study, self-efficacy, a measure of the pharmacists' perceived knowledge and ability to communicate with clients, was originally assigned to the predisposing factors construct. However, by including the self-efficacy items in with the enabling factor items, the alpha coefficient for the revised enabling factors construct improves considerably (0.81), with minimal influence on the predisposing factors construct ( $\alpha = 0.87$ ). Table 2.6 lists the Cronbach's alpha values for the constructs that have been revised for improved internal consistency and homogeneity. Appendix 2.5 details the items that were retained and the items that were removed from the Pharmacists' Questionnaire.

**Table 2.6 Internal Consistency of Constructs Measured in the Revised Pharmacists' Questionnaire**

<b>Construct</b>	<b>No. of Items in Revised Scale</b>	<b>Cronbach's alpha (Revised Scale)</b>
Predisposing Factors	21	0.87
Enabling Factors	12	0.81
Reinforcing Factors	7	0.72

Factor analysis of the questionnaire items was used to estimate the questionnaire's construct validity. Principal components extraction, followed by varimax rotation of the items, resulted in 11 factors that accounted for 69.7% of the total variance (Table 2.7). The factor loading matrix suggests that items in the Pharmacists' Questionnaire load onto factors that can be predominantly classified as being predisposing, enabling, or reinforcing, and that many of the individual items in the questionnaire are holding together as variables.

### ***Summary***

The Pharmacists' Questionnaire is a multidimensional instrument that measures self-reported factors that predispose, enable, and reinforce quality communication. The original instrument (65 items), incorporated a combination of nominal and ordinal response categories.

**Table 2.7 Factor Loadings Obtained After Varimax Rotation of Pharmacist Questionnaire Items**

Variable*	FACTOR										
	1	2	3	4	5	6	7	8	9	10	11
ATT2	.59										
ATT4	.60										
ATT5	.52										
ATT8	.53										
OUTCOM3	.68										
SELFEFF2	.72										
SELFEFF3	.75										
SELFEFF4	.85										
TIME1	.71										
OUTCOM1		.71									
OUTCOM2		.75									
OUTCOM4		.37									
OUTCOM5		.41									
OUTCOM8		.48									
OUTCOM9		.64									
SELFEFF1		.41									
SUPPOR2		.65									
ORGSTR1			.81								
ORGSTR2			.74								
REWARD1			.67								
SUPPORT1			.75								
OUTCOM10				.57							
OUTCOM6				.81							
OUTCOM7				.84							
ATT1					.69						
ATT6					.86						
SELFEFF5						.79					
SELFEFF6						.72					
ADHEREX1							.75				
ADHEREX2							.62				

**Table 2.7 (Continued)**

Variable*	FACTOR										
	1	2	3	4	5	6	7	8	9	10	11
SPACE2								.50			
SPACE3								.73			
REWARD2									.57		
REWARD3									.77		
TIME4											.84

**Final Statistics**

Communality	Factor	Eigenvalue	% of variance	Cumulative %
.75	1	8.96	23.6	23.6
.64	2	3.19	8.4	32.0
.74	3	2.73	7.2	39.2
.67	4	1.99	5.2	44.4
.73	5	1.85	4.9	49.3
.65	6	1.60	4.2	53.5
.80	7	1.50	4.0	57.5
.64	8	1.40	3.7	61.1
.51	9	1.16	3.0	64.2
.58	10	1.06	2.8	67.0
.73	11	1.02	2.7	69.7

\* see Appendix 2.6 for a description of variables

It measured 11 variables that comprised the three behavioural constructs, in addition to a variety of questions that gathered descriptive, demographic data on the participants. Twelve items were removed from the original scale based on poor item-total correlations and/or Cronbach alpha values. The remaining 38 items contained within the instrument's three constructs demonstrated adequate internal consistency with Cronbach's alpha coefficients ranging from 0.72 (reinforcing factors construct) to 0.80 (enabling factors construct) to 0.87 (predisposing factors construct). Factor analysis of the 38 items resulted in 11 items accounting for almost 70% of the total variance. The 11 items are believed to provide an adequate representation of the predisposing, enabling, and reinforcing factors constructs in the Pharmacists' Questionnaire.

#### **2.4.2 The Quality of Communication Scale**

##### ***Introduction***

The second instrument developed for this study, the Quality of Communication Scale, was constructed to obtain an estimate of the quality of communication occurring between pharmacists and clients. Ratings resulting from the scale served as the study's impact variable, quality of communication. A number of methods for assessing quality exist (Green and Lewis, 1986):

Exclusionary: Defines quality performance by ruling out everything that fails to meet the definition, such as certification and licensure that is denied to practices, institutions, or individuals that fail to meet criteria.

Problem Checklist: Requires that all barriers to effective practice be identified, and each case of practice analyzed to determine whether it commits these errors or effectively handles the barriers.

Consumer Satisfaction: Determines quality on the basis of what consumers or patients prefer or demand, evaluated on the basis of market criteria or consumer satisfaction surveys.

Prescriptive: Outlines quality performance by listing the steps that should be taken in most situations.

General Principles: Defines quality performance by specifying the essential characteristics or principles of an activity or program.

Diagnostic-experimenting: Defines quality performance by the extent to which the instructional methodologies are theoretically justified and the targets are probable causes of the health behaviours, based on diagnostic results.

Acknowledging the financial and temporal limitations of this research project, the “general principles” and “consumer satisfaction” methods appeared to be the most suitable ways of evaluating the quality of pharmacist-client communication. The development of the instrument to measure client satisfaction is discussed further on in Section 2.3.3. The sections that follow discuss the development of an instrument used by an expert panel of raters (who in this study were faculty of pharmacy educators and pharmacy practitioners) to evaluate the quality of pharmacist-client communication. It allows for the differing values and expectations of raters to be meaningfully incorporated into a composite score.

### ***Scale Format***

A literature search for a previously validated instrument to measure the quality of pharmacist-client communication revealed a scale developed by Smith and her colleagues (Smith, Salkind and Jolly, 1990). While this scale was eventually discarded, its content is worth discussion as a means of providing context for the measure that was ultimately developed for use in the study.

In Smith's U.K. study, a team of community pharmacists and medical practitioners developed the following evaluative characteristics that could be used to assess pharmacist consultations:

Information gathering: A review of the questions (if any), that were asked by the pharmacist and whether the information obtained was sufficient to enable an accurate judgement to be made.

Instructions: An assessment of the instructions given by the pharmacist for the short-term management of symptoms and the follow-up of possible subsequent courses of events.

Sale of product: An examination of consultations in which there was a sale of an identifiable product. In cases where more than one product was sold, a separate assessment of the appropriateness of each was made.

Explanation: An evaluation of the degree of explanation given by the pharmacist for the suggested course of action, and in response to issues raised by the client.

Referral: An assessment of the appropriateness of referral advice was made.

Disease prevention/health promotion: A review of the extent to which the pharmacist identified and discussed underlying problems and relevant preventative measures.

Communication: An evaluation of the pharmacist's listening and responding skills.

Two additional items examining the consultations' overall rating of safety management and the overall rating of appropriateness were also included by the original authors.

The consultations were independently assessed by judges on each of the nine criteria using a visual analogue scale with six divisions. All scales spanned from "poor" to "excellent" with an anchored description at the endpoints, and a score of 1 to 6 was assigned to each consultation on each characteristic. Assessor reliability was evaluated by asking assessors to evaluate a random sample of six consultations on two occasions at least one week apart. A high level of agreement in the ratings of the assessors was revealed.

After careful consideration, it was decided that the Smith, Salkind, and Jolly scale (1990) would not function well in this study. First, it was intended only for use in the evaluation of communication surrounding non-prescription medications or general health advice. This study aimed to collect a more comprehensive sample of pharmacist-client communication by including interactions pertaining to prescription products as well. Second, their scale was not summative; since "communication quality" is the impact variable in this study, it is necessary to have a composite quality of communication score for use in the analyses. Finally, after circulating Smith's scale to clinical Faculty of Pharmaceutical Sciences professors, a number of substantive revisions were suggested, thus supporting the development of a new project-specific instrument.

The length of the new instrument was extremely important as it was anticipated that anywhere from 700 to 800 pharmacist-client interactions would be collected and each would



require a rating. Most rating instruments used with audiotapes require two to three times the actual tape time to complete the assessment. For example, if a pharmacist-client consultation was three minutes long, it was anticipated that it would require approximately six to nine minutes to evaluate the consultation. A literature review had revealed that the average consultation time would be close to three minutes; it was anticipated, therefore, that the expert panel would require about 80 hours (or 12 full days, including breaks) to complete the analyses. This was believed to be unreasonable, and a number of concessions were made.

First, it was believed that it would be possible to convene an expert panel to participate in this project for a *maximum* of three full days; therefore, if the eight-member panel was divided into four pairs, each pair could be responsible for one-quarter (or three days) of evaluation. The instrument evaluating the quality of pharmacist-client communication would need to be brief and easy to use so that all consultations could be evaluated within the allotted time period. An unnecessarily long instrument would impede its ease of use and potentially increase the amount of time required to complete the evaluation beyond the tolerable limits of any expert panel.

The development of such an instrument, the Quality of Communication Rating Scale, was facilitated by existing resources, such as the evaluation form used for students' clinical rotation in the Doctor of Pharmacy program at the University of British Columbia, and prescription and OTC counselling guidelines for pharmacists as outlined by McBean-Cochrane (1986), Thompson (1993), and Farris and Kirking (1993). Two separate (yet parallel) Quality of Communication rating instruments were developed for the study – one for prescription medications, and one for non-prescription (OTC) or general health advice consultations.

The evaluation form for prescription consultations consists of eight items targeting the following pharmacist behaviours: establishes relationship, introduces medication, conducts client assessment, discusses medication administration, discusses precautions, discusses storage instructions, facilitates client understanding, and displays interpersonal skills. Examples of behaviours that would be considered in the scale items are listed in Table 2.8.

A ninth item was included in the scale to obtain the rater's overall impression of the consultation. This item provided raters with an informal weighting system that could minimize (or maximize) the importance of individual behavioral skills in relation to a particular circumstance. For example, although British Columbia's Mandatory Patient Dialogue By-law (College of Pharmacists, 1992) requires pharmacists to discuss the storage requirements of all medications being dispensed, failing to advise clients of the refrigeration requirements of insulin would be considered a more serious deficiency in communication than failing to advise a client on the storage requirements of a short-term supply of penicillin tablets.

The scale allowed pharmacist-client communication to be rated on a seven-point scale anchored at the mid- and end-points. Each of the pharmacist behaviours were rated by the following system: "1" represented "poor"; "4" represented "satisfactory"; and "7" represented "very good." Smith had anchored her scale from "poor" to "excellent;" however, the term "excellent" may appear extreme to raters, and may contribute to the panel's tendency to avoid the end-points of the scale. In this project, the term "very good" was believed to be less threatening to expert panel members who may be reluctant to award a consultation with a score of "7," thus minimizing potential end-aversion bias in the use of the scale.

**Table 2.8 Item Descriptions for the Quality of Communication Rating Scale  
(Prescription Products Form)**

Scale Item	Behavioural Examples
1. Establishes relationship	Greets client and introduces self Identifies client (name and address) Clarifies whom the medication is for
2. Introduces the medication	Provides brand and generic name Provides its therapeutic indication
3. Client assessment	Assesses client's current knowledge of the drug Determines if they have had it before Queries on previous unusual/ allergic reactions to the drug
4. Administration	Provides label directions Provides special instructions Provides information on missed doses Provides information on duration of treatment Provides information on refill status
5. Precautions	Tells about side effects and how to minimize Warns of adverse effects requiring attention Discusses drug/food interactions Informs of monitoring of therapy Provides health advice/disease prevention
6. Storage instructions	Where, how long, etc.
7. Facilitates client understanding	Checks for understanding, asks for questions Uses written information Uses appropriate terminology Provides memory aides
8. Interpersonal skills	Friendly, concerned, empathetic Willing to listen

Prescription and non-prescription medications differ in the technical or content requirements for quality communication. Thus, a parallel rating form was developed for use with OTC medications. The over-the-counter consultation rating form used the same seven-point response scale as the prescription consultation rating form, but contained a few modifications making it more specific to an OTC encounter. It included the following categories: establishes relationship, assesses client, selects suitable product, discusses medication administration, discusses non-pharmacologic approaches, provides follow-up and monitoring advice, facilitates client understanding, and displays interpersonal skills. The OTC scale's emphasis on the pharmacists' assessment skills and provision of supportive non-pharmacologic treatments form the key differences between it and the Prescription Consultation Rating Form.

### ***The Rating Process***

Upon completion of the pharmacy visits, an expert panel of eight members was convened, made up of four pharmacists who had participated in the study and four faculty members actively involved in the training and evaluation of pharmacy undergraduates. The eight panel members worked in pairs (one faculty, one practitioner) to evaluate the quality of the pharmacist-client interactions. Early planning in the study had established that the ideal panel of evaluators would have the technical competence to evaluate the quality of pharmacist-client communication, but have sufficient work experience to be able to place the pharmacist-client exchanges in the proper context.

Comments obtained from previous research with this pharmacist population (Paluck, 1992) indicated that many community pharmacists believe that pharmacy practice research is unproductive as it fails to acknowledge the constraints of community pharmacy practice and typically results in additional guidelines or directives that increase the workload on a group of professionals who already feel extremely constrained. Thus, to ensure adequate representation of practicing pharmacists, half of the expert panel members were chosen from the study's sample of participating pharmacists.

Faculty members in the Division of Pharmacy Practice and Clinical Pharmacy were sent an invitational letter offering a \$750 honorarium for their commitment to the three-day event. To identify practicing pharmacists who would be suitable rater candidates, notes were kept during the field visits on pharmacists who appeared to provide exemplary service (in the eyes of the on-site observers). Four of these pharmacists were randomly selected and offered the \$750 honorarium for the three-day commitment. It was later discovered that three of the four invited practicing pharmacist panel members had evaluation experience by serving as volunteers on various licensure committees with the College of Pharmacists of BC, and could legitimately be considered experts.

On the first morning of the three-day rating period, the expert panel was introduced to the rating instruments. A consensus discussion on the criteria for ratings of poor, satisfactory, and very good occurred for each of the nine items. It was agreed that practice guidelines established via the College of Pharmacists' Mandatory Patient Dialogue Bylaw be the minimum standard required for pharmacists to obtain a rating of "4", which denoted a satisfactory consultation. The panel practiced on three consultations, after which the ratings

were discussed and compared. Each of the four pairs was required to evaluate approximately 175 pharmacist-client interactions. The rater pairs were instructed to not compare scores upon completion of the training session.

Examining the test-retest reliability of the scale and assessing the inter- and intra-rater variability involved the use of nine test consultations that were dubbed into all master tapes and spaced throughout each of the three days. That is, the nine baseline consultations were evaluated by all eight of the panel members, each day, during the three-day event. Every morning, panel members were required to recalibrate their assessments by evaluating the original three training consultations; these ratings were then compared with their original training scores. To be able to assess differences in quality scores that may occur between faculty members and practicing pharmacists, there was no attempt made (after the initial training) to achieve agreement between these two groups. Intra-rater reliability was considered to be much more important.

## ***Results***

Reliability refers to the precision of a measurement scale or the reproducibility of its results (Streiner and Norman, 1991). In this study, Cronbach's alpha was chosen to estimate the scale's internal consistency. Since one of the scale's primary functions was to discriminate among pharmacist consultations, a high degree of internal consistency was not desirable or sought. Scale items that failed to correlate to the item total were not removed because each of the scale items represented a professional requirement of quality pharmacist-client communication.

The internal consistency of the Quality of Communication Rating Scale was calculated to be 0.82 when used by faculty panel members, and 0.95 when used by practitioner panel members. The rather large difference between faculty and practitioner panel members is surprising, but not unusual, since reliability is a measure of how the scale responds when applied to certain populations under certain conditions (Streiner and Norman, 1991).

Inter- and intra-observer reliability were calculated for the test consultations coded by the expert panel members. Though intra-observer reliability is of paramount importance, inter-observer reliability within the rater pairs is less so, since the panel was convened to represent the values and expectations of academia and practice. Scores provided by panel members were expected to be positively correlated to each other, but not necessarily identical in value. To estimate rater reliability, nine consultations were randomly selected prior to the start of the expert panel orientation. There was no attempt to control or vary the range of scores or content areas that would be covered in the test consultations as none had been rated yet. Ideally, more than nine consultations should have been used to assess rater reliability; however, to evaluate these nine consultations added an additional hour on to each rating day. The nine test consultations selected were a mixture of prescription and OTC consultations with scores ranging from a 2.0 to 6.0. Four of the test consultations were administered at the start of the three test days, while the remaining five consultations were nested within the afternoon tapes to detect rater fatigue. The rating session on Day 1 began in the afternoon (since the morning was used for orientation), preventing the administration of the afternoon consultations that day. Thus, a total of 22 test consultations were rated by each pharmacist,

and were used to estimate the inter-rater and intra-rater reliability of the Communication Quality rating scale items.

The expert panel members were not informed of the test consultations and it was hoped that due to the large volume of consultations the panel members listened to (approximately 175 each), they would not remember having listened to the test consultations the previous day. Day 1 and day 2 of the ratings were scheduled in one weekend, but day three was held one week later, minimizing the possibility that raters had remembered their previous scores (Streiner and Norman, 1991).

Table 2.9 provides the indices for both inter- and intra-rater reliability. There are two predominant ways of calculating rater reliability: one method examines reliability as a correlation coefficient (intra-class correlation); the other reports it as a frequency or percent of agreement (kappa). Since total agreement among raters is unlikely when using scaled responses, a weighted kappa method is best for a study such as this, since it allows for partial credit to be given when responses differ by only one or two categories. Furthermore, when the weighted kappa method is used, its result is identical to the intra-correlation coefficient method (Streiner and Norman, 1991). A limitation of the weighted kappa method is the tedious calculations involved; therefore, a method suggested by Perreault and Leigh (1989) to calculate the reliability index based on a frequency percentage was used.

$$I = \sqrt{[ (F/N) - (1/k) ] [k / (k-1)]}$$



Where:  $I$  = the inter-rater reliability

$F$  = the observed frequency of agreement between raters

$N$  = the total number of judgements, and

$k$  = the number of categories

This method did not employ a weighting system, but allowed for a fairly quick and easy calculation. For the purposes of this study, rater agreement was defined as occurring when raters' scores were within 1.0 of each other; scores exceeding a 1.0 difference were counted as a "disagreement." Support for allowing differences of 1.0 or less to be counted as a rater agreement is found within the scale's standard error of measurement (SEM), which is the error of measurement associated with any individual score in the scale (Streiner and Norman, 1991). The SEM for the Quality of Communication rating scale was calculated to be 0.35; therefore, based on the scale's lower alpha coefficient (0.85), a score could deviate by 35% of the standard deviation (st. dev. = 0.91), which is fairly close to plus or minus 0.3. The clinical significance of ratings differing by 0.3 is negligible and probably does not become meaningful until ratings differ by more than 1.0. For example, there is little practical difference in a quality rating of 1.0 versus 1.3 or even 6.0 versus 7.0 – both are considered to be very poor or very good. However, there appears to be a perceptual difference between scores that differ by a spread greater than 1.0, for example a 1.0 and 3.0, or a 5.5 and 7.0.

**Table 2.9 Rater Reliability of Scores Obtained with the Quality of Communication Rating Scale**

<b>Rater(s) No.</b>	<b>Frequency of Agreement</b>	<b>Reliability Index*</b>	<b>Practitioner (P) or Faculty Member (F)</b>
<b>Intra-Rater</b>			
1	20/22	0.94	F
2	20/22	0.94	P
3	22/22	1.00	F
4	21/22	0.97	P
5	21/22	0.97	F
6	21/22	0.97	P
7	19/22	0.91	F
8	22/22	1.00	P
<b>Within the Pairs</b>			
1 & 2	20/22	0.94	F & P
3 & 4	21/22	0.97	F & P
5 & 6	20/22	0.94	F & P
7 & 8	18/22	0.88	F & P
<b>Inter-Rater</b>			
1 & 3	19/22	0.91	F & F
1 & 5	16/22	0.82	F & F
1 & 7	15/22	0.78	F & F
3 & 5	20/22	0.94	F & F
3 & 7	16/22	0.82	F & F
5 & 7	12/22	0.67	F & F
2 & 4	21/22	0.97	P & P
4 & 6	19/22	0.91	P & P
6 & 8	18/22	0.88	P & P
4 & 8	18/22	0.88	P & P
2 & 6	19/22	0.91	P & P
2 & 8	18/22	0.88	P & P

\* Perreault and Leigh, 1989

**Table 2.10 Internal Consistency of the Quality of Communication Scale Items**

<b>Combined Rater Values*</b>	
Scale Mean	62.78
Scale Variance	155.64
Scale Standard Deviation	12.47
Item Means	3.49
Item Variance	0.83
Cronbach's alpha	0.85

\* Combined ratings from each member of the rater pair on all 9 items (n=565)

### ***Summary***

The Quality of Communication Scale was developed to obtain a comprehensive assessment of the quality of pharmacist-client communication. The scale was developed through a process that involved the retrieval of scale items from the pharmacy literature, and the refinement of the resulting items through an expert review process. Two separate but parallel instruments were developed to allow for specificity according to the consultation type (i.e., prescription or non-prescription products). The scale was tested by eight expert panel members (representing practicing pharmacists and UBC Faculty of Pharmacy educators), who in total, evaluated 765 audio-taped pharmacist-client interactions.

Cronbach's alpha, a measure of the scale's internal consistency, was found to be adequate for the purposes of the study (0.82 when used by pharmacy educators and 0.95 when used by pharmacy practitioner panel members). A modified, weighted kappa approach indicated a high frequency of agreement for the inter-rater, intra-rater, and test-retest ratings.

Feedback provided by the expert raters indicated that the Quality of Communication Rating Scale was easy to use, easy to understand, and allowed for a quick but comprehensive assessment of audio-taped recordings of pharmacist-client interactions.

#### **2.4.3 Client Satisfaction Rating Scale**

The third instrument required to address the study's research questions was a measure of the acceptability or quality of pharmacist-client communication from the client's perspective. To obtain this rating, the Client Satisfaction Rating scale (CSR) was developed.

#### ***Introduction***

Ware and Hays (1988) suggest that a good client satisfaction instrument must consider the impact of pharmacist behaviour and it should: 1) be appropriate for use in the environment where care is given; 2) have both positive and negative questions; 3) have acceptable reliability and validity; 4) have multiple items, yet be short enough to encourage high response rates; 5) allow a range of ratings from poor to excellent; 6) have sufficient response options to allow variability to differentiate among different groups under consideration; and, 7) allow the assessment to be specific to different types of visits.

### *Scale Format*

The development of the CSR scale began with a review of patient satisfaction studies in the pharmacy and medical literature to identify previously developed instruments that had been used to evaluate patient-provider communication. The search also included the retrieval of instruments that addressed patient satisfaction with pharmacy or medical services and patronage motives of health care consumers. Over 155 items that pertained to patient-provider communication were retrieved from thirteen previously developed instruments (Roter, 1977; Wolf et al., 1978; DeMatteo and Hays, 1980; Ware, 1981; Wiederholt, 1987; Cherkin et al., 1988; Ware and Hays, 1988; McKeigan and Larson, 1989; Weiss and Senf, 1990; Bowman et al., 1992; Robbins et al., 1993; Khayat and Salter, 1994; McLeod et al., 1994).

Based upon findings reported in the literature, the scale was developed to include three theoretical dimensions: technical quality of care, interpersonal quality of care, and the efficacy or perceived outcomes of care. The items that were retrieved from the literature were assigned *a priori* into one of the three theoretical dimensions of client satisfaction; similar and duplicate items were removed. Peer and expert review were used to ensure that the readability of the scale items remained at a Grade 8 level and that terms without a direct cultural translation for recently immigrated or non-accultured Canadians be avoided. A major consideration in the development of the instrument was ensuring a high response rate. To do so, the questionnaire would have to be capable of being completed in a relatively short amount of time. Pharmacy patrons, in general, tend to be in a hurry, often using lunch or work breaks

to get prescriptions filled; therefore, the goal was to develop an instrument that could adequately estimate the quality of the communication but not exceed five minutes to complete.

The final 11-item instrument (Table 2.11) measures three theoretical dimensions of client satisfaction, and two items estimate the degree to which pharmacists may alter their regular performance (from the client's perspective). These two items were also an indicator of the degree to which the pharmacist sample may be biased (with respect to communication skills) relative to the pharmacist population. In addition, seven socio-demographic questions collected information that could describe the sample of pharmacy clients.

All items contained a personal rather than general referent; that is, they would focus on the individual's personal experience *that* day and with *that* pharmacist rather than on the experience of people in general or with their previous visits with a pharmacist.

Seven of the scale items used a five point Likert-type response scale ranging from "not at all" to "very much," while four items incorporated an expectation-referenced response scale, where 1 represented a skill performed "less than expected," 3 represented "about what expected," and a score of 5 indicated the skill was performed "much more than expected." One may argue that a score of 3 (representing service that is about what the client expected) may not be inferior to service awarded a score of 5, and that a score of 5 (representing service that was a lot more than expected) may actually denote a high degree of performance embellishment by the pharmacist. That is, it would depend on the personal expectations of the client; however, research indicates that client satisfaction increases when expectations are exceeded (Schommer, 1995). For the purposes of this study, it is accepted that a client is

**Table 2.11 Original Assignment of Items in the Client Satisfaction Rating Scale**

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**Interpersonal Quality of Care (4 items)**

1. How respectful was the pharmacist?
2. How friendly was the pharmacist?
3. Do you feel that the pharmacist spent enough time with you?
4. Did the pharmacist make you feel as if you could talk about any type of problem?

**Technical Quality of Care (5 items)**

5. How well did the pharmacist explain things?
6. How satisfied are you with the amount of information the pharmacist gave you?
7. Do you feel that the pharmacist asked questions that were too personal?
8. Do you think that the pharmacist avoided answering your questions?
9. Do you have any doubts about the ability of this pharmacist?

**Efficacy of Care /Outcomes (2 items)**

10. How concerned do you think the pharmacist was about your health?
11. Do you think this pharmacist could have given you better service?

**Estimator of Pharmacist Performance Bias and Sample Bias (2 items)**

12. How does the service you received today compare with what you usually get from this pharmacist?
13. How does the service you received today from this pharmacist compare with what you receive from other pharmacists?

**Client Variables (7 items)**

1. Have you ever spoken with this pharmacist before? If yes, how often in the past year?
  2. Age
  3. Sex
  4. Current job/occupation
  5. Race
  6. Last year of school completed
  7. Perceived health status
-

more satisfied when his or her expectations are exceeded and that the data be treated as continuous.

## **Results**

The internal consistency of the CSR scale was estimated with Cronbach's alpha; an alpha value of 0.78 was obtained for the full (11 item) scale. Table 2.12 displays the internal consistency values for the study's three primary constructs that ranged from 0.27 for the efficacy of care construct to 0.56 for the technical quality of care construct to 0.76 for the interpersonal quality of care construct.

Construct validity of the CSR scale was estimated with factor analysis and via an examination of interdimensional correlations. A correlation matrix revealed that all of the scale items were moderately correlated to at least three other items ( $r = .30$  or higher). Using principal component analysis, three factors were extracted accounting for 59.3% of the total

**Table 2.12 Internal Consistency of Client Satisfaction Rating Scale Items**

	<b>No. of items</b>	<b>Cronbach's Alpha</b>	<b>n</b>
<b>Full-scale</b>	11	0.78	744
<b>Scale Constructs</b>			
Technical Quality	5	0.56	755
Interpersonal Quality	4	0.76	757
Efficacy/Outcomes	2	0.27	750



variance. Varimax rotation of the factors resulted in each scale item loading onto only one factor (Table 2.13). The factors did not provide a perfect match with the theoretical framework of the CSR, but there was substantial overlap. For example, Factor 1 closely resembles the Interpersonal Quality of Care dimension, but includes one item from the Technical Quality of Care dimension. Factor 3 primarily consists of technical quality items plus one efficacy/outcome item. Factor 2 is a bit obscure, as it comprises items from all three of the theoretical dimensions of satisfaction. This may be a legitimate representation of overall efficacy or outcomes since it includes items from all three dimensions and may be how many people arrive at an overall or global satisfaction rating.

Table 2.14 displays the Pearson correlations found between the dimensions of client satisfaction: Part A details correlation coefficients for the theoretical (literature-derived) scale dimensions, and Part B provides correlation coefficients for the factors obtained from the principal components extraction. In general, interdimensional correlations were stronger with the theoretical framework (range 0.44 to 0.58) when compared to the factors extracted via factor analysis (range 0.14 to 0.49). The weaker interdimensional correlations obtained with the factor-derived model suggest that these constructs demonstrate greater independence of each other (compared to the constructs in the theoretical framework) and that they may be serve as a better measure of the instrument's three constructs.

**Table 2.13 Factor Loadings Obtained After Varimax Rotation of CSR Scale Items**

<b>Variable</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>(a priori) Theoretical Dimension</b>
Explain	<b>.75234</b>	.24246	.02900	Technical Quality
Friendly	<b>.85762</b>	.11905	.01809	Interpersonal Quality
Respect	<b>.82460</b>	.12833	.09169	Interpersonal Quality
Time	<b>.73519</b>	.23351	.01046	Interpersonal Quality
Concern	.33258	<b>.68953</b>	-.02465	Efficacy/Outcomes
Information	.16788	<b>.73720</b>	.25005	Technical Quality
Talk	.23020	<b>.72807</b>	.08054	Interpersonal Quality
Ability	.05503	.27766	<b>.57558</b>	Technical Quality
Avoided	.04964	.07402	<b>.77681</b>	Technical Quality
Personal	.04241	-.15700	<b>.72734</b>	Technical Quality
Service	-.04175	.38118	<b>.55723</b>	Efficacy/Outcomes
<b>Final Statistics</b>				
<b>Communality</b>	<b>Factor</b>	<b>Eigenvalue</b>	<b>% of variance</b>	<b>Cumulative %</b>
.41142	1	3.64377	33.1	33.1
.61138	2	1.83893	16.7	49.8
.58668	3	1.04006	9.5	59.3

**Table 2.14 Correlations Within the Three Dimensions of Client Satisfaction**

	<b>Correlation</b>	<b>Significance</b>
<b>A. Theoretical Dimensions</b>		
Interpersonal Quality of Care + Technical Quality of Care	r=0.58	p<0.001
Interpersonal Quality of Care + Efficacy of Care/Outcomes	r=0.52	p<0.001
Technical Quality of Care + Efficacy of Care/Outcomes	r=0.44	p<0.001
<b>B. Extracted Factors</b>		
Factor 1 + Factor 2	r=0.49	p<0.001
Factor 1 + Factor 3	r=0.14	p<0.001
Factor 2 + Factor 3	r=0.31	p<0.001

Internal consistency ratings for the scale items grouped according to the extracted factors are provided in Table 2.15. Factor 1 (most closely resembling the “interpersonal quality of care” dimension) has the highest internal consistency ( $\alpha = 0.83$ ). Factor 3 (most closely resembling the “technical quality of care” dimension) had the lowest internal consistency ( $\alpha = 0.48$ )

### ***Summary***

The Client Satisfaction Rating (CSR) scale was developed from previously tested instruments reported in the literature, and included 11 items measuring three theoretical dimensions of client satisfaction – interpersonal quality of care, technical quality of care, and

**Table 2.15 Internal Consistency of Statistically-Derived Factors and Theoretical Dimensions**

	No. of items	Cronbach's Alpha	n
<b>Full-scale</b>	11	0.78	744
<b>Original (Theoretical) Dimensions</b>			
Technical Quality	5	0.56	755
Interpersonal Quality	4	0.76	757
Efficacy/Outcomes	2	0.27	750
<b>Statistically Derived Factors</b>			
Factor 1	4	0.83	758
Factor 2	3	0.67	748
Factor 3	4	0.48	755

the efficacy or outcome of care received. The instrument gathers visit-specific evaluations of pharmacist-client interactions. The internal consistency and construct validity of the CSR scale were assessed following its administration to 786 pharmacy clients completing the questionnaire after a visit to their pharmacist (May and June, 1995).

Analyses of the data collected suggest that the CSR scale has adequate internal consistency (alpha coefficient = 0.78) for this study. Factor analysis of the 11 scale items (principal components extraction followed by varimax rotation) produced three factors accounting for 60% of the total variance. The extracted factors displayed substantial overlap with the original scale's theoretical dimensions; however, the slight differences in item assignment between the two models produced weaker interdimensional correlations (favouring less construct overlap) and stronger internal consistency values (favouring more

reliable constructs) for the statistically-derived or factor model of client satisfaction. Thus, subsequent analyses (reported in Chapters 5 and 6) utilize the revised model of client satisfaction (see Table 2.16) that incorporates the three dimensions of satisfaction, but differs in where the items are assigned.

**Table 2.16 Revised Client Satisfaction Rating Scale**

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**Interpersonal Quality of Care (4 items)**

How respectful was the pharmacist?  
How well did the pharmacist explain things?  
How friendly was the pharmacist?  
Do you feel that the pharmacist spent enough time with you?

**Technical Quality of Care (4 items)**

Do you feel that the pharmacist asked questions that were too personal?  
Do you think that the pharmacist avoided answering your questions?  
Do you have any doubts about the ability of this pharmacist?  
Do you think this pharmacist could have given you better service

**Efficacy of Care /Outcomes (3 items)**

How concerned do you think the pharmacist was about your health?  
Did the pharmacist make you feel as if you could talk about any type of problem?  
How satisfied are you with the amount of information the pharmacist gave you

---

## **2.5 STUDY LIMITATIONS**

The final area of discussion in this chapter involves that of the study limitations. Every effort was made to minimize the introduction of bias in this project; however, the nature of the

research methods utilized in the study exposes it to a number of well known biases or limitations.

### **2.5.1 Sample Representativeness**

Common criticisms of observational research involve the degree to which the pharmacist sample was biased relative to the population and the extent to which pharmacists embellished their performances due to the audio recording. Other studies have found statistically significant differences between pharmacists who participate in this type of research and those who do not—typically, participators have a greater “counsellor role orientation” and report greater job satisfaction (Pendergast et al., 1995).

To examine the extent to which participating pharmacists differed from the pharmacist population, pharmacy clients completing the Client Satisfaction Rating scale were asked to compare the service they received that day with service they *usually* received from *other* pharmacists. Approximately 78% of the clients stated the care they received that day was “about what they expected” based on their visits with other pharmacists. Only 6% of clients received care that was “a lot more than they expected” based on their previous experiences with community pharmacists. This finding suggests that the vast majority of participating pharmacists were perceived by their clients as providing service that was fairly close to what they received from other pharmacists. In addition, demographic data does not suggest any substantive variation between the study participants and the general population of Lower Mainland pharmacists (see Table 2.4). Thus, the above findings together imply that the pharmacist sample may be closer to representative than originally anticipated.

### **2.5.2 Performance Biases**

The presence of an observer in the pharmacy may alter the behaviour of the client or the pharmacist, which is often referred to as the Hawthorne Effect. Raisch (1993b) found that significantly more counselling events were documented when pharmacy students observed pharmacists than when pharmacists recorded their own counselling activities. De Young (1996) suggests two ways of interpreting this result. First, he suggests that pharmacists perform more counselling in the presence of an observer; however, he also suggests that an equally plausible interpretation is that pharmacists, for whatever reasons (i.e., lack of time, lack of desire, etc.) underreport their usual counselling practices. Laurier and Poston (1992) suggest that the difference may be attributed to a pharmacist's personal definition of "counselling." That is, pharmacists who have broad conceptions of patient counselling may overreport their client communication practices, while pharmacists with restricted views of the activity may underreport.

The term "faking good" is typically applied to an intentional and deliberate approach by a person in responding to personality inventories (Streiner and Norman, 1991). In this study, it is possible that pharmacists may "fake" various affective components of their consultation with pharmacy clients (for example becoming more attentive or friendlier). The study also purports, however, that it would be more difficult for pharmacists to fake technical aspects of their communication (for example, conducting a client assessment).

An alternate research method, the hidden-shopper technique, could have overcome the above biases, but has important limitations of its own. The hidden shopper technique necessitates a smaller sample size (due to the cost of having to pay for the product), limits the

generalizability of the findings to one or two medications/conditions, and makes it difficult to note items that are consistently missed in consultations (Berardo et al., 1989). Furthermore, it is difficult to make comparisons on an individual level with only one or two scenarios per pharmacist. Some researchers recommend that ideally 20 to 40 cases per pharmacist are required to draw conclusions pertaining to humanistic qualities of care (Tamblyn et al., 1994).

Using on-site observers and wireless microphones for audio recording in this study likely had an influence on the communication behaviours of pharmacists. The potential impact is unknown, since some researchers posit that behavioural changes due to audiotaping begin to wane after a few minutes (Weijts, 1993) and that behavioural changes in the health care provider and the patient (as a result of taping) are minimal (Quam, 1990). Most importantly, this study's findings are conceptualized as being a "best case" scenario. That is, pharmacists' full knowledge of the audio-recording process allowed them an opportunity to present themselves in the best possible light.

To assess the extent to which these observational biases may affect the validity of inferences drawn from this study, the Client Satisfaction Rating scale asked clients: "How does the service you received today compare with what you *usually* get from *this* pharmacist?" About 46% of the clients reported that the service they received that day was "about what they expected." Approximately 36% of clients received service that they rated as "a little more than I expected" and 18% received service that was "a lot more than they expected" based on their previous experiences with the study pharmacist. These numbers indicate that about one-third of the pharmacists may have demonstrated some degree of "faking good bias," while another 18% showed a fair amount of variation from their usual



practice. This bias may affect inferences made regarding the current quality of pharmacist-client communication, but not inferences made regarding clients ability to rate pharmacists and/or inferences pertaining to the relationship between predisposing, enabling, and reinforcing factors and communication quality.

### **2.5.3 Rater Expectations and Rater Fatigue**

Some studies indicate that the perception or expectations of the raters can influence their assessment of quality (Carlsmith et al., 1976). That is, raters who believe that pharmacists are good communicators may rate the interactions higher than raters who believe that pharmacists do not provide quality advice. However, the authors note that a minority of studies have also found that raters' assessments are the *opposite* of their expectancies—that is, raters can overcompensate for their perceived overly-positive or overly-negative attitudes. To compensate for the possibility of differing rater expectations, a mixture of academic raters (with theroretically overly-negative expectations) and practitioner raters (with overly-positive expectations) were used to obtain a more balanced rating.

Fatigue, waning of effort, and sensitivity changes in the rating process are also factors that may influence ratings during the course of the study (Hill et al., 1988). To minimize this risk, expert panel raters participating in this study (whose job required three full days), had regularly scheduled breaks and retrained themselves daily with their baseline consultations. Hill and her colleagues (1988) also suggest that the length of an instrument can lead to error; therefore, it was considered to be of paramount importance that all instruments developed for the study could be completed in a reasonable amount of time. The scale results most likely to

suffer from rater fatigue bias were from the Quality of Communication Rating Scale.

However, because high inter-rater and intra-rater reliability estimates were reported, it is suggested that rater fatigue is probably not a strong bias or limitation of this study.

## **2.6 SUMMARY**

Chapter 2 provides an in-depth description of the study's research methods. To address the study's primary research questions, three instruments were developed to measure: 1) the facilitators and barriers to pharmacist-client communication; 2) the quality of pharmacist-client communication; and, 3) the client satisfaction with pharmacist-client communication. Details surrounding the development of these instruments, a description of the study's participants, and preliminary data establishing the psychometric properties of the scales were presented.

The original Pharmacists' Questionnaire was reduced by 10 items based on its inter-item and item-item correlations. Guided by an adapted version of the PRECEDE model, the remaining 40 items measure 11 variables that are believed to predispose, enable, or reinforce quality communication between pharmacists and clients. Internal consistency of the three constructs (estimated with Cronbach's alpha) ranged from 0.73 for the reinforcing factors category, to 0.81 for the enabling factors construct, to 0.87 for the predisposing factors construct. Factor analysis of the questionnaire item revealed 11 factors accounting for 70% of the total variance. The resulting factors appear to be an adequate representation of the constructs being studied.

The Quality of Communication Rating Scale is a general title referring to two scales that estimate the quality of health advice in prescription consultations and non-prescription (general health advice) consultations. The scales allow pharmacist-client consultations to be rated on eight criteria with a seven-point scale ranging from poor to very good; the ninth scale item, the raters' general or overall assessment of the consultation, serves as an informal weighting system that can minimize or maximize the relevance of particular scale items. Internal consistency (Cronbach's  $\alpha = 0.85$ ) and inter-rater reliability indices ( $\bar{\kappa} = 96\%$  agreement) were excellent for the purposes of this study.

Finally, the Client Satisfaction Rating (CSR) scale collects visit-specific ratings of pharmacist-client communication. The literature suggests that client satisfaction comprises of three dimensions: technical quality of care, interpersonal quality of care, and overall efficacy or outcome of care. Eleven items were retrieved from the literature to measure these three dimensions. Factor analysis of the items resulted in three factors accounting for 59% of the variance. The assignment of the items within the three dimensions was modified from the original version of the CSR scale to reflect the factor-derived dimensions that displayed stronger ratings of internal consistency (increased reliability) and milder interdimensional correlations (less construct overlap).

Chapter 2 concludes by acknowledging the study biases and presents data that assess the degree to which these biases may limit inferences made in this study. Biases involved with observational research methods were discussed and it was proposed that some pharmacists may have enhanced their performance during data collection, but that this type of bias would not prevent the study from answering its two primary research questions.

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## Appendix 2.1 Dialogue for Obtaining Pharmacy Client Consent

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### *Client to be informed of the following information:*

We are participating in a study being undertaken by the Faculty of Pharmacy at the University of British Columbia. In this study, the types of counselling that occur in pharmacies are being examined and we would like your opinion.

The study requires that your conversation with the pharmacist be recorded. After speaking with the pharmacist, we would like you to complete a short questionnaire that will ask you to rate the service you received today. It takes no more than 5 minutes to complete. In return for your participation, we would like to offer you a coupon worth one dollar that can be redeemed before you leave the pharmacy.

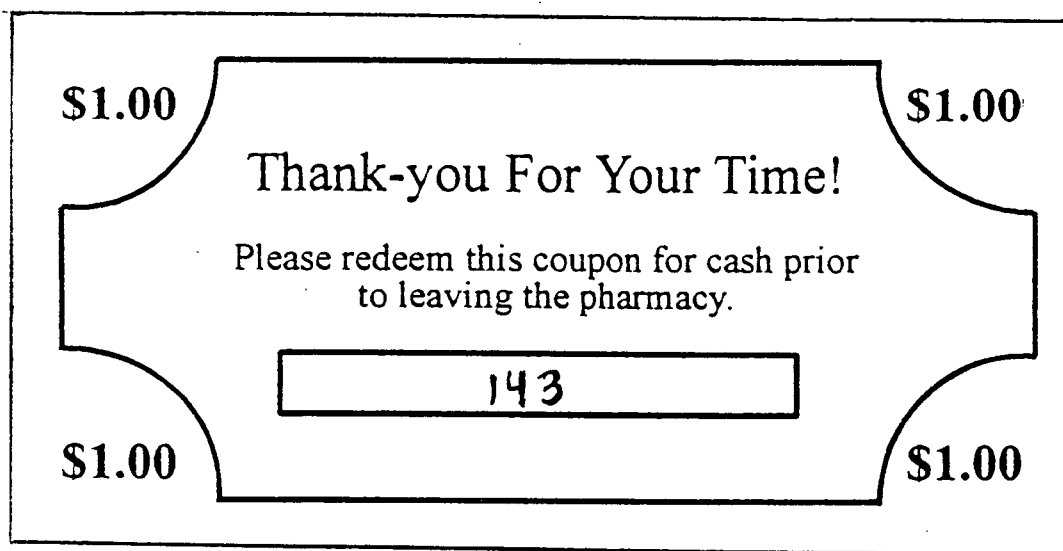
Although your conversation with the pharmacist will be recorded, the study is mostly concerned with what the pharmacist is saying to you. You will not be identified in the tapes. In addition, everything that is said or reported in your questionnaire will remain anonymous and confidential. The pharmacist and the pharmacy staff will not be given this information.

Your participation is voluntary, and no one will be offended if you choose not to participate. Your assistance, however, will help us to improve pharmacy services available in BC.



### Appendix 2.3 Cash Incentive Coupon For Tracking Clients

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## Appendix 2.4 The Pharmacist Questionnaire

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### THE COMMUNITY PHARMACY AS A SITE FOR HEALTH PROMOTION

Thank-you for taking the time to complete this questionnaire. Your input will help to strengthen our profession. Below are a number of statements about patient counselling. Please circle the number that best estimates your response to each statement.

		Strongly <u>Disagree</u>	<u>Disagree</u>	Not <u>Sure</u>	<u>Agree</u>	Strongly <u>Agree</u>
1.	Counselling increases job satisfaction.	1	2	3	4	5
2.	I do not like talking to customers.	1	2	3	4	5
3.	Counselling may not be necessary.	1	2	3	4	5
4.	People do not respect the advice of the pharmacist.	1	2	3	4	5
5.	I am worried about contradicting doctors.	1	2	3	4	5
6.	Counselling increases professional responsibility.	1	2	3	4	5
7.	I am a respected member of the community and people expect me to give advice.	1	2	3	4	5
8.	Counseling is not my responsibility and should be performed by the doctor.	1	2	3	4	5
9.	Counselling enables me to become an active member of the healthcare team.	1	2	3	4	5
10.	Counselling increases professional responsibility beyond which I am prepared to accept.	1	2	3	4	5
11.	With patient counseling, medications are more likely to be taken as they should be taken.	1	2	3	4	5

		<u>Strongly</u> <u>Disagree</u>		<u>Not</u> <u>Disagree</u>	<u>Sure</u>	<u>Strongly</u> <u>Agree</u>	<u>Agree</u>
12.	Counselling reduces drug wastage.	1	2	3	4	5	
13.	Counselling does not lead to significant improvements in health care.	1	2	3	4	5	
14.	Counselling improves patient compliance.	1	2	3	4	5	
15.	Counselling may prevent the patient from experiencing an adverse drug effect.	1	2	3	4	5	
16.	Customers do not perceive the benefits of counseling.	1	2	3	4	5	
17.	Counselling brings more people into the pharmacy.	1	2	3	4	5	
18.	Counselling increases sales.	1	2	3	4	5	
19.	Customers appreciate the extra care and interest I show in them.	1	2	3	4	5	
20.	Counselling improves patient-pharmacist relationships.	1	2	3	4	5	
21.	Counselling improves pharmacist-physician relationships.	1	2	3	4	5	
22.	With regular customers I know enough about them to be able to counsel effectively.	1	2	3	4	5	
23.	I lack confidence in my knowledge.	1	2	3	4	5	
24.	I do not know how to approach people.	1	2	3	4	5	
25.	I do not know enough about drugs and their effects.	1	2	3	4	5	
26.	I am too busy to counsel.	1	2	3	4	5	
27.	There is a lack of feedback from people.	1	2	3	4	5	

In this next section, we would like to ask you some questions about your workplace environment. Please circle the number that best estimates your response. If you are employed at more than one pharmacy, use the pharmacy you were working in at the time of our visit as the reference point for your responses.

28. Do you have a private patient counselling area available for your use?

☐ Yes

☐ No -----> proceed to question 30

29. How often do you use the private patient counselling area?

Never	Rarely	Some of the Counseling Sessions	Most of the Counseling Sessions	Every Counseling Session
1	2	3	4	5

30. Do you think that a pharmacy should have a private patient counselling area?

☐ Yes

☐ Uncertain

☐ No

If "No", please state the reason:

31. How important do you think medication counselling is in promoting the health of the average person?

Very Unimportant	Unimportant	Neutral	Important	Very Important
1	2	3	4	5

32. How important do you think advising clients on general health matters is in promoting the health of the average person?

Very Unimportant	Unimportant	Neutral	Important	Very Important
1	2	3	4	5

33. How certain are you that you can provide your patients with appropriate drug information?

Very Uncertain	Uncertain	Neutral	Certain	Very Certain
1	2	3	4	5

34. How certain are you that you can provide to your patients appropriate health information and useful skills for improving their quality of life?

Very Uncertain	Uncertain	Neutral	Certain	Very Certain
1	2	3	4	5

35. Given that you can convey appropriate information to your patients, how certain are you that the average patient will, in fact, follow through with your advice?

Very Uncertain	Uncertain	Neutral	Certain	Very Certain
1	2	3	4	5

36. Does the pharmacy library at your workplace meet your patient counselling needs?

Never	Rarely	Some of the Time	Most of the Time	Always
1	2	3	4	5

37. Does your pharmacy subscribe to any professional journals?

\_\_\_\_ Don't know

\_\_\_\_ No

\_\_\_\_ Yes, please list \_\_\_\_\_

38. How many pharmacists (full time equivalents) are employed at this pharmacy? \_\_\_\_\_

39. Do you feel that the number of pharmacists currently employed at your workplace is:

\_\_\_\_ Too Few \_\_\_\_ About Right \_\_\_\_ Too Many

40. How many pharmacy technicians/assistants (full time equivalents) are employed at this pharmacy? \_\_\_\_\_

41. Do you feel that the number of pharmacy technicians currently employed at your workplace is: \_\_\_\_ Too Few \_\_\_\_ About Right \_\_\_\_ Too many

In this next section, we would like to ask you a few questions about your workplace relationships. Please circle the number that best estimates your response to each question. If you are employed at more than one pharmacy, use the pharmacy you were working in at the time of our visit as the reference point for your responses.

42. To what extent do you believe your immediate supervisor expects you to apply your full scope of pharmacy training?

Never	Rarely	Some of the Time	Most of the Time	Always
1	2	3	4	5

\_\_\_\_\_ Not applicable (i.e., you are the pharmacy owner)

43. How comfortable would you feel in making suggestions to your immediate supervisor regarding pharmacy services that your store offers?

Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
1	2	3	4	5

44. How comfortable would you feel in making suggestions to head office management regarding pharmacy services that your store offers?

Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable
1	2	3	4	5

45. How would you describe the support of your supervisor for providing patient counseling?

Very Unsupportive	Unsupportive	Neutral	Supportive	Very Supportive
1	2	3	4	5

46. How would you describe the support of your co-workers for providing patient counseling?

Very Unsupportive	Unsupportive	Neutral	Supportive	Very Supportive
1	2	3	4	5

47. How would you describe the workplace relationship amongst pharmacists employed at this store?

Very Unfriendly	Unfriendly	Neutral	Friendly	Very Friendly
1	2	3	4	5

48. How often does your immediate supervisor comment or reward you when you have previously attempted to use your pharmacy training.

Never	Rarely	Some of the Time	Most of the Time	Always
1	2	3	4	5

49. What type, if any, of incentives for providing good service are available for you within your store? \_\_\_\_\_

50. What type of incentives or rewards are used in your store for pharmacists demonstrating good performance? \_\_\_\_\_

51. To your knowledge, are there, or have there been, consequences for poor patient counselling performance at your current workplace?

\_\_\_\_ Yes \_\_\_\_ No \_\_\_\_ Uncertain

If yes, please explain. \_\_\_\_\_  
\_\_\_\_\_

52. What type, if any, of incentives or rewards are made available at your current workplace for pharmacists that participate in continuing education activities? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

In this final section we would like to ask you a few general questions about yourself to help us to better describe our sample of pharmacists.

53. Is this the pharmacy in which you work the majority of your hours?: \_\_\_\_ Yes \_\_\_\_ No

54. On average, about how many times a day do you advise customers on non-prescription medicines, health products or provide general health advice? \_\_\_\_\_

55. To what extent do you feel your involvement in nonprescription product counselling varies with the time of day and week according to how busy the dispensary is?

No Variation	A Little Variation	Quite a Bit	Extreme Variation
1	2	3	4

56. Are you: \_\_\_\_ Male \_\_\_\_ Female

57. Please check off the category which best describes your marital status:

\_\_\_\_ Married or Equivalent \_\_\_\_ Single \_\_\_\_ Divorced or Widowed

58. How old are you?: \_\_\_\_\_



59. On average, how many hours per week are you employed: \_\_\_\_\_

60. How would you describe your employment position?

\_\_\_\_\_ owner \_\_\_\_\_ owner/manager \_\_\_\_\_ manager \_\_\_\_\_ staff pharmacist

62. In what year did you graduate from pharmacy school?: \_\_\_\_\_

Space is provided below for any comments you would like to make regarding the topics covered in the questionnaire, the questionnaire itself, or any other general comments you wish to make. We greatly appreciate you taking the time to complete this questionnaire. Please return it in the enclosed envelope. Thank-you again for your important contribution to this study.

## Appendix 2.5 Revised Constructs in the Pharmacists' Questionnaire

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### A. Predisposing Factor Items (21 items)

ATT1	Counselling increases job satisfaction
ATT2	I don't like talking to customers
ATT4	People do not respect the advice of the pharmacist
ATT5	I worry about contradicting doctors
ATT6	Counseling increases professional responsibility
ATT8	Customers do not perceive the benefits of counselling
JOBEXP1	I am a respected community member and advice is expected from me
JOBEXP2	Counselling is not my responsibility & should be performed by the doctor
JOBEXP3	Counselling enables me to become part of the health care team
OUTCOMC1	With counselling, meds are more likely to be taken properly
OUTCOMC2	Counselling reduces drug wastage
OUTCOMC3	Counselling doesn't lead to significant improvements in health care
OUTCOMC4	Counselling improves patient compliance
OUTCOMC5	Counselling may prevent adverse drug effects
OUTCOMR1	Counselling brings more people into the pharmacy
OUTCOMR2	Counselling increases sales
OUTCOMR3	Customers appreciate the extra care
OUTCOMR4	Counselling improves patient-pharmacist relationships
OUTCOMR5	Counselling improves doctor-pharmacist relationships
ADHEREX1	How important is medication counselling in promoting the health of the average person?
ADHEREX2	Importance of health advice in promoting health of average person

#### Predisposing Factor Items That Were Removed:

ADHEREX3	<i>How certain are you that the average person follows through with your advice?</i>
ATT3	<i>Counselling may not be necessary</i>
ATT7	<i>I am not prepared to accept the professional responsibility</i>
JOBEXP4	<i>My supervisor expects that my full scope of training is applied</i>

### B. Enabling Factor Items (12 items)

TIME4	Number of full-time pharmacy technicians employed
TIME 1	I am too busy to counsel
SPACE2	How often do you use your private area for counselling
SPACE3	Do you think that a pharmacy should have a private counselling area?
RESOURC2	Does your pharmacy subscribe to any professional journals?
RESOURC3	How many pharmacy journals does your pharmacy subscribe to

SELFEFF1	With regular customers, I know enough about them to counsel effectively.
SELFEFF2	I lack confidence in my knowledge.
SELFEFF3	I do not know how to approach people.
SELFEFF4	I do not know enough about drugs and their effects.
SELFEFF5	How certain are you that you can provide patients with appropriate drug information.
SELFEFF6	How certain are you that you can provide patients with appropriate health information.

**Enabling Factor Items That Were Removed:**

RESOURC1	Does your workplace pharmacy library meet your counseling needs
TIME2	Number of full-time pharmacists employed
TIME3	Do you feel that the number of pharmacy technicians employed at your workplace is....?

**C. Reinforcing Factor Items (7 items)**

ORGNSTR1	Approachability of supervisor
ORGNSTR2	Approachability of head office
REWARDS1	How often does your supervisor comment or reward you when you have previously attempted to use your pharmacy training
REWARDS2	What type, if any, of incentives for providing good service are available for you within your store?
REWARDS3	What type of incentives or rewards are used in your store for pharmacists demonstrating good performance?
SUPPORT1	Support of supervisor for patient counselling
SUPPORT2	Support of co-workers for patient counselling

**Reinforcing Factor Items That Were Removed:**

REWARD1	There is lack of feedback from people
REWARDS5	What types, if any, of incentives or rewards are available at your workplace for pharmacists participating in continuing education activities
SUPPORT3	How would you describe your workplace relationship amongst pharmacists

## Appendix 2.6 Description of Factors Arising from the Pharmacists' Questionnaire

	<u>Item Name</u>	<u>Predominant Construct</u>
<b>FACTOR 1</b>		<b>PREDISPOSING</b>
The advice is not respected	ATT2	
People do not respect the advice of pharmacists	ATT4	
Worry about contradicting doctors	ATT5	
Benefits not perceived by clients	ATT8	
Not my responsibility –should be performed by MD	JOBEXP2	
Doesn't lead to improvements in health care	OUTCOM3	
Lack confidence in my knowledge	SELFEFF2	
Don't know how to approach people	SELFEFF3	
Don't know enough about the drugs	SELF3FF4	
Too busy to counsel	TIME1	
<b>FACTOR 2</b>		<b>PREDISPOSING</b>
Meds more likely to be taken proper	OUTCOM1	
Reduces drug wastage	OUTCOM2	
Improves compliance	OUTCOM4	
May prevent adverse effects	OUTCOM5	
The extra care is appreciated	OUTCOM8	
Improves pt-pharmacist relationship	OUTCOM9	
I know enough about regular customers	SELFEFF1	
Co-worker support	SUPPORT2	
<b>FACTOR 3</b>		<b>ENABLING</b>
Comfort in approaching supervisor	ORGSTR1	
Comfort in approaching head office	ORGSTR2	
Lack of feedback	REWARD1	
Supervisor support	SUPPORT1	
<b>FACTOR 4</b>		<b>PREDISPOSING OR REINFORCING</b>
Improves dr-pharm relationship	OUTCOM10	
Brings people into the pharmacy	OUTCOM6	
Increases sales	OUTCOM7	
<b>FACTOR 5</b>		<b>PREDISPOSING</b>
Increases job satisfaction	ATT1	
Increases professional responsibility	ATT6	
I am a respected member of the community	JOBEXP1	
Enables me to be a part of the HC team	JOBEXP3	

	<u>Item Name</u>	<u>Predominant Construct</u>
<b>FACTOR 6</b> Certainty in providing approp. drug info Certainty in providing approp. health info	SELFEFF5 SELFEFF6	<b>ENABLING</b>
<b>FACTOR 7</b> Med counseling improves health Health advice can improve health	ADHEREX1 ADHEREX2	<b>PREDISPOSING</b>
<b>FACTOR 8</b> Frequency of use of private consultation area Attitude toward private areas	SPACE2 SPACE3	<b>ENABLING</b>
<b>FACTOR 9</b> Supervisor comments on good performance # of incentives available for good performance	REWARD2 REWARD3	<b>REINFORCING</b>
<b>FACTOR 10</b> Lack of feedback #pharmacy journals subscribed to	REWARD1 RESOURC2	<b>REINFORCING</b>
<b>FACTOR 11</b> #of FTE technicians	TIME4	<b>ENABLING</b>

## **CHAPTER 3**

### **FACTORS INFLUENCING PHARMACIST-CLIENT COMMUNICATION**

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This chapter presents descriptive findings from the Pharmacists' Questionnaire. It will review literature describing some of the variables associated with pharmacist-client communication. An outline of the study methods involved with the administration of this questionnaire will then be followed by a presentation of the descriptive data arising from its analysis. A short discussion examining the relevance of the study's findings concludes the chapter.

#### **3.1 INTRODUCTION**

The long-term goal of this research is to improve the quality, frequency, and content of communication between community pharmacists and their clients. Many of the reports in the literature suggested that community pharmacists failed to meet the communication requirements of an increasingly demanding profession (Morrow and Hargie, 1992; Smith, 1992a; Smith, 1992b; Taylor and Suveges, 1992). An important first step toward improving the quality, content and frequency of pharmacist-client communication is the exploration and description of factors that facilitate or hinder pharmacist-client communication. The objective of this study, accordingly, is to gather such data that will allow future interventions to be tailored to address the local concerns, issues, and barriers facing pharmacists practicing in British Columbia.

### 3.2 LITERATURE REVIEW

To guide the study's design and data analyses, a modified version of the PRECEDE framework was used; the framework identifies three conceptual, though not mutually exclusive, categories of factors that affect the behaviour of individuals (Green, 1974; Green et al., 1980; Green and Kreuter, 1991; Green and Joab, 1997):

1. **Predisposing Factors:** The antecedents to behaviour that provide the rationale or motivation for the behaviour.
2. **Enabling Factors:** The antecedents to behaviour that allow a motivation to be realized.
3. **Reinforcing Factors:** The factors subsequent to behaviour that provide the reward or incentive for the behaviour to be repeated and maintained.

The literature review in this chapter discusses the predisposing, enabling, and reinforcing factors associated with quality pharmacist-client communication. A final section entitled "other variables" examines some of the variables that are more difficult to assign to one of these three categories but would be considered in the planning of future interventions. It is important to note that while quality communication involves both the pharmacist and client, this study restricts itself to only one side of the process by examining the facilitators and barriers related to community pharmacists and their workplace.

### 3.2.1 Predisposing Factors

Predisposing factors include most cognitive, attitudinal, and perceptual supports or barriers encountered by community pharmacists attempting to improve communication with their clients (Green and Kreuter, 1991; Manley, 1992). One exception to cognitive variables would be factual knowledge since it enables rather than predisposes action. An individual's **attitude** or set of **beliefs** directed toward a situation are considered to be the factors that predispose him or her to behave a certain way. The literature suggests that five primary factors predispose pharmacists to engage in quality communication with their clients, namely their: 1) attitude toward communicating with clients; 2) expectations regarding client adherence to health advice; 3) expectations regarding client outcomes, 4) job or role expectations; and, 5) perceived self-efficacy to communicate relevant and accurate information to clients. These variables are discussed below.

The attitude or perception of individuals is an important aspect of their behaviour; for example, if community pharmacists do not believe that communicating with clients is part of their responsibility, then it is unlikely that they will initiate communication (Knapp et al., 1969; Kirking, 1984; Mason and Svarstad, 1984). Many studies have examined physicians' (Weschler et al., 1983; Lewis et al., 1991; Wilson, 1992), nurses' (Kuiz et al., 1995), and dieticians' (Mullen and Holcomb, 1990) role in disease prevention counselling (to name but a few), and have found that even though health professionals believe that lifestyle factors are important in promoting health, they are not as prepared to counsel patients about them and lack confidence in their ability to promote change effectively in their patients.



Similarly, although pharmacists are receptive to the idea of increased participation in advising clients on medication or general health concerns (Kirking, 1982, Mason and Svarstad, 1984; Fincham and Smith, 1988; Smith 1992a), many believe that their efforts are met with limited or no success because clients are reluctant to modify their medication attitudes and habits (Sidel et al., 1990; Desselle, 1997).

Self-report studies with community pharmacists suggest that they are not only willing to communicate with clients (Smith and Gibson, 1975), but that pharmacist-client communication is a preferred activity. Linn and Davis (1971) found that advising and discussing health problems with patrons was the second most time-consuming activity for community pharmacists, and that next to dispensing prescription orders, pharmacists cited advising patients as the second most preferred activity. Similarly, Ortiz (1992) found that almost all community pharmacists shared a very strong orientation or attitude towards advising clients; less than 1% of the 1,361 community pharmacists surveyed could have been described as having a "moderately negative" attitude towards patient counselling, and none were considered to have a "strongly negative" attitude.

Pharmacists also report that they would enjoy expanding their advisory role in health care; about 80% of 200 randomly selected chain and independent pharmacists indicated in a telephone interview that they would like to have a greater role in advising clients on medication and other health-related matters (Meade, 1992). Despite a plethora of articles documenting pharmacists' interest in communicating with clients, however, many studies examining community pharmacists' behaviour have noted similar findings: community pharmacists rarely initiate client consultations without being directly solicited for advice

(Smith and Salkind, 1990; Kerr-Eng and Stratton, 1993). For example, in 1992 Taylor and Suveges studied the rate of interaction between pharmacists and consumers during the selection of non-prescription cough, cold, and allergy products. Trained observers recorded 413 interactions at the four study sites during a five-week (147 hour) observation period. Of the 413 consumers, 86% (n=357) selected a product without the advice of pharmacy staff. Those who did receive advice (n=56 or 14%) were observed: Of the persons who received pharmacist advice, 96% (n=54) had requested it; 38 of these 54 consumers asked for advice after they had looked at the products for a period of time, while 16 asked for advice before looking at any products. There were only two cases in which a pharmacist *offered* advice to a client perusing the various products.

The reluctance of pharmacists to initiate dialogue with clients may be explained partly by a pharmacist-held belief that clients are not interested in receiving their advice. Pharmacists participating in studies by both Schommer and Wiederholt (1994a) and Raisch (1993b) indicated that disinterested patients were a major barrier to pharmacist-client communication. If pharmacists believe that clients are not interested in receiving advice from them, they will likely curtail involvement in this activity (Knapp et al., 1969; Maddux, Stanley and Manning, 1987). This self-fulfilling belief, however, results in the following situation: The pharmacist, perceiving the client to be disinterested, fails to communicate adequately with the client. The client, who has received little or no interaction from the pharmacist, fails to ask any questions, assuming that their question was "probably not important or the pharmacist would have told me," or that the pharmacist "isn't really interested," or is "too busy." Together, the pharmacist and the client have laid the foundation for future pharmacy visits, and both will

continue to adapt their expectations of a typical pharmacy visit toward the maintenance of this schema (Ivey, Ivey, Simek-Morgan, 1993).

A pharmacist's clinical knowledge and skills are extremely important factors that, if deficient, will act as barriers to improving pharmacist-client communication (Orlandi, 1987; Upjohn, 1990; Coultas, 1991). Although clinical knowledge and skills are requisite for quality pharmacist-client communication, they do not ensure that it will occur (Watkins and Norwood, 1978). For example, in 1977 Fielding examined the relationship between a continuing education program and its influence on British Columbia (BC) community pharmacists' clinical practice behaviour. A non-equivalent control group design was used to assess the quality of primary care advice offered by BC community pharmacists after completing a continuing education program. Thirty-four experimental subjects and a randomly selected control group (n=40) were observed after participation in the continuing education program. Pharmacists were assessed using trained shoppers who came into the store with a "cold" or a "pain" problem, and were scored on four characteristics: 1) data gathering; 2) inappropriate recommendations; 3) appropriate recommendations; and 4) drug-use counselling. Study findings indicated that, although the continuing education made a significant difference in the factual knowledge obtained or learned by pharmacists, it failed to make any difference in the workplace counselling behaviours of test pharmacists.

In this study, it is assumed that the licensing requirements of the provincial (BC College of Pharmacists) and national (Pharmacy Examining Board of Canada) regulatory bodies ensure that pharmacists have adequate factual knowledge to practice pharmacy. One important factor that can help explain the deficit between factual knowledge and workplace

behaviour is known as self-efficacy theory, which is defined to be a judgement of one's own capability to perform in given situations. It partly determines one's behaviour, thought patterns, and emotional reactions to situations, and some researchers believe it to be the most important prerequisite for behaviour change (Bandura, 1982). Self-efficacy theory suggests that a pharmacist's sense of personal efficacy mediates the relationship between what the pharmacist knows how to do and what he or she actually does (Larson et al., 1992). Previous research has found that pharmacists report feeling confident in their abilities to advise clients (Ortiz et al., 1992; Paluck, 1996), but that they lack sufficient knowledge of a client's diagnosis to participate effectively in patient counselling (Upjohn, 1990). Though most pharmacists in British Columbia obtained the mandated information for computerized patient profiles, very few gathered any additional patient information that would allow them to expand their role as health advisors and, thus, enhance their ability to communicate effectively with clients (Paluck et al., 1994). In August, 1995, however, (just shortly after the data collection period for this study) a computerized system (PharmaNet) linking the pharmacy records of BC residents was implemented, potentially lessening the barrier of insufficient information for pharmacists.

### **3.2.2 Enabling Factors**

Predisposing factors can account for the motivation and confidence of pharmacists, but even with motivation, inadequate skills or resources may impede pharmacists' ability to engage effectively in health-oriented dialogue with clients (Green and Kreuter, 1991). An **enabling factor** is defined as any characteristic of the environment that will facilitate the

provision of pharmacist-client communication (Green and Kreuter, 1991). The absence, or opposite of an enabling factor, therefore, becomes a barrier to improving pharmacist-client communication. Some research has suggested that pharmacists' perceived barriers to expanding their role as health advisors may not be correlated with their current participation in counselling activities. That is, pharmacists who believe that there are *many* barriers to furthering their involvement in health promotion report participating in such activities at the same frequency as pharmacists who believe that there are *few* barriers to furthering their involvement (Paluck et al., 1996). Results from the Upjohn Survey of 1990 detected a *positive* relationship between pharmacists' perceived barriers and their participation in pharmacist-client communication. That is, pharmacists who reported being most actively engaged in advising clients on medication use also cited the most barriers to furthering their involvement in this area. A possible explanation for this finding is that the pharmacist's discovery of barriers may not become apparent until the pharmacist is actively considering or trying to participate. That is, the enabling factors may not become salient until the predisposing factors have been acquired.

Although the relationship between perceived barriers by health professionals and their actual behaviour may appear seemingly inconclusive, most literature supports the notion that barriers that are not addressed and accounted for prior to the planning of an intervention will increase the likelihood of failure to meet original objectives (Chase, 1979). Therefore, identifying a set of barriers that can be anticipated when attempting to improve the quality, frequency, or content of pharmacist-client communication will aid the process.

The literature discusses six enabling factors related to the provision of quality communication in community pharmacy practice: time to communicate, financial reimbursement, understanding of communication goals, adequate staff, adequate space, and appropriate educational materials (Bush, 1983; Weschler et al., 1983; Sobal, 1985; Green and Kreuter, 1991; Schwartz et al., 1991; Morrow and Hargie, 1992; Raisch, 1993b). Alternately, legal barriers restricting the scope of pharmacy practice (Smith and Gibson, 1975) and pharmacists' personal fear of legal liability or litigation (Upjohn, 1992) may act as barriers to quality pharmacist-client communication. For example, cholesterol screening or blood glucose may render the pharmacist susceptible to charges of practicing medicine without a license in some areas. Although pharmacists' involvement in **pharmaceutical care** may potentially expose them to greater liability, the legal changes that have shaped pharmacy practice over the last 40 years (e.g., the right to inform clients of their medication composition, use of pharmacy technicians, etc.), have served as enabling factors for quality pharmacist-client communication (Brushwood, 1995; Fink, 1995).

Within the field of community pharmacy practice, it has been a long-held belief that private consultation areas support the provision of quality communication between pharmacists and clients. However, relative to the financial costs associated with building a private area within pharmacies, relatively few studies have critically examined the relationship between private consultation areas and the quality of communication. Laurier and Poston (1992) found that, over a three hour period, pharmacists with a private consultation area spent an additional five minutes interacting with clients than pharmacists without a private area. Overall, however, the research indicated that the availability of a private counselling area

alone, does not markedly change the frequency or proportion of consultations that occurred (Smith and Salkind, 1988; Laurier and Poston, 1992; Wilson et al., 1992; Smith, 1992a). For example, 43% of American independent community pharmacists indicated that they had a private consultation area (Anonymous, 1988), yet only 22% of U.S. clients reportedly receive private or semi-private consultations (Ascione et al., 1985). In Canada, 28% of pharmacists reported having access to a private area (Laurier and Poston, 1992), but observational research has suggested that only 5% of encounters are conducted in these areas (Willison and Muzzin, 1995). One possible reason for the low utilization rate of private consultation areas may be the perceived lack of time felt by many community pharmacists.

Pharmacists have reported that their communication practices are restricted by an insufficient amount of time. The exact nature of the relationship between available time and pharmacist-client communication, however, is unclear. Schommer and Wiederholt (1994b) reported that the most important barrier to communication was a lack of time. Similarly, Raisch (1993a) found that workload was negatively correlated with the provision of counselling (the higher the workload, the lower the frequency and duration of dialogue). Laurier and Poston (1992) concluded, however, that workload was significantly related (positively) to patient counselling and that prescription workload had a non-linear effect on time spent counselling clients. Pharmacists who filled an intermediate number of prescriptions per hour (7 to 11.4) reported that they spent more time counselling clients than pharmacists who either filled fewer than 7 or more than 11.5 prescriptions per hour. Findings reported by Willison and Muzzin (1995) support those of Laurier and Poston's analysis in that they reported that workload (measured in terms of average prescription volume per pharmacist)

was a predictor of counselling quality. The pharmacists employed by moderate volume pharmacies performed consistently better than those employed by high volume pharmacies, but pharmacists employed at low-volume pharmacies had mixed results. Thus, it appears that pharmacists' available time may be strongly linked to workload, and that overly light or heavy workloads can become barriers to pharmacist-client communication.

### **3.2.3 Reinforcing Factors**

Reinforcing factors provide reward or incentive for a behaviour and contribute to its repetition (Green and Kreuter, 1991). Positive reinforcement increases the likelihood that a behaviour will be repeated (Perry et al., 1990). Negative reinforcement is not the direct opposite of positive reinforcement since it does not always decrease the likelihood a behaviour will be performed. That is, negative reinforcement only reduces the likelihood a behaviour will be performed in situations where the person expects to receive negative reinforcement (or punishment) (Perry et al., 1990). Reinforcing factors can be described as being intrinsic (such as a personal sense of a job well-done) or extrinsic (such as financial benefits). Internal reinforcing factors account for why some people behave in a manner that is not reinforced externally or may even be negatively reinforced externally (Perry et al., 1990).

In this study, some of the factors believed to reinforce the occurrence of quality pharmacist-client communication include: the pharmacy's policies on pharmacist-client communication and customer service; the availability of peer and managerial support for participating in pharmacist-client communication; and, the rewards offered by pharmacy management or peers for establishing quality pharmacist-client communication and



maintaining competency. It should be noted that a pharmacy's policy on pharmacist-client communication may be enabling or predisposing as well; it is only a reinforcing factor if it offers reward for the behaviour.

Very little information is available in the pharmacy literature on the impact of reinforcing factors on pharmacist-client communication. Reduced third-party reimbursements for pharmacists' dispensing fees (Stratton and Stewart, 1992; Upjohn, 1992), increased competition from large discount pharmacies, and the presence of mail-order pharmacies (Anon, 1992) have resulted in pharmacies lowering their dispensing fees and the marketing of pharmacies as a loss leader within larger "mega-stores." Although it is common for pharmacists to claim that these current financial pressures have resulted in a profession that rewards quantity and not quality (Munroe and Rosenthal, 1994), the published literature does not provide evidence suggesting that pharmacists provided superior client advice prior to the emergence of the current fiscal restraints.

In addition to the economic forces shaping community pharmacy practice, a number of factors within each pharmacy serve to reinforce the provision of quality communication—two of which are peer and managerial support. If pharmacists do not feel support from their co-workers or store management to communicate with their clients, then they will likely be hesitant to expand their role in this area. In support of this hypothesis, Raisch (1993a) found that peer pressure *not* to counsel was negatively correlated with patient counselling.

In general, legal changes in the pharmacists' scope of responsibility have paved the way for the professional development of pharmacy practice (Brushwood, 1995; Fink, 1995) and thus may be viewed as an enabling force. Legal factors, however, can also adversely

influence pharmacist-client communication by creating a form of negative reinforcement, with fear being the motivator (Green and Kreuter, 1991). In 1992, the pharmacists' regulatory body, The College of Pharmacists of British Columbia, passed By-Law 19(17)– the Mandatory Patient Dialogue By-Law. This self-imposed by-law requires pharmacists to hand the prescription directly to the client or agent and, at a minimum, verify the recipient of the prescription, and inform the client of the drug's name, purpose, administration schedule, and storage requirements. Although the by-law was controversial, it was not the first of its kind. A number of American states have legally imposed mandatory dialogue laws on pharmacists. American researchers, however, are not yet convinced about whether mandatory consultation laws have any effect on improving pharmacist-patient communication and ultimately on client outcomes (Campbell et al., 1989; Nichol and Michael, 1992; Scott and Wessels, 1997).

### **3.2.4 Other Influences on Pharmacist-Patient Communication**

The literature suggests that a number of descriptive and demographic variables, not easily assigned to one of the above categories, may also influence the quality of pharmacist-client communication:

#### **a. Client Characteristics**

- ◆ Client Age: Smith (1992b), Fisher et al., (1991) and Wiederholt et al., (1992) noted a trend whereby younger pharmacy clients in their 20s to 40s received a somewhat better consultation from the pharmacist (in terms of frequency and/or duration). Older pharmacy

clients, however, are more likely to have a participatory relationship with their pharmacist (Sleath, 1996).

- ◆ Client Social Class: Raisch (1993b) reported that U.S. pharmacists counselled on a lower percentage of prescriptions for capitation patients compared to prescriptions for self-pay and Medicaid patients. Paluck et al. (1996) found that pharmacists in British Columbia reported advising clients from lower socioeconomic backgrounds more often than clients from higher socioeconomic backgrounds. The majority of research, however, indicates that social class is unrelated to pharmacist-client communication (Wilson et al., 1992; Wiederholt, Clarridge, and Svarstad, 1992).
- ◆ Client Gender: A difference between male and female clients with regard to pharmacists providing non-prescription drug counselling has not been detected (Fisher, Corrigan, and Henman, 1991).
- ◆ Client Need For Cognition: Schommer, Sullivan and Haugtvedt (1995) reported that an individual trait variable, the client's need for cognition, exerted the strongest effect on a client's receptivity to communicating with their pharmacist. They concluded that while a client's past experiences with a pharmacist may increase their attitude or orientation toward communicating with their pharmacist, a low need for cognition can diminish the influence of past experiences. Age was negatively correlated with a client's need for cognition, possibly explaining previous findings that have reported that older clients receive less and/or lower quality of advice from pharmacists.

## **b. Pharmacist Characteristics**

- ◆ Pharmacist Age: Smith and Salkind (1990) reported no significant effect between a pharmacist's age and his or her communication skills, while Barnett, Nykamp, and Hopkins (1992), Wiederholt et al. (1992), and Laurier et al. 1989), found a pharmacist's age to be related to communication.
- ◆ Pharmacist Gender: While Laurier and Poston (1992) found that female pharmacists counselled on a higher proportion of prescriptions than male pharmacists, Barnett, Nykamp, and Hopkins (1992), Kirking (1984), and Paluck et al. (1995) revealed no significant relationships between the pharmacist's gender and communication practices.
- ◆ Pharmacist Training: Pharmacists receiving their licenses prior to 1961 counselled on a smaller proportion of prescriptions and spent less time counselling patients than other pharmacists (Laurier and Poston, 1992). Pharmacists who reported that they received training on how to counsel patients, however, reported spending more time counselling clients than pharmacists who did not receive training. Since trained pharmacists do not counsel on a higher proportion of prescriptions than other pharmacists, it is possible that the training, irrespective of pharmacist age, enables them to become selective in their practice, allowing them to triage clients and focus efforts on clients who may benefit most from the consultation. The training, therefore, influences duration, but not frequency of consultations.
- ◆ Pharmacy Type: A number of researchers (Kirking, 1984; Laurier, Archambault and Contandriopoulos, 1989; Laurier and Poston, 1992; Paluck et al., 1996) reported that pharmacists employed at independent or smaller community pharmacies communicated

with clients on a higher proportion of prescriptions than chain pharmacists. Equal numbers of researchers, however, have reported no significant differences between chain and independent pharmacists with regard to either the quantity or quality of pharmacist-patient interactions about prescription drugs (Mickle et al., 1990; Andersen-Harper, Berger, and Noel, 1992; Barnett, Nykamp, and Hopkins, 1992), or have found the rates of counselling to be higher at chain pharmacies compared to independent pharmacies (Raisch, 1993b).

### **3.3 METHODS**

#### **3.3.1 Overview of Research Methods**

A seven-page questionnaire was used to collect self-reported information from pharmacists on the factors that predisposed, enabled, and reinforced their communication practices. The questionnaire was distributed as part of a larger study examining the quality of pharmacist-client communication, the details of which have been described in Chapter 2. As a review, however, the population of Lower Mainland community pharmacists (N=836) were mailed an invitational letter requesting their participation in a study examining verbal communication between pharmacists and clients, and how this communication related to clients' satisfaction with pharmacy services. A comprehensive follow-up protocol (letter, phone call, and an on-site visit) recruited 100 pharmacists for the study (14% participation rate).

The consenting pharmacists were visited in May and June (1995) by a pair of researchers during which verbal exchanges occurring between the pharmacist and clients were audiotaped with a wireless microphone worn by the pharmacist. After the pharmacy visit, pharmacists were given a seven-page questionnaire that gathered information on personal, workplace, and social factors that predisposed, enabled, and reinforced the occurrence of quality communication. A stamped, addressed envelope was included with the questionnaire and participating pharmacists were offered a \$50 honorarium for their participation in the study. There was no follow-up of non-responders required, as all of the pharmacists returned their questionnaires as requested.

### **3.3.2 Instrument Development**

The approach used to address the study's research problem was conceptualized with the PRECEDE-PROCEED framework (Green, 1974; Green et al., 1980, Green and Kreuter, 1991; Green and Joab, 1997). The purpose of the Pharmacists' Questionnaire was to measure the predisposing, enabling, and reinforcing factors associated with pharmacist-client communication. A list of the study variables is provided in Table 3.1.

The 65-item questionnaire relied on previously tested items (Sanazaro, 1983; Moos, 1988; Mullen and Holcomb, 1990; Smith, 1990; MacDonald, 1991; Ortiz, Walker and Thomas, 1992; Raisch, 1993) and incorporated a mixture of positively and negatively worded items, typically involving a five-point nominal or ordinal response scale. The original questionnaire included 50 items that measured the three constructs and 15 items measuring

**Table 3.1 Variables Related to Pharmacist-Client Communication**

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**1. Predisposing Factors (25 items)**

- a. Pharmacist attitudes toward pharmacist-client communication (8 items)
- b. Pharmacist adherence expectations (that client will follow the advice) (3 items)
- c. Pharmacist outcome expectations - improved compliance (5 items)  
- increased patronage (5 items)
- d. Pharmacist job/role expectations (4 items)

**2. Enabling Factors (14 items)**

- a. Technical resources (3 items)
- b. Space to communicate privately with clients (3 items)
- c. Time to communicate with clients (2 items)
- d. Pharmacist self-efficacy to communicate (6 items)
- e. Financial remuneration\*

**3. Reinforcing Factors (11 items)**

- a. Organizational structure of the pharmacy (2 items)
  - b. Rewards/Incentives (6 items)
  - c. Support from peers and management (3 items)
  - d. Pharmacy laws/regulations\*
- 

\*denotes variables discussed in the literature review but not included in the questionnaire

the sociodemographic characteristics of the pharmacists and the pharmacies they worked in. To improve the internal consistency and homogeneity of the questionnaire, 10 of the questionnaire items (as reported in Chapter 2) were removed. A final listing of the questionnaire items used is located in Appendix 2.5.

### **3.4 ANALYSES**

Data were analyzed with the Statistical Package for the Social Sciences (SPSS) for Windows (release version 6.0) software package. Though the shortened version of the Pharmacists Questionnaire is used in a later chapter to test the study 's conceptual model (Figure 1.2), this chapter presents the descriptive findings for all of the items in the original version of the Pharmacists Questionnaire.

### **3.5 RESULTS**

#### **3.5.1 The Sample**

One hundred community pharmacists agreed to participate in the study (participation rate = 14%). Approximately 28% of the pharmacies visited were independently owned and/or a small chain of independently owned pharmacies (three or less stores) and almost one-third belonged to larger corporate organizations (see Table 2.2). Participating pharmacists reported that they worked an average of 38.5 hours per week, provided an average of 19 over-the-counter (OTC) drug consultations per day, and just over half (51%) were employed as staff pharmacists (Table 2.3). The above demographic statistics suggest that the participating pharmacists are representative of pharmacy practice in BC's Lower Mainland; however, the nature of the research methods used and this study topic likely attracted pharmacists more confident and motivated in the area of communication than the population norm.



### 3.5.2 Descriptive Statistics for the Pharmacist Questionnaire Items

#### *Predisposing Factors*

Pharmacists in this study could be described as highly predisposed to communicating with their clients—predisposing factor item means ranged from 3.3 to 4.6 (maximum score 5) (Table 3.2). Less than 2% of the pharmacists could be considered to be “neutral” in their attitudes toward communicating with their clients. Items with the highest means (indicating pharmacists’ strongest support for the statement) included that pharmacists enjoy speaking with clients ( $\bar{x} = 4.53$ ) and that pharmacist-client communication: increases job satisfaction ( $\bar{x} = 4.62$ ), improves patient-pharmacist relationships ( $\bar{x} = 4.59$ ), and makes it more likely that medications are taken correctly ( $\bar{x} = 4.52$ ). Items rated lowest suggest that pharmacists worry about contradicting doctors ( $\bar{x} = 3.78$ ), are somewhat unprepared to accept the additional responsibilities brought forth by increased communication ( $\bar{x} = 3.56$ ), and that they lack certainty that clients follow their advice ( $\bar{x} = 3.42$ ).

#### *Enabling Factors*

Excluding enabling factor items that did not use a five-point response scale, the overall item means appear to be slightly lower than those of the predisposing factor items. The most highly supported enabling factor items pertained to pharmacists’ perceived self-efficacy. Pharmacists reported being confident in their ability to approach people ( $\bar{x} = 4.33$ ), their ability to provide drug information ( $\bar{x} = 4.25$ ), and in their knowledge ( $\bar{x} = 4.16$ ). Items rated the lowest pertained to the frequency of using the private consultation area ( $\bar{x} = 3.09$ ) and the adequacy of the workplace library to meet their professional requirements ( $\bar{x} = 3.91$ ).

Only 30% of pharmacists worked in pharmacies that subscribed to professional journals for their employees; the remainder of pharmacists reported not receiving journals in their workplace (31%) or were unsure if their pharmacy subscribed to any (39%) (Table 3.3). Of pharmacies that did supply their pharmacists with journals, the median value was one journal subscription (range = 0 to 6).

The majority of pharmacists (86%) believed that time was not a barrier to pharmacist-client communication. Almost half of the pharmacists in the study worked in pharmacies that employed one full-time pharmacy technician (or less than one full-time equivalent). Only 21% of respondents reported they could use more technician support – 72% believed the number of technicians they had was “just right.” Participating pharmacists worked in pharmacies that employed an average of three full-time pharmacists (range = 1-7), and the majority (84%) reported that the number of pharmacists employed at their store was “about right.”

Only 21% of study pharmacists worked in pharmacies with a private consultation area; of those pharmacists, about one-third (n=7) reported using it for all or most of their counselling sessions. Many pharmacists in the study (73%) believed that pharmacies did not need a private consultation area.

**Table 3.2 Descriptive Summary of Pharmacists' Questionnaire Items****A. Predisposing Factors**

Variable	Description	Mean	St. Dev.	n
ADHEREX1	Importance of medication counselling in promoting health of average person	4.48	0.63	98
ADHEREX2	Importance of health advice in promoting health of average person	4.33	0.61	99
ADHEREX3	Certainty that the average person follows through with the advice?	3.42	0.97	99
ATT1	Counselling increases job satisfaction	4.62	0.51	100
ATT2	Don't like talking to customers*	4.53	0.80	99
ATT3	Counselling may not be necessary*	4.30	0.91	99
ATT4	People do not respect the advice of the pharmacist*	4.18	0.87	99
ATT5	Worry about contradicting doctors*	3.68	0.95	99
ATT6	It increases professional responsibility	4.37	0.84	100
ATT7	Not prepared to accept the professional responsibility*	3.56	1.37	100
ATT8	Customers do not perceive the benefits of counselling*	3.74	0.85	100
JOBEXP1	Respected community member and advice is expected from me	4.17	0.85	100

\*denotes item was reverse scored

**Predisposing Factors (continued)**

<b>Variable</b>	<b>Description</b>	<b>Mean</b>	<b>St. Dev.</b>	<b>n</b>
JOBEXP2	Counselling is not my responsibility & should be performed by the doctor *	4.43	0.88	100
JOBEXP3	Counselling enables me to become part of the health care team	4.38	0.75	100
JOBEXP4	Supervisor expects that full scope of training is applied	4.34	0.69	82
OUTCOMC1	With counselling, meds are more likely to be taken properly	4.52	0.54	100
OUTCOMC2	Counselling reduces drug wastage	4.04	0.83	100
OUTCOMC3	Counselling doesn't lead to significant improvements in health care *	4.35	0.70	100
OUTCOMC4	Counselling improves patient compliance	4.47	0.52	100
OUTCOMC5	Counselling may prevent adverse drug effects	4.10	0.87	100
OUTCOMR1	Counselling brings more people into the pharmacy	3.85	0.78	100
OUTCOMR2	Counselling increases sales	3.73	0.72	100
OUTCOMR3	Customers appreciate the extra care	4.49	0.54	100
OUTCOMR4	Counselling improves patient-pharmacist relationships	4.59	0.59	100
OUTCOMR5	Counselling improves doctor-pharmacist relationships	3.69	0.90	100

\*denotes item was reverse scored

**B. Enabling Factors**

Variable	Description	Mean	St. Dev.	n
SELFEFF1	With regular customers, I know enough about them to counsel effectively	4.29	0.82	100
SELFEFF2	I lack confidence in my knowledge*	4.16	0.71	99
SELFEFF3	I do not know how to approach people *	4.33	0.65	100
SELFEFF4	I do not know enough about drugs and their effects *	4.13	0.77	100
SELFEFF5	How certain are you that you can provide patients with appropriate drug info.	4.25	0.48	99
SELFEFF6	How certain are you that you can provide patients with appropriate health info.	4.02	0.70	99
RESOURC1	Does the pharmacy library at your workplace meet your counselling needs	3.91	0.64	99
RESOURC3	How many pharmacy journals does your pharmacy subscribe to	1.56	2.14	86
SPACE2	Use of your private area for counselling	3.09	0.83	21
TIME2FTE	Pharmacists employed	2.59	1.18	100
TIME4FTE	Pharmacy technicians employed	1.62	1.96	100
TIME 1	I am too busy to counsel*	4.04	0.69	100

\*denotes item was reverse scored

### C. Reinforcing Factors

Variable	Description	Mean	St. Dev.	n
ORGNSTR1	Approachability of supervisor	4.20	0.93	91
ORGNSTR2	Approachability of head office	3.81	1.04	92
REWARD1	There is lack of feedback from people*	3.36	0.95	100
REWARDS1	How often does your supervisor comment or reward you when you have previously attempted to use your pharmacy training	2.87	0.97	85
REWARDS5	Number of incentives/rewards available at workplace for pharmacists participating in continuing education activities	1.08	2.46	100
SUPPORT1	Support of supervisor for patient counselling	4.23	0.90	90
SUPPORT2	Support of co-workers for patient counselling	4.38	0.79	96
SUPPORT3	Workplace relationship amongst pharmacists	4.52	0.58	97

\*denotes item was reverse scored

### *Reinforcing Factors*

Although reinforcing factor items were generally scored lower than the predisposing or enabling factor items, items measuring pharmacists' perceived support from their peers were generally rated high. Pharmacists most strongly agreed with the statements that they believed there was co-worker support for counselling ( $\bar{x} = 4.38$ ) and that their workplace relations with co-workers were favourable ( $\bar{x} = 4.52$ ).

The reinforcing factor items scored lowest pertained to the availability of rewards or incentives for providing good service. For example, receiving comments or rewards from supervisors for good performance ( $\bar{x} = 2.87$ ) and a lack of feedback from clients ( $\bar{x} = 3.36$ ) were the two lowest rated items in the reinforcing factors construct (Table 3.2). Almost 30% of the sample reported that their supervisor never or rarely commented on or rewarded their good performance, and 70% reported receiving no tangible incentives for good performance (Table 3.3). In addition, only 12% believed that there were consequences in their store for poor performance as a pharmacist. A small number (13%) of study pharmacists reported receiving some form of financial incentive to maintain their competency through continuing education (CE) programs.

### **3.6 DISCUSSION**

The results from the Pharmacists' Questionnaire reinforce what has been previously reported in the literature. Despite the fact that these findings do not alter the current, broader

knowledge surrounding pharmacist-client communication and its barriers and facilitators, they contain important implications for pharmacist educators, employers, and regulators.

Many questionnaire items indicated pharmacists' strong willingness to establish a greater communication role; responses to other items, however, reveal that major attitudinal barriers remain. For example, many pharmacists believe that the average pharmacy client will not follow their advice, and worry that the advice they provide may contradict that provided by a doctor. No planned intervention addressing the deficient enabling and reinforcing factors will improve or sustain quality pharmacist-client communication until these attitudinal barriers are modified.

Much of previous pharmacy research has examined the attitudes or factual knowledge of pharmacists and has conceptualized them as being the primary barrier to improving pharmacist-client communication. In this study, however, the factors that enabled quality communication to occur and the factors that reinforced or sustained its continuance were also examined. Though pharmacists reported feeling confident about their knowledge of medications and their abilities to convey this information to their clients, they indicated that their workplace pharmacy library did not always meet their needs. It was not completely surprising, therefore, that most pharmacies did not subscribe to professional journals for their pharmacists. Though the College of Pharmacists of BC regulates the minimum requirement for dispensary libraries, an examination of these requirements may be warranted.



**Table 3.3 Frequency Distributions of Pharmacist Questionnaire Items**

Variable	Value Label	Frequency (Percent)				
		1	2	3	4	5
ADHEREX1	Importance of medication counselling in promoting health of average person	1.0	0.0	1.0	45.9	51.0
ADHEREX2	Importance of health advice in promoting health of average person	1.0	0.0	1.0	60.6	37.0
ADHEREX3	Certainty that the average person follows through with the advice?	0.0	16.2	33.3	46.5	3.0
ATT1	Counselling increases job satisfaction	0.0	0.0	1.0	36.0	63.0
ATT2	Don't like talking to customers*	3.0	0.0	1.0	33.3	62.6
ATT3	Counselling may not be necessary*	2.0	4.0	6.1	37.4	50.5
ATT4	People don't respect the advice*	3.0	2.0	6.1	51.5	37.4
ATT5	Worry about contradicting doctors*	0.0	17.2	14.1	52.5	16.2
ATT6	Counselling increases professional responsibility	3.0	1.0	2.0	44.0	50.0
ATT7	Not prepared to accept the professional responsibility*	10.0	16.0	6.0	48.0	19.0
ATT8	Customers don't perceive the benefits of counselling*	0.0	12.0	15.0	60.0	13.0
JOBEXP1	Am a respected community member & advice is expected from me	2.0	2.0	11.0	47.0	38.0
JOBEXP2	Not my responsibility and should be performed by the doctor *	4.0	0.0	2.0	37.0	57.0
JOBEXP3	Enables me to become part of the health care team	1.0	2.0	4.0	44.0	49.0

Variable	Value Label	Frequency (Percent)				
		1	2	3	4	5
JOBEXP4	Supervisor expects that my full scope of pharmacy training is applied	0.0	1.2	8.5	45.1	45.1
ORGNSTR1	Supervisor is approachable	3.3	1.1	11.0	42.9	40.7
ORGNSTR2	Head office is approachable	3.3	6.5	23.9	39.1	26.1
OUTCOMC1	With counselling, meds. are more likely to be taken properly	0.0	0.0	2.0	44.0	54.0
OUTCOMC2	Counselling reduces drug wastage	0.0	5.0	17.0	47.0	31.0
OUTCOMC3	Counselling doesn't lead to significant improvements in health care *	1.0	1.0	4.0	50.0	44.0
OUTCOMC4	Counselling improves patient compliance	0.0	0.0	1.0	51.0	48.0
OUTCOMC5	Counselling prevents adverse drug effects	0.0	9.0	6.0	51.0	34.0
OUTCOMR1	Counselling brings more people in	0.0	4.0	27.0	49.0	20.0
OUTCOMR2	Counselling increases sales	1.0	1.0	34.0	52.0	12.0
OUTCOMR3	Customers appreciate the extra care	0.0	0.0	2.0	47.0	51.0
OUTCOMR4	Counselling improves patient-pharmacist relationships	0.0	1.0	2.0	34.0	63.0
OUTCOMR5	Counselling improves doctor-pharmacist relationships	0.0	10.0	30.0	41.0	19.0
RESOURC1	Pharmacy library at your workplace meets your counselling needs	0.0	2.0	19.2	64.6	14.1
RESOURC2	Does your pharmacy subscribe to any professional journals	31.3	11.1	57.6	-----	--

Variable	Value Label	Frequency (Percent)				
		1	2	3	4	5
REWARD1	There is lack of feedback from people *	3.0	18.0	25.0	48.0	6.0
REWARDS1	Supervisor comments or rewards you when you use your pharmacy training	10.6	17.6	50.6	16.5	4.7
REWARDS2	Incentives are there for good service within the whole store	57.0	32.0	8.0	3.0	--
REWARDS3	What types of incentives are there for good service by pharmacists	70.0	15.0	13.0	2.0	--
REWARDS4	Are there consequences for poor service	38.0	46.0	12.0	--	--
REWARDS5	Types of incentives/rewards available at workplace for pharmacists participating in continuing education activities	71.0	7.0	13.0	1.0	--
SELFEFF1	I know enough about regular customers to counsel effectively	0.0	3.0	4.0	58.0	34.0
SELFEFF2	I lack confidence in my knowledge*	0.0	3.0	9.1	56.6	31.3
SELFEFF3	I do not know how to approach people*	1.0	0.0	4.0	55.0	40.0
SELFEFF4	I do not know enough about drugs and their effects*	1.0	4.0	6.0	59.0	30.0
SELFEFF5	Certainty that you can provide patients with appropriate drug info.	0.0	0.0	2.0	70.7	27.3
SELFEFF6	Certainty that you can provide patients with appropriate health info.	0.0	4.0	11.1	63.6	21.2
SPACE1	Do you have a private counselling area	77.8	22.2	--	--	--
SPACE2	Use of your private area for counselling	4.8	9.5	61.9	19.0	4.8

Variable	Value Label	Frequency (Percent)				
		1	2	3	4	5
SPACE3	Should pharmacies have a private area	7.1	20.2	72.7	--	--
SUPPORT1	Support of supervisor for counselling	1.1	5.6	6.7	43.3	42.2
SUPPORT2	Support of co-workers for counselling	0.0	1.0	5.2	53.1	39.6
SUPPORT3	Workplace relations among pharmacists	0.0	0.0	4.1	40.2	55.7
TIME 1	I am too busy to counsel*	1.0	1.0	14.0	64.0	20.0
TIME3	Adequate # of pharmacists employed	15.0	14.0	84.0	--	--
TIME4	Adequate # of technicians employed	20.0	3.2	76.6	--	--

\*denotes item was reverse scored

Pharmacists in this study reported receiving minimal reinforcement for the continuance of quality communication. In general, pharmacists reported a lack of feedback from both their immediate supervisor and pharmacy clients. Though workplace relations appear to be favourable in the vast majority of pharmacies, pharmacists reported rarely receiving positive comments or rewards from their supervisor for providing exceptional service and reported that they would feel uncomfortable approaching their head office with suggestions for improving client care.

The administration of the Pharmacists' Questionnaire was necessary to collect information about the predisposing, enabling, and reinforcing factors influencing pharmacist client communication. Very few pharmacy practice studies have used the PRECEDE-PROCEED framework, and there is little documentation in the literature (other than anecdotal) pertaining to the factors that reinforce pharmacist-client communication. In addition, much of the information that is known to pharmacy researchers has been obtained from self-report surveys of pharmacists. While information obtained via self-report is important, this chapter's literature review exemplifies the highly variable findings that have been obtained.

The Pharmacists Questionnaire provided pharmacist-specific and provincially-specific data regarding the factors that predispose, enable, and reinforce quality communication. In Chapter 6, findings from the questionnaire will be empirically tested against the quality of pharmacist-client communication.

### **3.7 CONCLUSIONS**

This chapter considered descriptive self-reported data from the Pharmacists' Questionnaire, which examined the influence of 11 variables (assigned *a priori* to one of three constructs) on the occurrence of pharmacist-client communication.

Pharmacists in this study reported being very predisposed to communicating with their clients—less than 2% could be considered to be neutral to the issue. Though many individual items on the questionnaire had means that were quite high ( $\bar{x} > 4.0 / 5.0$ ), some items had means ranging from 3.0 - 3.9, denoting some degree of uncertainty in pharmacists' beliefs and

attitudes pertaining to those items. Questionnaire items that were scored lowest indicate that pharmacists worry that their advice to clients may contradict that from doctors, are doubtful that their health advice is followed by clients, are hesitant to accept the additional professional responsibilities that accompany a role expansion, and finally, that there is a lack of feedback from clients and pharmacy supervisors.

Comparing the mean scores of items within the three constructs (predisposing, enabling, and reinforcing factor constructs), it appears that although pharmacists report being highly predisposed to participating in quality pharmacist-client communication ( $\bar{x} = 4.35$ ), they lack enabling factors ( $\bar{x} = 4.02$ ), and to a greater extent, the reinforcing factors necessary to support the occurrence and continuance of quality pharmacist-client communication ( $\bar{x} = 3.91$ ).

Future intervention efforts could be targeted to three primary areas. First, the enabling and reinforcing factors that pharmacists report as deficient must be addressed. Chapter 6 correlates these predisposing, enabling, and reinforcing variables to an outcome measure (technical quality of pharmacist-client communication), making it possible to strategically determine the appropriate mixture of predisposing, enabling, and reinforcing factors to be targeted, and thus facilitating an efficient and effective change in the frequency, content, or quality of pharmacist-client communication. Second, an intervention helping to bridge the communication gap between family physicians and pharmacists may lessen pharmacists' fear that their advice will contradict that of doctors. Finally, this questionnaire restricted itself to examining the predisposing, enabling, and reinforcing factors influencing pharmacists'

communication behaviours. The dyadic nature of quality communication necessitates further research on the communication barriers and facilitators experienced by pharmacy clients.

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## **CHAPTER 4**

### **THE QUALITY OF PHARMACIST-CLIENT COMMUNICATION**

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#### **4.1 INTRODUCTION**

In this era of cost-containment, accountability, and quality control, an increasing amount of research has been conducted regarding the quality of pharmaceutical services. While many of the studies examining pharmacy outcomes have been based in hospital settings and/or have involved a pharmacoeconomic focus, few Canadian studies have attempted to assess the quality of pharmacist-client communication in community pharmacies. The purpose of this study, therefore, is to examine the quality of pharmacist-client communication. The literature review examines findings from previous studies that have assessed the quality of services in community pharmacies and discusses some of the limitations of research in this field. It is followed by a presentation of data collected during May and June of 1995 that describe the quality of pharmacist-client communication in B.C.'s Lower Mainland pharmacies.

#### **4.2 LITERATURE REVIEW**

A number of excellent literature reviews examine pharmacist-client communication (more commonly referred to as patient counselling) (Willison and Muzzin, 1995; DeYoung, 1996). Willison and Muzzin divided the literature examining patient counselling

into three categories: 1) surveys of patients who have recently received prescriptions for medication; 2) pharmacists' self-reports regarding counselling behaviour; and 3) standardized patient encounters. DeYoung (1996) preferred a chronological approach that mapped patient counselling throughout the decades, with the focus on research outcomes during each decade. Regardless of the method, both parties of researchers agree that the literature in this area is constrained by three main issues. First, a lack of standardized terminology and a wide variability in what constitutes counselling makes it difficult to make any sort of comparative assessment of pharmacist-client communication. Secondly, the number of subjects included in earlier studies was usually fairly low. Finally, many studies in this area utilized a hidden-shopper technique and only focused on one or two different scenarios, thus limiting the generalizability of the findings. Therefore, although the following literature review examines earlier work completed in this area, a greater emphasis will be directed toward current research that has attempted to overcome or minimize the above limitations.

The review is divided into three main areas: i) characteristics of pharmacist-client communication (duration, content, and frequency); ii) quality of pharmacist-client communication; and iii) limitations of pharmacist-client communication research. An attempt has been made to standardize the terminology in this chapter by replacing the term **"patient counselling"** with the term **"pharmacist client communication,"** however, there were instances when it was necessary to retain the researchers' original terminology.

#### **4.2.1 Characteristics of Pharmacist-Client Communication**

##### *Duration of Consultations*

Acknowledging that different definitions of pharmacist-client communication exist in the literature and that different criteria for measuring duration were used, the length of the typical pharmacist-client interaction, while still short in duration, appears to be increasing. Research conducted in the 1980s revealed that the average interaction time between a pharmacist and a client receiving a new prescription ranged from approximately 20 seconds (Mason and Svarstad, 1984) to 60 seconds or less (Kirking, 1982). By the 1990s, however, some studies indicated that pharmacists were spending longer periods of time speaking with clients. For example, in England, the average pharmacist-client consultation lasted about two-and-a-half minutes (Smith, 1992a). In the U.S., a recent report indicates the average duration of pharmacist-client communication is just under two minutes (114 seconds) (Sleath, 1996), while in Canada, 73% of pharmacist-client encounters studied were 2 to 4 minutes in duration (Willison and Muzzin, 1995).

##### *Frequency of Pharmacy-Client Communication*

An analysis of studies reported in the literature between 1974 and 1983 (Wiederholt, Clarridge, and Svarstad, 1992) suggested that 30-87% of clients received no verbal communication from their pharmacist. A more recent report, however, indicated Canadian community pharmacists communicate with clients on 52% of all prescriptions (Laurier and Poston, 1992). This was estimated to occupy approximately 16% of the pharmacist's time, or roughly 30 minutes during a three-hour period. Other studies conducted in the U.S. during the 1990s cite pharmacists counselling an average of 55-60%

of their clients (Meade, 1992; Wiederholt, Clarridge, and Svarstad, 1992; Sleath, 1996). In general, pharmacists report spending 9% of their time participating in patient education activities and 11% of their time counselling (Andersen-Harper, Berger, and Noel, 1992).

In 1992, the American Pharmaceutical Association, American Colleges of Pharmacy, American Society of Hospital Pharmacists, and the National Association of Boards of Pharmacy co-sponsored the two-year "Scope of Pharmacy Practice Project". The objective of the study was to obtain a valid picture of current pharmacy practice by identifying current and emerging practice areas, and provide a basis for promoting the role of pharmacy practitioners to the public and to third party payers. The survey was mailed to 6,110 pharmacists but had a very low response rate (28%) (n=1400). Pharmacists in this survey reported that providing pharmaceutical care and providing drug information and education were the foremost functions in their practices, occupying 66% of their work time (Meade, 1994).

#### *Content of Pharmacy-Client Communication*

While the duration and frequency of pharmacist-client exchanges appear to be increasing, the content of what pharmacists and clients discuss also is changing in accordance with the concepts guiding pharmacy practice.

In the 1960s, it was considered to be unethical to discuss a prescription's composition with a client; therefore, the majority of studies undertaken during this time validated the concept that pharmacist-provided drug information could have beneficial effects on clients. Most pharmacists did not have the skills to provide clients with drug information at this point in time, which meant that a structured script was required for



pharmacist-client communication (DeYoung, 1996). Communication guidelines established during the late 1960s established pharmacist responsibility for ensuring client compliance with a medication regimen (DeYoung, 1996).

With the advent of the clinical pharmacy movement in the 1970s, the role of pharmacists expanded from that of an enforcer of medication compliance and doctors' orders, to one that included responsibility for safe and rational drug use. Incorporating the ideals of clinical pharmacy practice into the current community pharmacy environment required additional medical and personal information from the client; thus, much of the research during this period focused on pharmacists' ability to obtain medication histories from clients (DeYoung, 1996). More importantly perhaps, this era marked a change in the conceptual foundation of pharmacist-client communication. In the preceding "drug-delivery" era, communication was a one-way process with the client being the passive recipient. In the clinical pharmacy era, however, the client became established as a partner (albeit unequal) in the exchange of medication or health information.

Despite the shifting practice norms and the evolving philosophical relationship between pharmacists and clients from the 1960s and 1970s, there appeared to be little noticeable effect in the pharmacy workplace. In 1989, the five most common types of information pharmacists provided clients were: 1) directions for the drug's use, 2) side effects of the drug, 3) the dosage of the drug, 4) number of doses to be taken per day, and 5) the duration of treatment (Berardo, Kimberlin, and Barnett, 1989). In Canada, though pharmacists reported regularly discussing the medication's purpose and mode of administration (Laurier, Archambault, and Contandriopolous, 1989), this was not the prevailing standard. In general, pharmacists seldom told patients the medication's purpose

or what to expect from their pharmacotherapy. Consultations were typically client-initiated and were limited to a discussion of how to take the medication—little discussion pertaining to the drug's purpose or side effects occurred, nor was much time devoted to obtaining a patient history (Kirking, 1982; Carroll and Gagnon, 1983; Willison and Muzzin, 1995; DeYoung, 1996).

In the 1990s, the term pharmaceutical care raced through the pharmacy literature and academic circles. This newest philosophy of practice further extended pharmacists' role to include professional responsibility for the long-term follow up of clients to ensure that optimal outcomes in drug therapy are achieved. Pharmaceutical care methods view the client as an equal partner in decisions pertaining to their care, and thus require a strong pharmacist-client relationship. However, it is not surprising that community pharmacists who, as the literature suggests, were unable to meet the goals of the 1970s clinical pharmacy era, are equally deficient in achieving the goals of the current, more demanding, practice norm. Indeed, research published in the 1990s confirms the lack of progress in pharmacist-client communication, noting that it is usually restricted to how to take the medication (Meade, 1992; Wiederholt, Clarridge, and Svarstad, 1992). In addition, according to both client and pharmacist reports, pharmacists seldom tell clients about the purpose of their medication (Meade, 1992; Wiederholdt, Clarridge and Svarstad, 1992). Willison and Muzzin (1995) reported that pharmacists' ability to obtain an adequate medical history (also known as a patient assessment) was generally poor with a history being taken in 50% or fewer of the encounters.

In the 1990s, an increase in exploratory and descriptive studies pertaining to community pharmacy practice made it possible to describe a typical pharmacist-client

encounter. For example, clients ask approximately one to three questions (Morrow et al., 1992; Smith, 1992a; Smith, 1992b; Sleath, 1996) and receive anywhere from six items (Smith, 1992) to fifteen items (Wilson et al., 1992) to 22 items (Sleath, 1996) of information per consultation, often depending on whether it was a prescription or non-prescription consultation. Smith and Salkind (1990) reported that pharmacists in their study asked a mean of three questions per consultation and that very few were open-ended questions. Smith and Salkind also reported that it was very rare for a client's question not to be answered.

In a recent observational study examining the participatory nature of the pharmacist-client relationship, Sleath (1996) reported that pharmacists provided clients with an average of 4.6 pieces of information per encounter. In 58% of the encounters the pharmacist did not ask any close-ended questions of the client, asked one close-ended question in 34% of the interactions, and asked one or more open-ended questions in only 3% of the interactions. Despite the mandatory counselling law in the U.S., the study pharmacists failed to advise 57% of the clients receiving a prescription. While the technical components of pharmacist-client communication were less than ideal in this study, the interpersonal skills of the study pharmacists appeared relatively strong. For example, it was rare for the study pharmacists to ignore the client (1%), interrupt the client (1%), appear rushed (1%) or fail to bid farewell (9%).

#### **4.2.2 Quality of Pharmacist-Client Communication**

In the late 1960s the profession of pharmacy began to expand its role to include patient education and studies examining the quality of patient education services were quick to appear. In one of the first studies to be published in this area, a programmed patient posing as a diabetic was sent to visit 36 community pharmacies (Knapp et al., 1969). The patient queried the pharmacist on the suitability of a cold medication that was contraindicated in diabetics—only 6 of the 36 pharmacists did not sell the contraindicated medication to the programmed patient. Since then, a number of studies have found that pharmacists performed poorly in their advisory activities and, in many instances, provided information or suggestions that could endanger the client's health (DeYoung, 1996).

Using standardized patients, Willison and Muzzin (1995) visited 30 pharmacies in the Hamilton, Ontario area. Although only 27% of the pharmacies provided totally safe advice in all five of the test consultations, 53% provided totally safe advice in three or four encounters, and 20% provided totally safe advice in only one or two of the encounters, the researchers concluded that practice had improved since the 1970s. In a study by Smith et al. (1990), U.K. pharmacists were judged to have achieved satisfactory scores for safety and appropriateness (62/100) in only 57% of the 50 consultations analysed by an expert panel; the remainder scored below satisfactory. Mickle et al. (1990) reported that 81% of the 31 pharmacists in Tennessee who attempted to educate a programmed patient about a metered-dose inhaler failed to describe correctly half of the steps necessary for successful use of the device. However, in contrast, Barnett et al. (1992), after completing 156 visits to 84 community pharmacies in Georgia, found that most of the pharmacists were accessible, friendly, and possessed favourable communication skills. Likewise, Sierralta

and Scott (1995) reinacted the “diabetic and cold medicine study” in 1990 and found that only 30.5% of the pharmacists failed to warn the client about the contraindication, compared with 83% in the earlier 1969 study. These authors concluded that, compared to research in the 1960s and 1970s, pharmacists had improved their ability to advise clients on non-prescription medications.

#### **4.2.3 Limitations of Pharmacist-Client Communication Research**

Although there is an abundance of pharmacy literature examining pharmacist-client communication (i.e., patient counselling), the utility of much of the research is constrained by a number of issues. DeYoung (1996) provided insight into the fundamental limitations in this research, which he defined according to four major issues: validity of outcome measures, paucity of theory-driven research, failure to define key terms, and inadequate sample size. Though these issues were briefly introduced at the beginning of this literature review, the following section provides an opportunity to discuss these issues in more detail.

##### *Validity of Outcome Measures*

The most common impact or outcome in pharmacist-client communication studies has been compliance and knowledge; however, client recall or recognition of drug information has not been shown to accurately reflect client understanding of drug information. That is, being able to reiterate the drug name and its administration directions may not reveal whether or not clients understand their drug therapy. In spite of this, until

the late 1980s, many studies continued to use client knowledge and/or compliance as an outcome without addressing the issue of reliability and validity. Without a reliable and valid outcome measure, there exists no clear or measurable evidence that pharmacist-client communication can actually improve client outcomes (DeYoung, 1996).

#### *Paucity of Theory-Driven Research*

Only one of the many earlier studies published employed a specific model or theory (Opdyke et al., 1992); without a theory or model, the interpretation of results may have been skewed. For example, De Young (1996) suggests that researchers may have been studying the impact of the duration, rather than the content, of pharmacist dialogue on client outcomes. That is, researchers may have thought they were demonstrating that when pharmacists talk to people *about their drugs*, client outcomes would improve; however, all the researchers may have discovered is that client outcomes improve when pharmacists just *talk to people*. The content of the pharmacist-client interaction may be completely irrelevant, as DeYoung (1996) points out, the positive results may have been due to the Hawthorne Effect. In other words, the positive outcomes were not necessarily based on the content of what pharmacists did (i.e., the use of verbal counselling, labels, patient information sheets, videos, etc.), rather it was the increased time and attention given to the clients. It may be that what the researchers were actually studying was the effect of clients perceiving that the pharmacist cared about their health.

Therefore, much of the available pharmacist-client communication research could demonstrate that patients who interacted with their pharmacists were more knowledgeable and compliant with their medications than patients who did not interact with a pharmacist.

But, because researchers failed to delineate a model or theory to guide their research, no one was able to claim how or why pharmacists were improving outcomes (DeYoung, 1996). Even though much of the research conducted in the 1990s has moved away from using knowledge and compliance as outcomes, many researchers have continued to fail to use a specific communication model or theory.

#### *Failure to Define Key Terms*

The research in this area has also failed to define and differentiate between such terms as patient counselling, patient education, and patient knowledge. This has limited the conclusions that can be drawn from this research, and has restricted any cross comparisons among findings.

#### *Sample Size*

Research from much of this period is limited by the small sample sizes used in the studies. For example, in the 1980s many studies used less than two pharmacists, one study involved eight pharmacists, and in a couple of studies it was unclear how many pharmacists participated (DeYoung, 1996).

### **4.3 METHODS**

#### **4.3.1 General Methods**

On-site field observations, using a wireless microphone to record interactions occurring between pharmacists and clients, provided the data for this study. Though the

specific details of the methods used in this study have been presented in Chapter 2, a brief review follows.

A self-selected group of community pharmacists consented to participate in a study examining verbal communication between pharmacists and clients, and how this communication related to client satisfaction with pharmacy services. The population of Lower Mainland community pharmacists (N=836) received a letter requesting their participation. Despite a comprehensive follow-up protocol and a \$50 honorarium, the study recruited only 100 pharmacists representing a 14% participation rate.

The pharmacists were visited at work by a pair of researchers for a pre-scheduled four hour visit. At this visit, verbal exchanges occurring between the pharmacist and his/her clients were recorded with a wireless microphone. Only clients giving their verbal consent to participate in the study were recorded. Clients unable to understand English were excluded from the study.

Upon completion of the field visits, an eight-member expert panel of practising pharmacists and pharmacy faculty members was convened to rate the quality of communication of the audiotaped consultations using the nine item scale developed for the study. Working in pairs, the expert raters listened to and evaluated 765 consultations over a three-day period. Panel members were offered a \$750 honorarium for their three day commitment. The mixture of raters (pharmacist educators hypothetically more stringent and practicing pharmacists more liberal) was used to obtain a more balanced estimate of the quality of pharmacist-client communication.

Ethical approval for the study was obtained from the University of British Columbia Behavioural Sciences Screening Committee for Research Involving Human



Subjects. Letters of support and permission for the study were obtained from the BC College of Pharmacists, the BC Pharmacy Association, as well as the upper level management of large chain pharmacies participating in the study.

#### **4.3.2 Development of the Quality of Communication Rating Scale**

The development of an instrument to measure the quality of communication between pharmacists and their clients was facilitated by existing resources, such as an evaluation form currently used for students' clinical rotation in the Doctor of Pharmacy program at the University of British Columbia, and prescription and OTC counselling guidelines outlined by McBean-Cochrane (1988), Thompson (1993), and Farris and Kirking (1993). Two parallel instruments were developed—one for prescription medications, and one for non-prescription (OTC) or general health advice consultations. A more complete description of the development and testing of this instrument is provided in Chapter 2.

The Prescription Products Consultation Evaluation Form consists of eight items or skill areas that are considered important in a pharmacist-client exchange (see Table 2.6 in Chapter 2). The scale allows pharmacist-client communication to be rated on a seven-point scale ranging from *poor* to *very good*. The Non-Prescription Products or general health advice consultation rating form is similar to the prescription consultation rating form with only a few modifications to make it more specific to this type of an exchange. It includes the following categories: establishes relationship, client assessment, selects suitable product, medication administration, discusses non-pharmacologic approaches,

provides follow-up and monitoring advice, facilitates client understanding, and interpersonal skills. Like the Prescription Consultation Rating Form, ratings for OTC consultations were obtained using a seven-point scale ranging from 1 (*poor*) to 7 (*very good*). Both scales included a ninth item that consisted of the raters' overall impression of the interaction.

#### **4.3.3 Reliability of Quality of Communication Scale Items and Validity of Inferences Drawn from Their Use**

Chapter 2 revealed that, for the purposes of this study, the Quality of Communication Rating Scale contained reliable items that would allow valid inferences to be made. A peer and expert review process had established the content validity of items included in the scale prior to pilot testing. The reliability or internal consistency of the scale was found to have an alpha coefficient of 0.82 when used by faculty raters and 0.95 when used by practitioner raters.

The use of multiple raters exposed the study to inter-rater and intra-rater biases due to disagreement or fatigue (Streiner and Norman, 1991). To estimate the potential impact of these biases, a method involving frequency of agreement counts (Perreault and Leigh, 1989) was used to estimate the inter-rater and intra-rater reliability indices of the expert raters. In this study, rater agreement was acknowledged when raters' scores were within 1.0 of each other; scores exceeding a 1.0 difference were regarded as rater disagreement. Although differences of less than 1.0 may be statistically significant, it is reasoned that the *practical* significance of ratings differing by less than 1.0 is difficult to operationalize, and that differences do not become meaningful until they exceed 1.0.

Using this system, inter-rater reliability indices ranged from 0.91 to 1.00 (i.e., 91% to 100% agreement), and intra-rater agreement ranged from 0.67 to 0.97 (mean agreement index = 84%). Test consultations were nested throughout the three-day rating period to estimate variability due to rater fatigue and rater drift.

#### **4.3.4 Analyses**

Four ratings of quality were computed for the study: Overall Quality; Academic Quality; Practitioner Quality; and, Total Quality. While only Overall Quality is discussed in this chapter (the remainder will be addressed in Chapter 6), a brief definition of all of the ratings and their calculations is provided below.

- a. Overall Quality: The Overall Quality score represents the overall impressions of the academic and the practitioner raters. The rating was calculated by averaging the faculty and practitioner ratings for item number nine on the Quality of Communication Rating Scale. The Overall Quality rating is appropriate for discussing the general quality of pharmacist-client communication because it has been subjectively weighted by the raters to adjust for varying circumstances within the pharmacist-client interactions.
  
- b. Academic Quality: Academic Quality represents the Quality of Communication scores obtained from the faculty raters. It is the average or mean score of all nine Quality of Communication rating scale items. Items that were inapplicable (for example, the discussion of medication administration when a product is not sold) or unable to be

evaluated (due to insufficient information), were disregarded. Thus, Academic Quality scores represent the average rating for applicable scale items only.

c. Practitioner Quality: The Practitioner Quality ratings were calculated in the same fashion as Academic Quality ratings, with the obvious distinction of using ratings provided by the practitioners.

d. Total Quality: The Total Quality score is a composite score that acknowledges both raters' opinions on all nine items. It is the average of the Academic Quality and Practitioner Quality ratings. The Total Quality score serves as the impact variable in this study and will be correlated with data from the Pharmacists' Questionnaire.

Descriptive statistics were used to examine the recorded pharmacist-client exchanges. Student t-tests (paired and unpaired) were employed to examine rater differences in scoring and differences within communication skill areas. All statistical tests were performed using the SPSS (Statistical Package for the Social Sciences) for Windows software program (version 6.0). The large sample of consultations (n=765) in this study increases power of the statistical analyses undertaken and the chances of making a Type II error; therefore, a more conservative alpha probability of 0.001 was selected.

## **4.4 RESULTS**

### **4.4.1 Sample Description**

#### *Pharmacist Sample*

One hundred community pharmacists (participation rate = 14.5%) representing nearly all types of Lower Mainland pharmacies participated in the study. Data presented in Chapter 2 suggest that the sample, in terms of age, gender, and years since graduation, were fairly representative of the pharmacist population.

#### *Client Sample*

Seven hundred and eighty-six (786) pharmacy clients participated in the study (85% response); almost 64% of the sample were female, with a median age of 39 years (range = 14 to 89) (Table 2.4). In general, the sample was predominately Caucasian (78.3%) and about 63% of the sample had some form of post-secondary education. None of data collected (age, gender, ethnicity) suggested that non-responders differed from responders.

### **4.4.2 Pharmacist-Client Communication Described**

#### *Types of Consultations*

During the six-week observation period, 786 pharmacist-client exchanges involving a total of 924 drug- or health-related topics were recorded (more than one topic was discussed during some consultations). Approximately 55% of the pharmacist-client

exchanges involved a new prescription, 13% were for a refill prescription, and 19% pertained to over-the-counter medications. In just under 10% of the consultations, it could not be determined whether the consultation was pertaining to a new or refill prescription.

### *Duration of Consultations*

The mean duration of a consultation was 2 minutes and 20 seconds (range of 15 seconds to 15 minutes). The mean duration of a new prescription consultation was 2 minutes, 17 seconds; a refill prescription consultation was 2 minutes, 22 seconds; and an OTC consultation was 2 minutes, 40 seconds. Just over half (54%) of the consultations were less than 2 minutes in duration, while 13% of consultations exceeded 4 minutes (Table 4.1). No significant differences in duration were found between the three types of consultations ( $F=0.97$ ; NS). Furthermore, there was no evidence to suggest that the

**Table 4.1 Duration of Pharmacist-Client Communication (n=786)**

<b>Duration</b>	<b>Percent</b>
0 – 60 seconds	17.5
1 – 2 minutes	36.7
2 – 3 minutes	24.8
3 – 4 minutes	7.9
> 4 minutes	13.0
TOTAL	100.0

duration of the consultation was affected by the client's age ( $F=2.60$ ; NS), educational attainment ( $F=1.07$ ; NS), ethnic background ( $F=1.78$ ; NS), or perceived health status ( $F=0.77$ ; NS). Though the ability of pharmacy technicians to free up pharmacists' time for client consultations is well-accepted, the duration of consultations was negatively correlated to the number of technicians employed by the pharmacy ( $r = -0.13$ ;  $p<0.001$ ).

#### *Presenting Symptoms for OTC Products or General Health Advice*

A variety of symptoms and requests for drugs and information were observed in this study. The most common non-prescription drugs topics for pharmacist-client communication pertained to allergies, vitamins, and the common cold. Almost 10% of the presenting symptoms involved an infant, toddler, or breastfeeding mother (Table 4.2).

**Table 4.2 OTC/General Health Advice Presenting Problems (n=192)**

Symptom Category	n	Percent
Respiratory	17	8.8
Skin	25	13.0
Ear, nose, and oropharynx	34	17.7
Gastrointestinal	12	6.3
Musculoskeletal	30	15.6
Eye	5	2.6
Misc.	51	26.6
Infant/Baby	18	9.4
TOTAL	192	100.0

### *Prescription Product Drug Classifications*

Almost 80% of the pharmacist-client exchanges involved either a new or refill prescription drug product (n=732) (Table 4.3). The two largest classes of drugs discussed between pharmacists and clients included oral antibiotics (27%) and non-steroidal anti-inflammatory agents (19%).

**Table 4.3 Classification of Prescription Drug Consultations (n=732)**

<b>Drug Class</b>	<b>n</b>	<b>Percent</b>
Asthma	39	5.3
Ulcer/GI Motility	21	2.9
Oral antibiotics	199	27.2
Anti-fungal	14	1.9
Anti-viral	3	0.4
Topical antibiotics	12	1.6
Psychotherapeutic	87	11.9
Non-steroidal anti-inflammatory	136	18.6
Steroidal anti-inflammatory	48	6.6
Cardiovascular	54	7.4
Allergy	19	2.6
Miscellaneous	117	16.0
TOTAL	732	100.0



#### 4.4.3 Quality of Pharmacist-Client Communication

Ratings of Overall Quality were normally distributed with 58.5% of the consultations rated as being satisfactory or better. Approximately 15% of the consultations were rated as being "poor" (receiving a score lower than 3.0), while almost 18% of the consultations were rated as being "good" (receiving a score higher than 5.0) (Table 4.4). In general, OTC/general health advice consultations were rated lower than either new prescription or refill medication consultations (Table 4.5).

**Table 4.4 Distribution of Overall Quality Scores**

<b>Range of Overall Quality Scores</b>	<b>Frequency</b>	<b>Percent</b>
1.0 – 1.9	12	1.7
2.0 – 2.9	93	13.5
3.0 – 3.9	182	26.4
4.0 – 4.9	280	40.6
5.0 – 5.9	95	13.8
6.0 – 7.0	28	4.1
<b>TOTAL</b>	<b>690*</b>	<b>100.0</b>

\* Of the 786 consultations collected for the study, only 765 were used due to time restraints. Thirty (30) of the 765 were reserved for expert panel training, and an additional 45 were excluded because one or both of the raters failed to provide a rating of overall quality for the consultation. Thus, the final number of usable consultations was 690.

**Table 4.5 Comparison of Overall Quality Means Separated by Rater Type**

Consultation Type	Rater Group		t-value	df	Signif.
	Faculty	Practitioner			
New prescription	3.97	4.14	-3.63	318	<0.001
Refill prescription	3.75	4.15	-3.35	40	0.002
OTC/general health	3.89	4.00	-0.99	62	0.32

Table 4.6 compares the faculty and practitioner mean scores for the scale items in the Quality of Communication instrument. Though minor rating variations occur between the faculty and practitioner raters, their scores demonstrate rater agreement on the strengths and weaknesses of the consultations. For new prescription consultations, the discussion of medication storage instructions and conducting a client assessment were the weakest aspects of pharmacist-client communication, while pharmacists' interpersonal skills and their ability to discuss the administration of medication were rated very favourably. For OTC/general health advice consultations, the rater scores indicate that the discussion of medication storage and the provision of non-pharmacologic approaches were the weakest components of these consultations; pharmacists' interpersonal skills and their ability to select a suitable non-prescription product, however, were rated very high.

A paired t-test was used to examine the difference in scoring between faculty and practitioner raters (Table 4.6). Mean ratings from faculty and practitioner raters significantly differed in four of the nine scale items for the Prescription Consultation Rating Form and in one of the nine items included in the Non-prescription Consultation

**Table 4.6 Comparison of Item Means by Type of Rater**

<b><u>Mean Item Ratings for New Prescription Consultations</u></b>					
<b>Item</b>	<b>Academic Rating</b>	<b>Practitioner Rating</b>	<b>t-value</b>	<b>df</b>	<b>2-tail Signif.</b>
Establishes a relationship	4.01	4.08	-1.25	318	0.21
Introduces the medication	3.86	3.97	-1.76	318	0.08
Conducts client assessment	2.81	2.88	-0.83	318	0.41
Discusses med. admin.	4.18	4.61	-8.20	318	0.001
Discusses precautions	3.04	3.33	-4.06	318	0.001
Discusses med. storage	1.35	1.37	-0.74	318	0.46
Facilitates understanding	3.40	3.27	1.58	318	0.11
Interpersonal skills	4.20	4.74	-9.70	318	0.001
Overall quality rating	3.97	4.14	-3.63	318	0.001

<b><u>Mean Item Ratings for OTC or General Health Advice Consultations</u></b>					
<b>Item</b>	<b>Academic Rating</b>	<b>Practitioner Rating</b>	<b>t-value</b>	<b>df</b>	<b>2-tail Signif.</b>
Establishes a relationship	3.94	4.24	-2.50	62	0.15
Client assessment	3.64	3.96	-1.54	62	0.13
Selects suitable product	4.07	4.19	-0.82	62	0.42
Discusses med. admin.	3.55	3.58	-0.21	62	0.84
Non-pharmacologic approaches	2.06	2.22	-1.26	62	0.21
Discusses med. storage	1.94	2.00	-0.26	62	0.79
Follow-up monitoring/advice	3.33	2.95	1.96	62	0.06
Interpersonal skills	4.29	4.77	-3.70	62	0.001
Overall quality rating	3.89	4.00	-0.99	62	0.32

Rating Form. Areas of discrepancy included introducing the medication, conducting a patient assessment, discussing medication administration, discussing any precautions, the pharmacists' interpersonal skills, and the overall technical rating score. While the observed differences are statistically significant, they remain small, making this finding difficult to operationalize from a practical perspective. The differences between the two sets of ratings, however, support the study's assumption that academic and practitioner raters have varying expectations pertaining to communication quality.

#### **4.4.4 Differences in Quality Ratings**

An exploratory analysis was undertaken to determine if the quality of pharmacist-client communication was confounded with other pharmacist variables. There was little evidence that Overall Quality scores differed based on pharmacists' age ( $r=-0.13$ ; NS), number of hours worked per week ( $r=-0.12$ ; NS), year of graduation ( $r=0.12$ ; NS), number of self-reported OTC consultations participated in daily ( $r=-0.04$ ; NS), or even the pace of business within the pharmacy ( $F=0.97$ ; NS). The only variable found to be related to mean quality scores was pharmacists' employment position, where staff pharmacists ( $\bar{x}=3.52$ ) received higher ratings than pharmacy owners ( $\bar{x}=3.10$ ) ( $F=4.44$ ;  $p=0.004$ ).

## **4.5 DISCUSSION**

The average duration of a pharmacist-client interaction in this study was approximately 2.5 minutes, which corresponds with other studies that report pharmacists

spend 2 to 3 minutes with each client. There was no significant difference in the amount of time spent speaking with clients when analyzed according to new prescription, refill prescription, or self-care consultation, nor were differences in duration found based on client age, ethnicity, educational level, or self-reported health status.

The most common prescription products discussed included oral antibiotics and non-steroidal, anti-inflammatory medications. The most common OTC or general health advice consultations observed in this study involved musculoskeletal (sprains and strains), upper respiratory conditions (allergies and common cold), and skin conditions (eczema, rash, and sunburn).

The Overall Quality ratings (Table 4.4) were normally distributed and the scores suggested that 15% of the study consultations were quite poor (average score less than 2.0), and almost 60% of the interactions met or exceeded the professional dialogue requirements established by the College of Pharmacists of BC (1992). In a U.K. study (Smith, Salkind, and Jolly, 1990), the quality of health advice offered by community pharmacists was evaluated by experts using a six-point visual analogue scale anchored at the ends with the headings *poor (1)* and *excellent (6)*. The distribution of resulting technical quality scores was bimodal with consultations rated as being *excellent* or *poor*, thus presenting the possibility that pharmacists comprise two populations. Even though this is an intriguing possibility (substantiated by the ongoing debate regarding pharmacists' predominant role—i.e., business- versus patient-oriented), it was not supported by data collected in this study.

Though largely anecdotal, many pharmacists believe that much of the community pharmacy research that is conducted uses unrealistic standards of quality by failing to

acknowledge the real and/or perceived constraints of community pharmacy practice (e.g., telephones ringing, clients in a hurry, transient clientele, etc.). Thus, the use of paired raters was used to include both perspectives (academic and practitioner) in the rating process. As anticipated, there were small differences in the ratings obtained in this study with the academic raters consistently scoring the consultations lower than the practitioner raters, and thus supporting the earlier proposition that rater expectations play a role in this type of study. The spread in scores, however, is too small to have practical implications. Overall Quality ratings differed by only 0.17 for prescription product consultations and 0.11 for OTC consultations. Studies examining the impact of an educational intervention or making individual assessments regarding professional competency or a program's impact, for example, where small differences such as these may be clinically significant, should take this rater variability into consideration when designing the study.

Despite minor differences in the scores assigned to the skill areas studied, academic and practitioner raters shared agreement on the strengths and weaknesses of the consultations. For prescription product consultations, pharmacists' interpersonal skills, their ability to establish a relationship, and their thoroughness in discussing the administration of the medication were rated highest. The discussion of medication storage and pharmacists' ability to conduct an adequate client assessment were the weakest components of the prescription consultations. For OTC consultations, raters agreed that pharmacists' interpersonal skills, ability to establish a relationship with the client, and ability to select a suitable product were the three strongest areas of pharmacist-client communication. The weakest areas involved discussing the storage of medication, offering non-pharmacologic approaches, and providing follow-up monitoring advice.

For both types of consultations, pharmacists' technical skills were rated lower than their interpersonal skills. Mean scores for technical skills in the non-prescription consultations (scale items 2-7) were 3.09 (academic rating) and 3.15 (practitioner rating). In comparison, the mean scores for interpersonal skill items (items 1 and 8) were rated significantly higher at 4.11 (academic raters) and 4.51 (practitioner raters).

#### **4.6 SUMMARY**

In terms of duration and quality, pharmacists in this study performed well when compared to findings reported in the pharmacy literature from other studies. One potential cause for concern, however, is the rating received by pharmacists on their ability to conduct client assessments and provide follow-up monitoring advice—these skills are considered requisite in the pharmaceutical care process. In this study, pharmacists were afforded the knowledge of being observed, yet remained weak in these areas. Attention to this possible skill deficit may help future efforts to implement pharmaceutical care interventions successfully.

Finally, this study represents only a small portion of the work required to improve pharmacist-client communication. An important next step should involve a qualitative, dyadic exploration of the form and style of pharmacist-client communication using one of the many available patient-provider coding systems.

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## **CHAPTER 5**

### **CLIENT SATISFACTION WITH PHARMACIST-CLIENT COMMUNICATION**

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Chapter 5 reviews the client satisfaction literature and presents descriptive data arising from the Client Satisfaction Rating Scale used in this study. The chapter concludes with a discussion about the study's findings and suggests areas for further research.

#### **5.1 INTRODUCTION**

Client satisfaction has gained widespread popularity as a measure of quality in a variety of health care settings, partly from pressures for public accountability and participation, as well as demands for more "humane" health care (Wolf et al., 1978). Within the health care field, client satisfaction questionnaires have been used to evaluate the structure, process, and outcome of health providers' services and facilities, and to predict clients' use of health services (Ware et al., 1978). This chapter examines client satisfaction with pharmacist-client communication and addresses the following research questions:

1. Are pharmacy clients satisfied with the communication they have with their pharmacist?
2. What, if any, are the sociodemographic correlates of satisfaction with pharmacist-client communication?

## **5.2 LITERATURE REVIEW**

Client satisfaction questionnaires interest administrators and researchers because, once developed, they are relatively cheap to administer, can provide more qualitative information, and tend to be less invasive of a client's privacy than many other outcome methods. The following sections examine the satisfaction construct, review literature within the field, and finally, provide a discussion on the limitations of satisfaction ratings.

### **5.2.1 What is Client Satisfaction?**

Satisfaction is "a complex concept that is related to a number of factors including life style, past experiences, future expectations, and values of both the individual and society" (Carr-Hill, 1992: 237); it can be defined differently by different people, and even differently by the same person over time. Ratings obtained from client satisfaction instruments will reflect differences in health care to an extent, but they are also highly connected to the personal preferences and expectations of clients (Ware et al., 1983; Schommer, 1995). Therefore, client satisfaction ratings are both a measure of care and a measure of the person who provides the rating; inter-personal, intra-personal, and temporal variability makes it unlikely that defining a singular concept of satisfaction will be possible (Carr-Hill, 1992).

Challenges in defining satisfaction resulted in much of the early research focusing on operationalizing the construct. It is acknowledged that client satisfaction is a multidimensional construct and that the dimensions are interrelated. Research by Ware and his colleagues (1983; 1978) suggests that eight distinguishable dimensions constitute the

major sources of satisfaction (or dissatisfaction) with health care: art of care, technical quality of care, accessibility/convenience, finances, physical environment, availability, continuity, and efficacy/outcomes of care.

### **5.2.2 Use of Client Satisfaction Ratings in Community Pharmacy Practice**

The use of client satisfaction ratings as an outcome measure has received relatively little attention in clinical pharmacy practice research (McKeigan, 1996); most of the client satisfaction questionnaires have focused on patronage motives and store image as predictors of a client's choice of pharmacy. Although the dimensions of service (general and professional), location, pharmacist, and price are identified consistently by clients as being important in their pharmacy patronage decision, more current research indicates that the accessibility/convenience and financial dimensions have become less predictive of pharmacy patronage (Meade, 1994; Wiederholt, 1987).

### **5.2.3 Correlates of Client Satisfaction**

The complexity of satisfaction as a construct resulted in an emphasis on possible sociodemographic correlates of client satisfaction. In a large meta-analytic study, Ware (1978) was able to make the following generalizations surrounding sociodemographic variables:

**Age:** Older persons report being more satisfied with the conduct of providers and less satisfied with access to care and outcomes of care.

**Education:** Clients with less education report less satisfaction with medical care in general, and with the conduct of providers.

**Family Size:** Persons in larger families report less satisfaction with access to care.

**Income:** Lower income persons report less satisfaction with access and the outcomes of care.

**Marital Status:** No clear trends.

**Occupation:** Those with higher skill levels report greater satisfaction with medical care.

**Race:** No clear trends.

**Sex:** Women report greater satisfaction than men.

**Social Class:** No clear trends.

More recent research has focused on the aspects of patient-provider communication that result in satisfaction. In a large meta-analysis of patient-provider communication studies, Hall and her colleagues (1988) revealed that client satisfaction was positively correlated with the amount of information provided during a consultation ( $r=0.33$ ), the number of positive statements made ( $r=0.26$ ), the technical competence of the physician ( $r=0.22$ ), the interpersonal competence of the physician ( $r=0.33$ ), and the degree of partnership building (or patient participation) in the consultation ( $r=0.27$ ).

#### **5.2.4. Limitations in the Use of Client Satisfaction Ratings**

The literature reports on five primary issues that limit the utility of client satisfaction ratings: a selectivity bias in respondents, client acquiescent response bias, a lack of certainty on how to handle dissatisfied clients, an incomplete understanding of the satisfaction construct, and finally, the difficulty in separating technical components of care from affective components.

##### *Selectivity Bias in Respondents*

Satisfaction questionnaires are notorious for reporting high levels of satisfaction (Lebow, 1983), and while the high ratings have typically been conceptualized as a weakness of the instrument, they may be due to a selectivity bias in respondents. That is, since satisfaction levels have been significantly related to choice of care, location, and use of specific facilities, it is likely that many clients patronizing a particular pharmacy are already satisfied.

##### *Acquiescent Response Set Bias in Patients*

Acquiescent Response Set Bias (ARS), or the tendency for respondents to give positive responses, is a major factor in many client satisfaction questionnaires. McKeigan and Larson (1989) reported that 63% of their respondents exhibited some degree of ARS in the early phases of their patient satisfaction instrument testing.

### *How to Handle Reports of Dissatisfaction*

Client satisfaction ratings are a mixture of personal preferences, personal expectations, and the quality of care received, consequently researchers (Williams, 1994) have raised the question of “what to do” when ratings come back indicating dissatisfaction with care received. Those administering the questionnaires must decide whether to address the standards and quality of care being offered, or attribute the dissatisfaction to personal preference. Attributing differences in satisfaction to personal preference may be the norm—reports in the literature have criticized researchers for complacently reporting high levels of satisfaction and failing to take action in maximizing client satisfaction (Scott and Smith, 1994).

### *Understanding How Patients Evaluate Quality of Care*

Some researchers have argued the use of client satisfaction questionnaires is premature, in that, client beliefs or evaluations of quality health care may not necessarily be expressed in the form of satisfaction. Thus, a number of researchers have argued that while clients' evaluations are important, we must first gain a clearer understanding of how they evaluate before client opinion can be accurately collated and interpreted (Williams, 1994; Scott and Smith, 1994).

### *Separating Technical Quality of Care from Affective Quality of Care*

An important issue in the use of satisfaction ratings is whether or not clients can evaluate the quality of their health care. Proponents suggest that lay people are very much

capable of this task; however, critics propose that clients first judge the affective care they receive and then generalize to an assessment of technical competence without a knowledge base for such an assessment (DiMatteo and Hays, 1980). DiMatteo and Hays provide three explanations as to why clients' technical care assessments are difficult to separate from their assessments of affective care. First, the measuring instruments used thus far may be inadequate in providing two distinct, reliable, and valid measurements. Second, clients' cognition of these dimensions of care may be inseparable. Finally, these two aspects of care may actually be highly correlated (i.e., technically more competent health care providers may provide better affective care and the technical performance of affectively successful health care providers may be enhanced).

Concurring with Williams (1994), Thompson and Sunöl (1995) propose that patients are passive in their opinions irrespective of the quality of health care and that they do not believe in the legitimacy of their own evaluations. Thus, affective or humanistic components of client satisfaction surveys tend to have little correlation to the actual technical components of care (Cleary and McNeil, 1988, Stewart et al., 1996).

### **5.2.5 Summary**

Despite their limitations, client satisfaction ratings are an integral component of quality assessments. The reliability and validity parameters of the instrument chosen for the assessment will determine the utility of inferences that can be drawn from their use. Previous research has focused on operationalizing the construct of satisfaction and its



sociodemographic correlates, but has been unsuccessful in determining whether client satisfaction ratings is predictive of the technical quality of health care. While the latter issue is examined in Chapter 6, the current chapter examines client satisfaction with pharmacist-client communication and the possible correlates of satisfaction.

### **5.3 METHODS**

The administration of the Client Satisfaction Rating (CSR) scale was part of a larger project examining pharmacist-client communication and the factors that predispose, enable, and reinforce the provision of quality communication. A brief overview of the study is provided below along with the methods that pertain directly to the Client Satisfaction Rating Scale. Additional details can be found in Chapter 2.

#### **5.3.1 Study Overview**

During May and June of 1995, 100 community pharmacists and 786 pharmacy clients participated in a study examining the quality of pharmacist-client communication. Exchanges between pharmacists and their clients were recorded with a wireless microphone, but only clients giving their verbal consent to participate in the study were recorded. Upon completion of their visit with the pharmacist, clients completed a 13-item questionnaire measuring their visit-specific satisfaction with the pharmacist's consultation.

### **5.3.2 Development of the "Client Satisfaction Rating" (CSR) Scale**

The literature proposes that the construct of health care satisfaction is comprised of eight interrelated dimensions (Appendix 5.1). In this study, however, the focus was on satisfaction with pharmacist-client communication in these three dimensions: pharmacists' interpersonal manner, the technical quality of health advice offered, and the perceived efficacy or outcome of the pharmacist-client interaction. The remaining five dimensions (accessibility/convenience, finances, physical environment, availability, continuity of care) were excluded from this study as they are not directly related to the quality of pharmacist-client communication.

A review of the literature revealed a number of available instruments, although at that time (1993), none were specific for measuring satisfaction with pharmacist-client communication. The CSR scale was, therefore, a representation of the 155 items that were retrieved from 13 previously developed instruments that (wholly or in part) pertained to satisfaction with patient-provider communication (Roter, 1977; Wolf et al., 1978; DeMatteo and Hays, 1980; Ware, 1981; Wiederholdt, 1987; Cherkin et al., 1988; Ware and Hays, 1988; McKeigan and Larson, 1989; Weiss and Senf, 1990; Bowman et al., 1992; Robbins et al., 1993; Khayat and Salter, 1994; McLeod et al., 1994).

The final scale contained 11 items measuring three theoretical dimensions of client satisfaction with pharmacist-client communication: technical quality of care, affective or interpersonal quality of care, and the efficacy or outcomes of care received (Table 2.10). Two additional items estimated the degree to which pharmacists may alter their regular performance and the degree to which the sample of participating pharmacists may be biased

relative to the pharmacist population. Seven demographic questions were included to collect information that could describe the sample.

Some of the items used a Likert-type response scale to rate skills that were performed “not at all” (1) to “very much” (5). However, as expectations play a significant role in client satisfaction, other items incorporated an expectation-based response scale where service could vary from being “a lot less than [the client] expected” (1) to service “that is a lot more than [the client] expected” (5). In this study, it was accepted that clients’ satisfaction increases when their expectations are exceeded (Schommer, 1995). All items contained a personal, versus a general, referent, focusing on the individual’s personal experience *that* day and with *that* pharmacist rather than on the experience of people in general or with their previous visits with the pharmacist.

### **5.3.3 Reliability and Validity Parameters of the Scale**

The internal consistency of the CSR Scale, estimated with Cronbach’s alpha, was 0.78 for the full scale. Factor analysis was conducted with items in the CSR scale to examine their construct validity. Principal component analysis with varimax rotation confirmed that three dimensions exist in the CSR scale and account for almost 60% of the total variance. Correlations within the three theoretical dimensions were moderate ranging from 0.14 to 0.49, suggesting that the dimensions are related, but likely not measuring the same attributes.

### **5.3.4 Analyses**

The items in the CSR scale were descriptively explored with the SPSS for Windows (release version 6.0) software package. A composite satisfaction score was calculated by averaging the mean score of the 11 scale items. To investigate possible sociodemographic correlates of client satisfaction, independent sample t-tests, one-way analysis of variance (ANOVA), and Pearson correlations were undertaken as appropriate to the variable type. Due to the large sample size ( $n=786$ ), it was considered important to adopt a conservative *a priori* level of 0.001 to establish statistical significance of the tests, thus potentially minimizing the occurrence of a Type 2 error.

## **5.4 RESULTS**

Three main areas of study results are presented below: 1) a description of the sample, 2) an examination of client satisfaction with pharmacist-client communication, and 3) the correlates of client satisfaction.

### **5.4.1 The Sample**

Seven hundred and eighty-six (786) pharmacy clients participated in the study (participation rate = 85%). The most common reason clients gave for not participating was a lack of time. Almost all of the study's attrition was the result of clients being unable to complete the questionnaire (typically because of time constraints or being unable to return to the pharmacy to pick up the prescription during the study period).

Demographically, the client sample was predominately Caucasian (78.3%) (see Table 2.5). Almost 64% of the sample were female, and about 63% had some form of post-secondary education. The median age of clients participating in the study was 39 years, with a range of 14 to 89 years<sup>6</sup>.

### ***Characteristics of the Pharmacist Sample***

One hundred (100) community pharmacists agreed to participate in the study (participation rate = 14.5%). Apart from two pharmacy chains where consent could not be obtained, there was adequate representation from independent, chain, and franchise pharmacies. The sample appeared to be demographically representative of the population of Lower Mainland pharmacists with respect to age, gender, and years in practice (see Chapter 2).

### ***Characteristics of the Pharmacist-Client Consultations***

Seven hundred and eighty-six (786) consultations were recorded during the seven-week observation period in May and June 1995. Approximately 55% (n=433) of the consultations involved a new prescription, 13% were for a refill prescription, and 19% were directed at over-the-counter medications. An additional 10% of the consultations involved a prescription medication, but it could not be determined from listening to the recording whether the consultations pertained to a new or refill prescription.

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6 Participants under the age of 18 were required to have the consent of an accompanying parent.

#### **5.4.2 Client Satisfaction with Pharmacist-Client Communication**

Item means in the CSR scale were very high, ranging from 3.68 to 4.96 on the 5-point scale (Table 5.1), and suggest that pharmacy clients are very satisfied with their interaction with pharmacists. However, examination of the data suggest that the CSR scale failed to discriminate among the pharmacist-client consultations, as all of the scale items displayed little variance (especially technical quality of care items) and lower end values of the response scale were rarely endorsed by clients (Appendix 5.2).

By ranking the item means and averaging the ranked means within each dimension, pharmacists' technical skills were rated highest, while pharmacists' interpersonal skills were rated lowest (Table 5.2). Specifically, pharmacists were rated highest in their ability to address client questions and to avoid asking questions that were too personal. The amount of time spent with clients, pharmacist respectfulness, and pharmacist friendliness were ranked lowest by clients.

#### **5.4.3 Correlates of Client Satisfaction**

Although most clients reported a high level of satisfaction with the consultation they received, it is beneficial to determine if differences exist in the degree of satisfaction expressed based on sociodemographic, pharmacist, or pharmacy variables. That is, even though the majority of clients expressed satisfaction, it will be assumed that clients providing scores closer to "3" and "4" are less satisfied than clients rating their pharmacists closer to "5."

**Table 5.1 Item Descriptives for the Client Satisfaction Rating Scale**

<b>Item</b>	<b>Mean</b>	<b>Variance</b>	<b>Std error</b>	<b>Std dev</b>
<b>a. Interpersonal Quality of Care</b>				
How respectful was the pharmacist?	3.80	0.63	0.03	0.79
How well did the pharmacist explain things?	3.89	0.67	0.03	0.81
How friendly was the pharmacist?	3.87	0.60	0.03	0.77
Do you feel that the pharmacist spent enough time with you?	3.68	0.58	0.03	0.76
<b>b. Technical Quality of Care</b>				
Did the pharmacist ask questions that were too personal?	4.93	0.11	0.01	0.33
Do you feel like the pharmacist avoided your questions?	4.96	0.07	0.01	0.26
Do you have any doubts about the ability of this pharmacist?	4.89	0.18	0.02	0.43
Do you think this pharmacist could have given you better service?	4.65	0.84	0.03	0.92
<b>c. Efficacy of Care/Outcomes</b>				
How concerned do you think the pharmacist was about your health?	3.93	0.87	0.03	0.93
Did you feel like you could talk about any problem?	4.24	0.90	0.03	0.95
How satisfied were you with the amount of information the pharmacist gave you?	4.65	0.36	0.02	0.60

**Table 5.2 Client Satisfaction Rating Scale Items Ranked According to Mean**

<b>Item</b>	<b>Mean</b>	<b>Rank</b>	<b>Dimension of Care</b>
Didn't avoid questions	4.96	1	Technical quality
Questions were not too personal	4.93	2	Technical quality
Pharmacist's ability	4.89	3	Technical quality
Amount of information given	4.65	4	Technical quality
Could have given better service	4.65	4	Efficacy/Outcomes
Clients believed they could talk about any problem	4.24	6	Interpersonal
Shows concern about health	3.93	7	Efficacy/Outcomes
Explained things well	3.89	8	Technical quality
Friendliness	3.87	9	Interpersonal
Respectfulness	3.80	10	Interpersonal
Time spent by pharmacist	3.68	11	Interpersonal

**Ranking of CSR Dimensions of Client Satisfaction**

1. Technical Quality of Care
2. Efficacy of Care/Outcomes
3. Interpersonal Quality of Care

Table 5.3 displays the variables that were found to be related to client satisfaction, those of the duration of the consultation (longer duration = greater satisfaction), client education (less education = greater satisfaction), and client age (increasing age = greater satisfaction). None of the pharmacist variables examined in this study were related to client satisfaction. Client race was examined and it was found that satisfaction was lower



**Table 5.3 Correlates of Client Satisfaction with Pharmacist-Client Communication**

Description of Variable	Test Statistic	df	Probability	Relationship*
Cleanliness of pharmacy	t=-0.98	727	0.33:NS	---
Pharmacist visibility	F=1.98	732	0.14:NS	---
Duration of consultation	F=6.09	704	<0.001	longer>shorter
Pharmacy pace	F=3.29	738	0.04:NS	---
Prev. met with pharmacist	F=24.97	756	<0.001	Yes > No
Client ethnicity	F=5.62	752	<0.001	Caucasian>Asian
Client education	F=3.63	751	<0.003	less > more
Client's health status	F=0.57	749	0.68:NS	---
Client gender	t=-1.02	754	0.31:NS	---
Client age	r=0.19	---	<0.001	older> younger
Type of consultation	F=0.47	665	0.63:NS	---
Pharmacist gender	t=0.05	765	0.96:NS	---
Pharmacist age	r=<0.001	---	0.99:NS	---

\* The direction of the relationships indicates maximum satisfaction

for all groups other than Caucasian persons; however, because there was an insufficient number of clients within some of the categories, the statistical finding is limited primarily to Asian pharmacy clients.

## 5.5 DISCUSSION

Pharmacy clients in this study rated their interaction with pharmacists very favourably, with mean satisfaction ratings ranging from 3.68 to 4.96 on a 5-point scale. Pharmacists' technical abilities were rated highest, but interpersonal skills were rated lowest. This finding

suggests that technically pharmacists in the study performed well, but that their interpersonal skills may require closer examination.

With regard to the sociodemographic correlates of client satisfaction, the findings of this study are somewhat inconsistent with those reported in the literature. For example, although other studies have reported a difference in satisfaction levels based on client gender, this study was not able to detect such a relationship. Similarly, the literature reports that less educated clients tend to be more dissatisfied with health care—this research indicates that the opposite is true, as a higher level of education was related to greater dissatisfaction with pharmacist-client communication. Other variables such as pharmacist gender, the business pace of the pharmacy, availability of a private counselling area, visibility of the pharmacist, type of consultation, and cleanliness of the pharmacy were found to be unrelated to the level of satisfaction with pharmacist communication as reported by clients in this study.

In support of the literature, on the other hand, the study revealed a significant positive relationship between the duration of the consultation (longer consultations resulting in greater satisfaction) and client age (older clients expressing greater satisfaction than younger). Clients who had previously visited the pharmacy were (unsurprisingly), more likely to report greater satisfaction with their interaction with the pharmacist.

The observational method used in this study introduced the possibility that pharmacists may have altered their regular communication practices, thus limiting the generalizability of these findings. An important assumption in this study is that, even if pharmacists did embellish their regular communication practices, it would likely only effect the interpersonal component of their care and not the technical component. It is interesting,

however, that the Client Satisfaction Rating Scale items that received the lowest mean scores pertained to pharmacists' respectfulness, friendliness, and the time they spent with the client—the skills that the study believed would be most likely subject to an enhanced performance bias. Some possible explanations as to why the interpersonal quality of care offered by pharmacists was rated lower than the technical quality of care offered are provided below.

First, pharmacists' interpersonal skills may actually be weaker than their technical skills. Accepting this hypothesis requires entertaining the notion that if a high degree of performance bias did exist in this study, pharmacists' interpersonal skills are *extremely* weak relative to their technical skills. Second, the scale items measuring the interpersonal quality of care construct may have been more meaningful and provided a more accurate representation of the construct than those included in the technical quality of care construct. That is, the lack of variability in the technical quality of care items relative to the interpersonal quality of care items suggests that technical items may have uniformly been rated high through default. Greater variability in interpersonal quality of care items may mean that clients are more discerning and/or more confident in their evaluations of this area. Finally, pharmacy clients may be unable to evaluate the technical quality of their care, which is an idea supported by the study's finding that a high educational level is related to lower satisfaction. Theoretically, a higher level of education may give the client a greater set of skills that could be used in evaluating technical quality of health care.

The marked difference between the technical and interpersonal ratings of care may also refute a hypothesis presented by researchers who believe that clients are unable to evaluate the technical quality of their care—they propose that clients assess the interpersonal

component of their care and then extend this rating to the technical component. This explanation is not supported by the findings in this study where lower interpersonal ratings (with moderate variability) and high technical ratings (with no variability) were found. If clients make a generalization based on the interpersonal quality of care assessment, then the technical quality of care ratings should have been similarly as high as the interpersonal ratings in this study.

The lack of variability found in the client satisfaction ratings severely limits the utility of this instrument. Despite relying on previously tested scale items, the CSR scale failed to discriminate among consultations, as evidenced by the small amount of variance obtained in scores. With such little variability between respondents, it is difficult to conceive of a use for this type of instrument in either a research (as an outcome measure) or practice (as an internal quality assurance system for pharmacies) setting. One of the reasons for the lack of variability may stem from the study's research question. That is, this study only examined client satisfaction with pharmacist-client communication, other factors possibly accounting for a greater proportion of the variance may have been excluded. For example, if cost, location, and price had been included in the study, client satisfaction ratings may have had a more normal distribution. Although pharmacist-client communication is *becoming* a more important variable in a persons' choice of pharmacy (Meade, 1994), perhaps it was too soon to expect this variable to capture enough of the variance in satisfaction scores.

Furthermore, because many of the satisfaction instruments that were used in pharmacy practice had a marketing approach, most of the items in the CSR scale were obtained from instruments assessing patient-doctor communication. It is likely that the

criteria or expectations surrounding a quality patient-doctor relationship may differ from those of a pharmacist-client relationship. If criteria do differ substantially, it is unlikely that changes in wording (for example from "doctor" to "pharmacist") would ensure the validity of these items (as originally assumed) in client satisfaction questionnaires used with pharmacists.

The limited variability in client responses and weaker ratings received for pharmacists' interpersonal skills suggest that an important next step for this research might include conducting in-depth focus groups with pharmacy clients. This would allow for an examination of the dimensions of satisfaction *within* pharmacist-client communication, and how criteria for a quality pharmacist-client relationship differ from those of a patient-doctor relationship. Attention should be paid to probing areas of dissatisfaction that appeared difficult to capture in this and many other client satisfaction studies.

## **5.6 CONCLUSIONS**

Client satisfaction with patient-provider communication plays a significant role in the current shift to patient-centred care within most health professions. In theory, it is proposed that greater patient participation can enhance patient autonomy (a key component of patient-centred care), and that greater patient participation and autonomy result in a number of positive outcomes, including but not limited to, client satisfaction.

Though client satisfaction ratings have gained popularity as a method of quality assessment, they are frequently criticised on a number of issues that can ultimately limit the validity of inferences drawn from these ratings. This chapter examined visit-specific client

satisfaction with pharmacist-client communication using the Client Satisfaction Rating Scale.

The CSR scale demonstrated adequate measurement properties (with respect to internal consistency and construct validity), but in practice failed to discriminate among pharmacy clients. Clients in this study rated their visit with the pharmacist very high, but client gender, age, and ethnicity were found to be associated with reported levels of satisfaction.

Specifically, clients rated the technical quality of care provided by pharmacists higher than their interpersonal quality of care, leading to three possible conclusions: 1) the CSR scale failed to measure the true attributes of technical quality; 2) the interpersonal care provided by pharmacists is weaker than the technical quality of care offered; or 3) clients are not equipped to evaluate technical quality, but are more confident in evaluating the interpersonal component of their care. Chapter 6 compares the client satisfaction ratings to the experts' ratings of quality to further examine this issue.

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### **Appendix 5.1 Dimensions of Patient Satisfaction (Ware et al., 1978;1983)**

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1. **Art of Care/Interpersonal Manner:** Pertains to the caring shown towards patients. Examples include concern, friendliness, courtesy, disrespect, rudeness.
2. **Technical Quality of Care:** Pertains to the provider conduct, and focuses on the competence of providers and their adherence to high standards of diagnosis and treatment. Positive measures include the ability, accuracy, experience thoroughness, and training of providers as well as the extent to which they avoid mistakes, and clearly explain what is expected of their patients. The negative end of the continuum is defined in terms of defects in equipment and facilities, over prescribing, outdated regimens, and the tendency to take unnecessary risks.
3. **Accessibility/Convenience:** Frequently studied variables include the time and effort required to get an appointment, distance or proximity to site of care, time and effort required to get to the place where care can be obtained, waiting time, hours during which care can be obtained, etc.
4. **Finances:** The ability to pay for services or to arrange for payment is an important factor in the receipt of care. Variables may include the dollar costs of treatment, and flexibility of payment mechanisms.
5. **Physical Environment:** Though typically used to examine inpatient services, the physical environment can be used to assess outpatient services. Variables may include pleasantness of atmosphere, comfort of seating (if any), clarity of signs and directions, clean, neat and orderly facilities, etc.
6. **Availability:** Satisfaction with the availability of health providers and medical service facilities pertains to whether there are enough physicians, nurses and other providers and such facilities as clinics and hospitals in the area.
7. **Continuity of Care:** Is generally defined in terms of regularity of care from the same facility, location, or provider or in terms of availability of a continuous medical record on all visits for care.
8. **Efficacy/Outcomes of Care:** The results of medical care encounters (e.g., helpfulness of medical care providers in improving or maintaining health).

## Appendix 5.2

### Frequency of Response to Items in the Client Satisfaction Rating Scale<sup>7</sup>

#### a. Interpersonal Quality of Care

	% Clients Responding* (n=786)				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Did you feel like you could talk about any problem with the pharmacist?	2.4	4.0	9.4	35.5	48.8
Do you feel that the pharmacist spent enough time with you?	0.3	0.9	45.9	36.7	16.2
How friendly was the pharmacist?	0.1	0.0	36.6	39.5	23.8
How respectful was the pharmacist?	0.1	0.5	40.8	36.2	22.3

#### b. Technical Quality of Care

How well did the pharmacist explain things?	0.3	1.4	33.3	39.1	25.8
Do you have any doubts about the ability of this pharmacist?	92.5	3.6	4.0	0.0	0.0
Do you feel like the pharmacist avoided your questions?	96.8	2.0	1.2	0.0	0.0
Did the pharmacist ask questions that were too personal?	0.0	0.0	2.0	3.2	94.8
How satisfied were you with the amount of information the pharmacist gave you?	0.4	1.1	1.1	28.0	69.5

#### c. Efficacy of Care/Outcomes

How concerned do you think the pharmacist was about your health?	2.3	5.2	18.4	46.0	28.1
Do you think the pharmacist could have given you better service?	83.9	5.1	5.2	3.4	2.4

<sup>7</sup> Raw data displayed. For the remainder of the data analyses scale items were re-coded as necessary so that "5" represented the optimal score.

**CHAPTER 6**  
**PHARMACIST-CLIENT COMMUNICATION:**  
**A STUDY OF QUALITY AND CLIENT SATISFACTION**

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This final chapter brings together the various components outlined in previous chapters and addresses the study's primary research questions. A brief review of the research problem presented in Chapter 1, followed by a summary of the pertinent findings from Chapters 3, 4 and 5 will be provided. A short discussion of the analyses required to answer the study's two primary research questions will be presented followed by the study findings and a subsequent discussion. Implications for practice and possible areas for future research conclude this chapter.

**6.1 REVIEW OF THE RESEARCH PROBLEM**

**6.1.1 Rationale**

An underdeveloped potential and need to extend community pharmacists' role in health promotion and disease prevention exists. It was suggested in Chapter 1 that community-specific health promoting programs, utilizing the community pharmacy and pharmacist as integral resources, could contribute to the improvement of health in British Columbia. Recent political, economic, ideologic, and technological shifts in the health care

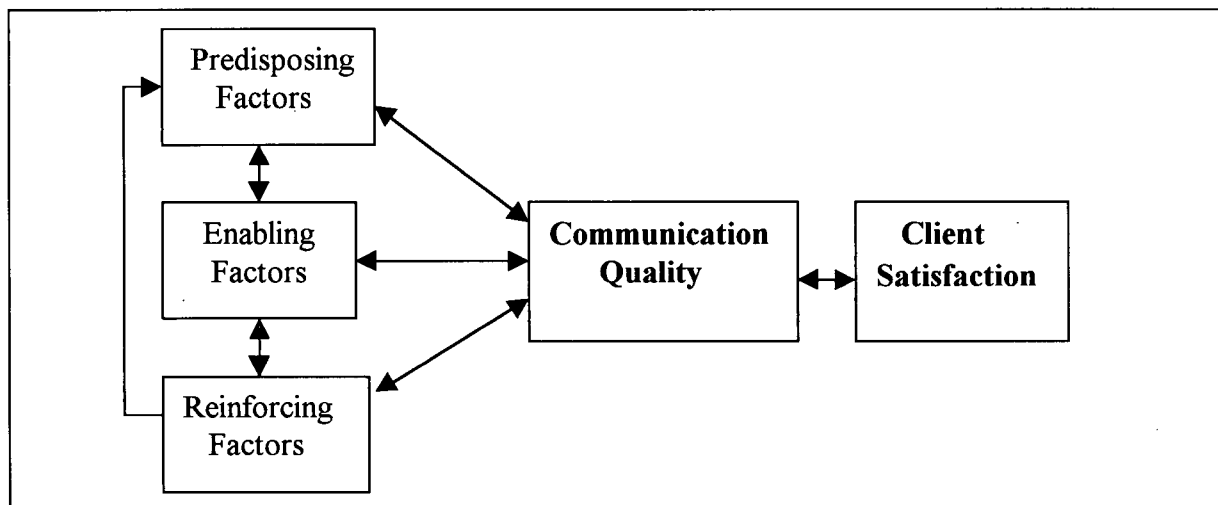
industry, however, have resulted in additional demands on the practice of community pharmacy. Though community pharmacists and pharmacies have the potential to influence the health of a great many people, the literature lacks substantive evidence of pharmacists' current success in attempting, much less accomplishing, this shift in practice. Improving the quality of pharmacy services will require multidimensional interventions. Detailed information pertaining to variables that influence the provision of pharmacy services will be necessary. As the community pharmacist is the most visible, and possibly the most important, variable in the provision of quality pharmacy services, it is necessary to examine the current quality of verbal interactions occurring between pharmacists and clients and the personal, social, and environmental factors that influence this relationship.

The objectives of this study were to: 1) examine the quality of interactions that occur between pharmacists and clients; 2) describe the facilitators and barriers that shape the way pharmacists currently communicate with clients; and, 3) examine the feasibility of using client satisfaction ratings as an outcome measure of quality pharmacist-client communication. The primary research questions investigated in this dissertation were:

1. What are the factors that predispose, enable, and reinforce quality pharmacist-client communication?
2. Are client satisfaction ratings an accurate measure of pharmacist-client communication quality?

### 6.1.2 Conceptual Model of the Study

The model chosen to guide this study was adapted from a widely applied health promotion and health education planning framework known as the PRECEDE-PROCEED model (Green, 1974; Green et al., 1980; Green and Kreuter, 1991; Green and Joab, 1997). A simplified model of the study's research problem is presented in Figure 6.1. The model proposes that the quality of pharmacist-client communication, simply referred to as "communication quality," is influenced by three main categories of behavioural determinants: predisposing factors (the antecedents to behaviour that provide the rationale or motivation for the behaviour); enabling factors (the antecedents to behaviour that allow a motivation to be realized); and reinforcing factors (the factors subsequent to a behaviour that provide the continuing reward or incentive for the behaviour to be repeated and maintained) (Green and



**Figure 6.1 Simplified Conceptual Model of the Study**

Kreuter, 1991). Relationships also exist among the three constructs such that reinforcing factors influence the enabling factors, which in turn affect the predisposing factors; reinforcing factors also directly influence the predisposing factors. The impact (or intermediate) variable in the study is communication quality, while the outcome measure or dependent variable, is client satisfaction with communication.

## **6.2 REVIEW OF STUDY FINDINGS**

In Chapter 2, the development of the study's three main instruments was described. The 40-item Pharmacists' Questionnaire, measuring 11 variables representing three behavioural constructs, assesses the predisposing, enabling and reinforcing factors influencing pharmacist-client communication. The internal consistency of the constructs ranged from 0.72 (for the reinforcing factors construct) to 0.81 (for the enabling factors construct) to 0.87 (for the predisposing factors construct).

The Quality of Communication Scale contained nine items measuring the technical and interpersonal components of pharmacist-client communication. Two slightly different versions of the instrument were developed to accommodate the type of consultation (prescription or non-prescription product); the overall internal consistency of the scales was 0.85 (Table 6.1). Within the construct of communication quality, the interpersonal and technical quality dimensions demonstrated a strong correlation with each other ( $r=0.68$ ), suggesting that the two dimensions may be closely related and that technically competent pharmacists may provide better interpersonal care.

The Client Satisfaction Rating Scale contained 11 items measuring client's reported satisfaction with pharmacist-client communication. A factor analysis (using principal components extraction and varimax rotation) resulted in three factors that accounted for 59.3% of the total variance in client ratings. The resulting factors represented the technical quality of care, the interpersonal quality of care, and the perceived efficacy or outcomes of the care received. Internal consistency reliability coefficients varied from 0.48 (technical quality of care construct) to 0.67 (efficacy or outcome of care) to 0.83 (interpersonal quality of care construct) (Table 6.1).

A descriptive analysis of the Pharmacists' Questionnaire in Chapter 3 revealed that almost all of the study pharmacists reported being highly predisposed to communicate with clients ( $\bar{x} = 4.21 / 5.0$ ). Item means for the enabling ( $\bar{x} = 4.0$ ) and reinforcing ( $\bar{x} = 3.9$ ) variables measured on a five point scale were lower than those of the predisposing factor items.

The Quality of Communication Rating Scale was examined in Chapter 4, where it was reported that the majority (58.5%) of consultations in this study were considered to be satisfactory or better (scoring 4.0 or higher out of 7.0), and were defined as having met or exceeded the minimum pharmacist-client dialogue guidelines established by the College of Pharmacists of B.C. (1992). In general, expert panel members rated pharmacists' interpersonal skills higher than their technical skills (Table 6.2).

Finally, Chapter 5 reported that client satisfaction ratings for pharmacist-client communication were uniformly high ( $\bar{x} = 4.2 / 5.0$ ) and demonstrated very little



variability (Table 6.2). Of the three components of client satisfaction, clients rated pharmacists' technical skills highest ( $\bar{x}=4.85 / 5.0$ ) and interpersonal skills lowest ( $\bar{x} =3.82 / 5.0$ ).

**Table 6.1 Summary Table of Internal Consistency Reliability Coefficients**

<b>Construct</b>	<b># of Items</b>	<b>Alpha</b>	<b>n</b>
<b>A. Pharmacists' Questionnaire</b>			
Predisposing Factors	21	0.87	100
Enabling Factors	12	0.80	100
Reinforcing Factors	7	0.72	100
<b>B. Quality of Communication Rating Scale</b>			
Overall Scale	9	0.83	565
Technical Care	5	0.72	602
Interpersonal Care	3	0.68	583
<b>C. Client Satisfaction Rating Scale</b>			
Interpersonal Quality	4	0.83	758
Efficacy of Care/Outcomes	3	0.67	748
Technical Quality	4	0.48	755
Full Scale	11	0.78	744

**Table 6.2 Summary of the Construct Descriptive Statistics**

<b>Construct</b>	<b>Mean</b>	<b>Std Dev</b>	<b>Variance</b>	<b>Range</b>	<b>n</b>
Predisposing Factors	4.21	0.40	0.16	1.95	98
Enabling Factors	4.01*	0.40	0.16	2.19	98
Reinforcing Factors	3.90*	0.63	0.40	1.14	98
Expert Rating Total Quality	3.45	0.74	0.66	5.10	681
Expert Rating Technical Quality	3.07	0.81	0.55	5.19	696
Expert Rating Interpersonal Quality	3.90	0.66	0.44	5.17	682
Overall Client Satisfaction Rating	4.23	0.50	0.25	2.0	767
Client Rating of Interpersonal Quality	3.82	0.69	0.48	3.0	762
Client Rating of Technical Quality	4.85	0.34	0.12	2.0	764
Client Rating of Efficacy/Outcomes	4.23	0.70	0.49	4.0	762

\* for items scored on a 5-point scale

### 6.3 ANALYSES

Two sets of statistical analyses were required to answer the study's research questions. The first analysis involves a hierarchical multiple regression analysis to determine the factors that predispose, enable, and reinforce quality communication. The set of second analyses involve bivariate Pearson-product correlations between the expert ratings of Overall Quality of communication and the client's overall satisfaction ratings. All analyses were undertaken with the SPSS for Windows (release version 6.0) software package.

The study's conceptual model required that, ideally, the majority of variability in Communication Quality scores would be found between pharmacists. Results from a one-way analysis of variance test revealed that the study's large client-to-pharmacist ratio (765:100) had resulted in a situation where the within-pharmacist variability exceeded the between-pharmacist variability (Table 6.3). Though the average between-pharmacist variability was actually greater than the within-pharmacist variability (mean sum of squares = 1.63 versus 0.38 for within), the pool of variance was greater within-pharmacists. To overcome this situation, a new variable entitled "adjusted Communication Quality," was created to remove the within-pharmacist variability.

This new variable was computed by estimating the variation attributable to personal characteristics of the pharmacists, using the pharmacist as the independent variable and the mean Communication Quality scores as the dependent variable, a hierarchical and stepwise multiple linear regression was performed to answer the study's

**Table 6.3 Partitioning of Variance in Quality of Communication Scores**

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Probability
Between pharmacists	98	159.63	1.63	4.34	<0.001
Within pharmacists	597	224.11	0.38		
TOTAL	695	383.73			

First research question regarding the factors that predispose, enable and reinforce quality communication. The order of entry was reflective of the PRECEDE model, with the predisposing variables being entered in block 1, the enabling factors in block 2, and the reinforcing factors in block 3. The following equation was used to calculate the F-ratio for incremental changes in R-squared:

$$\text{F-ratio} = \frac{\text{increment change in } R^2 \times (n - p - 1)}{q \times (1 - R^2)}$$

Where:

p= # of variables at that point

q= # of independent variables added in at that step

n = sample size

## 6.4 RESULTS

### 6.4.1 What are the Factors that Predispose, Enable and Reinforce Quality Communication Between Pharmacists and Their Clients?

The eleven variables measuring the predisposing, enabling and reinforcing factors accounted for 19% of the variance in pharmacists' Communication Quality scores (Table 6.4). In general, the predisposing variables accounted for 10% of the variance, the enabling factors accounted for 8% of the variance, and the reinforcing factors accounted for 1% . The last column in Table 6.4 provides the F-ratio which in this case, was not significant for any of the steps.

**Table 6.4 Hierarchical Regression Analysis of Factors Influencing the Quality of Pharmacist-Client Communication**

Variable	Simple r	Multiple R	Multiple R <sup>2</sup>	Increment in R <sup>2</sup>	F Ratio
<b>Predisposing Factors</b>					
Adherence Expectations	- .16				
Outcome Expectations	- .15	.32	.10	--	
Attitude	.14				
Job Expectations	< .01				
<b>Enabling Factors</b>					
Resources	- .18				
Time	.15	.42	.18	.08	2.17:NS
Space	- .04				
Self-Efficacy	.06				
<b>Reinforcing Factors</b>					
Rewards	.07				
Organizational Structure	- .01	.43	.19	.01	2.26:NS
Support	- .04				

Table 6.5 presents the results of the simultaneous multiple linear regression predicting the quality of pharmacist-client communication from the 11 predisposing, enabling, and reinforcing variables measured in the Pharmacists' Questionnaire. Pharmacists were more likely to provide a quality consultation when they had more technicians working at their pharmacy (TIME) and when they had a positive attitude toward communicating with clients (ATTITUDE). Three additional variables, available resources, adherence expectations, and outcome expectations, were also predictive of quality pharmacist-client communication, but in an negative direction.

**Table 6.5 Simultaneous Multiple Regression of Factors Influencing Pharmacist-Client Communication**

<b>Independent Variable</b>	<b>Simple r</b>	<b>Beta</b>	<b>t-test</b>
Time	.15	.18	4.45*
Resources	-.18	-.19	-4.91*
Adherence Expectations	-.16	-.17	-4.15*
Job Expectations	.01	-.05	-0.98
Space	-.04	-.01	-.39
Organizational Structure	-.01	-.11	-2.23
Rewards	-.07	.05	-1.26
Attitude	.14	.32	6.73*
Support	-.04	.01	.31
Self-Efficacy	.06	.12	2.46
Outcome Expectations	-.15	-.29	-5.80*

Multiple R, 0.43; R-squared, 0.19; F-ratio, 14.22 ( $p < 0.001$ )

\*  $p < .001$

In addition to the predisposing, enabling, and reinforcing constructs, a number of sociodemographic variables that could not be easily assigned to one of the three behavioural constructs were also proposed to influence quality communication. A final multiple linear regression examined the influence of these variables (Table 6.6) and found that pharmacists who reported providing fewer OTC consultations per day, and worked full-time as a staff pharmacist, were more likely to provide a quality consultation. More recent graduates were also more likely to provide a quality consultation.

**Table 6.6 Simultaneous Multiple Regression of the Sociodemographic Factors Influencing Pharmacist-Client Communication**

<b>Independent Variable</b>	<b>Simple r</b>	<b>Beta</b>	<b>t-test</b>
Pharmacist gender	.14	.06	3.12**
No. of OTC consults/day	-.18	-.19	-5.01**
Year of graduation	-.15	-.35	-2.44*
Employment position	.09	.18	3.82**
No. hrs worked/week	-.02	.19	3.87*
Pharmacist age	.13	-.04	-.27

Multiple R, 0.39; R-squared, 0.16 F-ratio, 13.67 (p<0.001)

\* p<.01, \*\*p<.001

#### 6.4.2 Can Client Satisfaction Ratings Predict the Quality of Pharmacist-Client Communication?

A weak, but statistically significant correlation was found between the mean Client Satisfaction scores and the Total Quality scores (provided by experts) ( $r = 0.14$ ;  $p < 0.001$ ) (Table 6.7). Relationships between the expert Total Quality scores and the three dimensions of client satisfaction were also significant, but again, quite modest (range 0.08 to 0.16). The strongest relationship was found between the expert rating of pharmacists' interpersonal skills and the mean client satisfaction score, where a correlation of 0.16 ( $p < 0.001$ ) was revealed.

**Table 6.7 Correlations Between Client Satisfaction Ratings and Expert Ratings of Communication Quality**

	Expert Ratings		
	Overall Quality	Technical Quality	Interpersonal Quality
Mean Client Satisfaction	.14	.12	.16
Client Rating of Interpersonal	.12	.10	.16
Client rating of Efficacy/Outcomes	.14	.11	.15
Client rating of Technical Quality	.11	.10	.10



## 6.5 DISCUSSION

This study proposed that a combination of predisposing, enabling, and reinforcing factors would influence the quality of pharmacist-client communication. In support of this assertion, a hierarchical multiple regression revealed that these three constructs account for 19% of the variance in pharmacists' Communication Quality scores. The incremental increases in  $R^2$  failed to achieve statistical significance, however, thus limiting the findings from the regression to the sample of pharmacists that participated. Although the PRECEDE framework is not intended to drive the statistical analyses, the results of hierarchical multiple regression confirm its underlying theory. The PRECEDE framework advocates a hierarchical approach to behavioural change by asserting that, prior to behavioural change, an individual must be sufficiently predisposed to engage in the behaviour, and that once the individual has acquired the predisposing factors, the enabling, followed by the reinforcing factors, can be addressed. In this study, the relative amounts of variance accounted for by the three constructs (10% for predisposing, 8% for enabling, and 1% for reinforcing) support this hierarchical principal, in addition to the proposition that quality communication is influenced by a combination of these three variable categories.

Five of the 11 predisposing, enabling, and reinforcing variables examined in this study were found to associated with quality communication between pharmacists and clients. Available time (an enabling variable accounting for a pharmacy's use of pharmacy technicians), and attitude (a predisposing variable pertaining to pharmacists' general beliefs and attitudes toward communicating with clients), were positively related to communication quality. The remaining three variables, available resources (an enabling variable), adherence

expectations (a predisposing variable), and outcome expectations (a predisposing variable) demonstrated inverse relationships with communication quality. The inverse relationship suggests that pharmacists who receive fewer rewards and incentives for good performance are more likely to provide a higher quality consultation. Likewise, the inverse relationships found between communication quality and the outcome and adherence expectations variables, would suggest that pharmacists who believe that their consultation will demonstrate little or no benefit are more likely to provide a quality consultation. After ruling out the possibility of an error in the coding of the data, the significance and interpretation of this finding remains obscure. It is possible that pharmacists in this study may have been applying a triage system to their communication practices. That is, given the time constraints of community pharmacy practice, pharmacists may be targeting their efforts toward clients who are at greatest risk – i.e., those clients who pharmacists believed were least likely to adhere to their regimen and potentially experience a negative outcome. Similarly, although pharmacists generally reported few reinforcements for quality communication, “feeling good about doing one’s job well” (intrinsic reinforcement), was the most frequently reported reward. As discussed earlier, intrinsic reinforcement can be extremely powerful, often overriding the impact of other communication barriers (Perry et al., 1990), and thus, possibly explaining the curious relationships revealed in this study.

The study also proposes that quality pharmacist-client communication can result in a number of clinical, economic, and humanistic outcomes that can eventually improve the quality of life for individuals. The study was restricted to measuring only one of these possible outcomes, client satisfaction, and sought to determine whether client satisfaction

ratings could be used as an outcome measure of pharmacist-client communication. The Client Satisfaction ratings in this study were found to be mildly correlated with the Total Quality ratings provided by the expert panel ( $r=0.14$ ); it is likely, however, that the correlations achieved statistical significance because of the large sample size involved ( $n=765$ ). Client's technical quality ratings consistently demonstrated the least association with the expert's ratings of quality and failed to exceed a correlation coefficient of 0.09. The overall Client Satisfaction ratings were most strongly associated with the interpersonal quality of care ratings provided by the expert panel ( $r=0.16$ ). Together, these findings refute the proposition that the Client Satisfaction Rating Scale can provide valid ratings of technical and interpersonal quality of pharmacist-client communication. Some possible reasons for the lack of association between the client ratings and the expert ratings are provided below.

One explanation may be that the majority of clients are not capable of evaluating the quality of health advice offered by pharmacists. This assertion is supported by evidence in this study that revealed an inverse relationship between client education and satisfaction levels. That is, the more education obtained by a person, the broader the frame of reference or set of skills he/she may have to make such an evaluation.

Alternately, empirical problems in operationalizing the satisfaction constructs may have reduced the study's capacity to measure this relationship. Many of the items used to measure the attributes of technical and interpersonal quality of care in the client satisfaction rating scale may have been irrelevant for pharmacy clients; the majority of items were obtained from instruments not tested on pharmacists and/or were extracted from satisfaction

surveys with more of a patronage approach, examining location, price, waiting time, accessibility and convenience for example.

Finally, the presence of a selection bias in pharmacy clients may have been evident, in that many of the clients frequenting that particular pharmacy were already satisfied. It is also possible, despite the high participation rate of pharmacy clients (85%), that a marked difference in the satisfaction ratings may exist between the participants and non-participants in this study.

#### **6.5.1 Reasons Why the Study Was Unable to Explain More of the Variance in Communication Quality Scores**

Because the proposed relationships in this study failed to explain a meaningful portion of the variance, it is important to focus on why the study did not explain more of the variation in the Communication Quality scores. The remainder of the discussion section examines four plausible explanations, including: 1) an assumed linearity in the relationships; 2) operationalization of the constructs; 3) lack of statistical power; and, 4) homogeneity of the pharmacist sample.

##### *Assumed Linearity of the Relationships*

The study model and analyses undertaken assume that the relationships between the variables are linear. Although the literature review suggested that some of the variables studied may have a curvilinear or u-shaped relationship with communication quality (in

particular, workload and perceived barriers), there exists little evidence in this study of this type of a relationship. Scatter plots of the predisposing, enabling, and reinforcing construct values plotted against Communication Quality scores seemed to suggest neither a linear nor a non-linear relationship.

### *Operationalization of the Constructs*

The research problems examined in this study required that a number of constructs be operationalized and measured. The construct validity of the instruments used may have been another reason for failing to capture more of the variance in the study relationships. Although many of the scale items were extracted from previously tested instruments, not all had been tested on pharmacists and few had been used to evaluate pharmacist-client communication. One example that illustrates how the operationalization of the constructs may have been a limitation, is in the Client Satisfaction Rating Scale. Though overall scores from the CSR Scale were high, the scores for the technical quality of care construct were extremely high ( $\bar{x} = 4.85 / 5.0$ ) with relatively little variance ( $S.D. = 0.12$ ). The CSR Scale's interpersonal quality of care construct by comparison, had a mean score of 3.90 and four times the variance ( $S.D. = 0.48$ ) of items in the technical quality of care construct. A possible explanation for this finding is that the CSR Scale's technical quality of care construct did not contain relevant items, thus preventing pharmacy clients from accurately evaluating the technical aspects of their care. For example, one of the items retrieved from the literature and used in the CSR Scale asks "Did the pharmacist avoid your questions?", and assumes that the client had questions to ask. If the client did not have any questions to ask, it would be difficult for the

pharmacist to be rated low on this item. High satisfaction ratings may have been the consequence of irrelevant items.

### *Lack of Statistical Power*

The hierarchical regression examining the predisposing, enabling, and reinforcing factors related to pharmacists' quality of communication had a sample size of 98 (i.e., the unit of analysis is the pharmacist). Though the predisposing, enabling, and reinforcing constructs accounted for some of the variance (19%), the F-ratio was not significant at either Steps 2 or 3, primarily due to the subject-to-variable ratio being maximized. It is generally accepted in research of this type that a study should strive to use 10 subjects for every variable examined (Kerlinger, 1986), and in this analysis there were 11 variables and 98 useable subjects. Although this subject-to-variable ratio appeared within reason during the study's planning stage, the end result was a lack of statistical power.

It is also possible that an insufficient number of consultations were obtained from each pharmacist, preventing a reliable client rating of communication quality from being obtained. That is, the average number of consultations collected for each pharmacist in this study was 5 to 6 (range 0-20), and this number may be well below what is required. Some studies, for example, have suggested that as many as 30 to 40 consultations are required to obtain an accurate evaluation of interpersonal components of patient-provider interactions (Tamblyn et al., 1994).

### *Homogeneity of the Pharmacist Sample*

It is possible that with only a 14% participation rate from the pharmacist population, the study had recruited a fairly homogenous group of pharmacists who differed on a variety of sociodemographic variables, but not perhaps, in their communication abilities. A homogenous sample of pharmacists would produce little variability in their communication quality ratings and this may possibly have contributed to the lack of variability found in the client satisfaction ratings. The high degree of within-pharmacist variance suggests that pharmacists are not consistent in the quality of their communication and tend to vary from client to client. Though this finding is problematic from a research point of view, it is heartening to document that pharmacists attempt to tailor their approach (with varying degrees of success) to each individual client. The large client-to-pharmacist ratio resulted in a greater pooling of variance within pharmacists, necessitating the creation of the Adjusted Communication Quality variable. Interestingly, while the distribution of the original Communication Quality scores was normal or bell-curved, the distribution of the Adjusted Communication Quality scores was not. A histogram plot of the adjusted variable revealed that, after the within-pharmacist variability had been removed, almost no variability (S.D. = .02) in the communication quality scores existed.

The lack of variability in the Adjusted Communication Quality scores can be interpreted to mean at least two things. First, it raises the possibility that the pharmacist sample was homogenous in that, once the best and worst consultations from each pharmacist had been removed, pharmacists in the sample were about the same – average, possibly arising from a sampling bias. Secondly, it is possible that the population of B.C. pharmacists are very

similar in their communication abilities (once the within-variability is removed), possibly due to professional licensing requirements in the province and/or Canada.

## **6.6 CONCLUSIONS AND AREAS FOR FUTURE RESEARCH**

With the long-term goal of improving the quality, frequency, and content of communication occurring between pharmacists and clients, this study examined pharmacist-client communication using a modified PRECEDE-PROCEED framework. To gain an understanding of the current quality of pharmacist-client communication, researchers visited the workplaces of consenting pharmacists to audiorecord conversations that occurred between pharmacists and clients. Pharmacists completed a questionnaire measuring the factors that predisposed, enabled, and reinforced the provision of quality communication. Participating clients completed a client satisfaction questionnaire to: 1) provide a more comprehensive assessment of communication quality, and 2) determine if client satisfaction ratings were an accurate predictor of pharmacist-client communication quality.

The study found that the predisposing, enabling, and reinforcing factors accounted for 19% of the variance in the Communication Quality scores produced by an expert panel of raters. The F-ratio was not statistically significant for the incremental changes in R-square possibly due to the regression's lack of statistical power, thus limiting the generalizability of the findings beyond this sample of pharmacists. Five of the 11 predisposing, enabling, and reinforcing, variables examined, however, appear to share a unique relationship with the overall quality of communication. Pharmacists' general attitude toward communicating with



their clients, and the number of pharmacy technicians employed at the pharmacy were both positively associated with quality communication. The remaining variables, available resources, adherence expectations, and outcome expectations, were associated with communication quality but in a direction opposite to what may have been anticipated. Sociodemographic variables, categorized as “other” within the study model, found to be related to communication quality included pharmacists’ gender (females more likely to provide a quality consultation) and year of graduation (more recent graduates more likely to provide a quality consultation). Interestingly, the study also found that a quality consultation was more likely to be provided by pharmacists working more hours per week, and reportedly, provide more OTC consultations each day. The positive relationship demonstrated by these two variables may be connected to workload, which has been found to have a curvilinear relationship with pharmacist-client communication. That is, until the workload threshold is obtained, or surpassed, the correlation remains positive.

A weak, but statistically significant correlation was found between the expert ratings of Communication Quality and Client Satisfaction. It is possible that stronger relationships between the study variables exist, but the study was limited by a lack of statistical power in its analyses and difficulties in operationalizing some of the constructs used in the instruments.

#### **6.6.1 Implications for Practice**

The Quality of Communication Rating Scale allowed expert raters to provide a comprehensive rating of pharmacist-client communication on a fairly large sample of

community pharmacists. Results indicated that the assessment skills of pharmacists were often the weakest components of the consultations studied, evidenced not only by lower scores on pertinent Quality of Communication Rating Scale items, but by lower Overall Quality scores for encounters involving non-prescription products or general health concerns. These findings support those of Willison and Muzzin (1995) who noted a similar weakness in the assessment skills of Ontario pharmacists. Client assessment skills are considered paramount to effective pharmacist-client communication, thus requiring that this area be addressed in pharmacists' undergraduate and continuing education. It is proposed that the absence of these assessment skills will remain a barrier to the implementation of pharmaceutical care and to the extension of community pharmacists' role in health promotion.

The Pharmacists' Questionnaire provides valuable information about the factors predisposing, enabling, and reinforcing pharmacist-client communication. This information may be best used to design future programs or interventions that will improve the quality and frequency of pharmacist-client communication. For example, an early initiative aimed at improving the quality, frequency, or duration of pharmacist-client communication may involve the production of educational/promotional literature that refine pharmacist-held attitudes and expectations surrounding pharmacist-client communication. Although most of the participating pharmacists could be described as being highly predisposed to communicate with clients, pharmacists in general reported being less confident that their advice would be followed by clients, and worried that their advice may contradict the advice provided by doctors.

A second-line intervention might focus on enabling pharmacists to provide quality communication. Available time and resources were two of the more important enabling factors related to overall technical quality of communication. Many pharmacists reported that their workplace library often failed to meet their daily communication requirements, and thus an examination of the current library contents of community pharmacies may be warranted. An intervention that will increase the amount of available time a pharmacist has to communicate with clients may be difficult to design; however, pharmacists' attitude toward the time required to provide a good consultation may be a place to begin. Many of the pharmacy faculty raters commented during the rating process that pharmacy students often equate quality communication with its duration. Thus, once in the workplace, many opportunities may be missed if pharmacists believe that they do not have sufficient time to communicate with their clients. The faculty raters expressed a desire for their students to be able listen to some of the consultations in this study that demonstrated that quality communication does not require an inordinate amount of time. Pharmacists could also be trained to recognize more sharply which clients, which drugs, or which medical conditions (or combinations of these three), warrant more or less time.

A final intervention that may improve the quality or frequency of pharmacist-client communication could address the reinforcing factors of quality communication. This study documented the relative absence of reinforcing factors (financial or emotional) in most pharmacies. This type of intervention may be best targeted at the upper management of pharmacies, by outlining the short- and long-term benefits of providing financial incentives, recognition, and feedback for pharmacist performance.

### 6.6.2 Implications for Research

From a research perspective, three main areas need to be addressed. First, do pharmacy clients assess pharmacist-client communication in the same way that they assess patient-doctor communication, and if not, how do the two processes differ? Data collected in this study suggest that there may be minor variations in the criteria used to achieve satisfaction with pharmacist-client communication, but that these differences may be highly attributable to differing expectations. That is, pharmacy clients may be generally satisfied with the service they receive (even in cases where communication with the pharmacist is minimal or non-existent) because that is what they may have come to expect. Clients choose a particular pharmacy that meets their needs best, among the many that they could patronize. The consistently high client ratings of pharmacists' technical abilities and the lower, more variable, client ratings for pharmacists' interpersonal skills suggest that clients may be more confident evaluating the interpersonal characteristics of health care providers. In this study, the client's high ratings for technical quality appeared to be awarded non-discriminatingly to pharmacists. This may have occurred if clients are truly unable to evaluate technical quality, but may also arise from our incomplete understanding of what constitutes technical quality from the client's perspective. Focus groups would be useful to probe these areas. It may be interesting to select a sample of pharmacy clients and allow them to evaluate a random sample of the consultations from this study. This could allow for a determination of how much the selection bias of pharmacy clients alters client satisfaction scores. That is, perhaps clients are capable of evaluating technical quality of pharmacist-client communication, but not on *their* pharmacist who has presumably met their expectations. Clients may become more

critical in their evaluations when the familiarity or proximity of their personal pharmacist or pharmacy is removed.

The second area requiring attention is the criteria used by the experts (in this study, the undergraduate pharmacist educators) to evaluate interpersonal quality of communication. The ratings obtained in this study could have two different conclusions depending on which set of ratings was being looked at. That is, the experts assigned higher scores to the interpersonal components of the consultation ( $\bar{x} = 3.90 / 7.0$ ) while the technical components were scored almost an entire point lower ( $\bar{x} = 3.07 / 7.0$ ). The clients scored the technical component of their care extremely high ( $\bar{x} = 4.85 / 5.0$ ) while the interpersonal component was rated a whole point lower ( $\bar{x} = 3.82 / 5.0$ ) with greater variability. This scoring reversal may suggest that clients have the upper hand, so to speak, in evaluating the interpersonal quality of care, while the experts are more qualified in assessing technical components of care. Interventions that bridge this knowledge gap could be extremely interesting in light of this finding. For example, an intervention that could cue clients with questions to ask their pharmacist may increase client expectations of pharmacists, and possibly improve clients' ability to discriminate among pharmacists. Similarly, a speaker program that would have clients speak to undergraduate pharmacy students could provide future pharmacists an opportunity to learn from client experiences resulting from the incongruent pharmacist-client role expectations. An opportunity such as this could potentially alter the way in which students view the importance of communication skills such as "establishing a relationship" or "facilitating understanding," for example.

Finally, the curious relationships revealed between the study's predisposing, enabling, and reinforcing factors, and communication quality must be addressed. The literature had suggested that these relationships would be positive, yet this study revealed inverse relationships between pharmacists' available resources, adherence expectations, and outcome expectations. Even relationships in the study that were positive were modest in strength, begging the question of "why do pharmacists, who are reportedly predisposed, enabled, and reinforced to provide quality health advice, not substantially differ in the quality of advice they provide?" Focus groups would be helpful to examine the issue more closely and determine to if other compensatory mechanisms are involved. For example, the concepts "professional burnout" or "loss in professional faith" are two phenomena that have been reported in the pharmacy literature that may play a role in this problem, but have remain relatively untouched by this research community.

In conclusion, this prospective, observational study (possibly the first and largest of its kind in Canada) aimed to examine the simultaneous influences of personal, social, and environmental factors shaping quality pharmacist-client communication. It has incorporated many of the ideals of community participation by actively seeking the involvement of the greater pharmacy community throughout the planning, implementation, and analyses stages of this project. In doing so, the study has contributed to the literature by broadening the current knowledge of patient-provider communication and client satisfaction. Importantly, it has examined the quality of pharmacist-client communication within a Canadian context, much of the previous research in this area has been conducted in the U.S. and the U.K., and because of differing health care systems, the professional and social roles of community

pharmacists likely differ, ultimately affecting the quality, content, and frequency of pharmacist-client communication.

## **GLOSSARY**

### **Attitude:**

A relatively constant feeling, predisposition, or set of beliefs directed toward an object, person, or situation (Green and Kreuter, 1991).

### **Behaviour:**

An action that has a specific frequency, duration, and purpose, whether conscious or unconscious (Green and Kreuter, 1991).

### **Belief:**

A statement or proposition, declared or implied, that is emotionally and/or intellectually accepted as true by a person or group (Green and Kreuter, 1991).

### **Community pharmacist:**

A person with qualifications to practice pharmacy within a retail setting.

### **Health promotion:**

"Any planned combination of educational, political, regulatory, and organizational supports for actions and conditions of living conducive to the health of individuals, groups, or communities." (Green and Kreuter, 1991, p.432)

### **Communication:**

The exchange of information for some purpose(s) (Inui and Carter, 1985).

### **Enabling Factors:**

Any characteristic of the environment that facilitates action and any skill or resource required in attaining a specific behaviour (Green and Kreuter, 1992).

### **Patient Counselling:**

"Any oral or written communication from the practitioner relating to the drug product and its use" (Puckett et al., 1978).

### **Pharmaceutical Care:**

A philosophy of practice which is known as the "responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life" (Hepler and Strand, 1989).

### **Pharmacist-Client Communication**

The exchange of information between pharmacists and clients for some purpose.



**Pharmacy literature:**

Examples of journals include (but are not limited to): American Pharmacy, American Journal of Hospital Pharmacy, American Journal of Pharmaceutical Education, Canadian Journal of Hospital Pharmacy, Canadian Pharmaceutical Journal, Contemporary Pharmacy Practice, Drug Intelligence and Clinical Pharmacy (Annals of Pharmacotherapy), International Journal of Pharmacy Practice, International Pharmacy Journal, Journal of the American Pharmaceutical Association, Journal of Pharmaceutical Marketing and Management, Journal of Social and Administrative Pharmacy, Pharmacy Practice.

**Predisposing Factors:**

Any characteristic of a person or population that motivates behaviour prior to the occurrence of the behaviour (Green and Kreuter, 1991).

**Quality:**

Quality health care can be defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes that are consistent with current professional knowledge" (Lohr, 1990). Though typically three characteristics are considered in its assessment (accessibility, acceptability and technical quality), this study's definition of quality is restricted to acceptability and technical quality.

**Reinforcing Factors:**

Any reward or punishment following or anticipated as a consequence of a behaviour, serving to strengthen the motivation for the behaviour after it occurs (Green and Kreuter, 1991).

**Standards:**

The minimum acceptable levels of performance used to judge the quality of professional practice (Green and Lewis, 1986).

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