UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
FACULTY OF HEALTH SCIENCES

QUALITATIVE AND QUANTITATIVE ASSESSMENT OF PATIENT COUNSELING OCCURRING IN A SECTION OF GAUTENG'S COMMUNITY PHARMACIES

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A research report submitted to the faculty of Health sciences, University of the Witwatersrand, Johannesburg, in partial fulfillment of requirements for the degree of Masters of Science in Medicine (Pharmaceutical Affairs)

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DECLARATION

I, Monique Rwabuhungu Mukandabarasa, declare that this research report is my own work. It is being submitted for the Degree of Masters of Science in Medicine (Pharmaceutical Affairs) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

Signature of candidate……

On this ……..day of …… 2007

DEDICATION

To God for sparing my life to see the completion of this research report

ABSTRACT

This study intended to assess the nature and extent of patient counseling practice in a section of Gauteng's community pharmacies and determine what factors have negative impact on the practice. Designed as a random cross-sectional survey, questionnaire-based engaging 60 pharmacists and 179 customers, it provided a "snapshot" of counseling services in the Johannesburg and Pretoria regions between January 2006 and September 2006. The outcomes measures assessed included the percentage of the actual practicing, the form of communication, number of items covered, and number of counseling steps accomplished.

The findings showed about 74% of patients received at least one drug informational item as verbal advice, and an average of 62% of patients received six drug informational items of advice. Supplementary written information was given to 56% of patients some of the time when necessary or by request. The items of advice achieved at high rate were all about drug-instructions for use (>70%). Information about drug action, side effects and non-pharmacological advice occurred at low rate (<50). Significant difference ($p<0.05$) was observed between the two regions regarding the accomplishment of some items but no difference was noted referring to global counseling performance. Younger pharmacists overtook older pharmacists in performing some items (like telling when the medication begins to work: 53% versus 37%). Differences were also noted between pharmacists and other categories of dispensers with pharmacists proffering a higher level of quality and quantity of advice (e.g. counseling points summarized: 59% versus 30%). Workload, pharmacy type and gender were unrelated to current counseling practice.

In conclusion, participating pharmacists showed good knowledge of the SA Gold Standard on counseling and satisfactory performed the counseling points. However, some expressed concern about the difficulty to accomplish some special GPP provisions. Future studies are advice to investigate the implementation of patient counseling from a nationwide sample of community pharmacies if the Professional Body regulating Pharmacy intends mandating counseling.

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GLOSSARY OF TERMINOLOGY

Adherence: is used instead of compliance and refers to whether or not patients take their medication as prescribed. It encompasses the patient's active participation in his or her own healthcare, seeking medical advice, keeping appointments, following recommendations concerning lifestyle, as well as following medical regimens. Medication non-adherence **is** most simply defined as the number of doses not taken or taken incorrectly that jeopardizes the patient's therapeutic outcome. Myers and Midence (1998) consider it to be a 'more neutral, less judgmental term' while Leventhal (1992) says 'it importantly represents a conceptual shift away from patient obedience towards empowering in their health decisions'. The use of the term adherence is more respectful of the important role that a patient plays in the process.

Compliance: from (http://www.uams.edv/compliance/define.htm), on reads 'it is the extent to which a person's behaviour (in term of taking medications, following diets, or executing lifestyle changes) coincides with medical or health advice. In keeping with the medical circumstances, patients should do what they are told by a health professional. This implies that the advice and directions given to the patient are always correct, because the diagnosis and treatment are appropriate, and the prescribed regimen is understandable and achievable.'

Medication: is a drug or another form of medicine that is taken to prevent or to treat an illness.

Medicines consultation: some researchers have questioned if the term counseling can be used to describe the information exchange between pharmacists and customers in the context of community pharmacy (Raynor 1996, Pilnick 2003). According to these researchers, 'what pharmacists mean by counseling is the imparting of information as a one-way process.' In addition, Vainio (2004) pointed out that 'in practice, counseling usually involves repeating verbally the information on the medicine label and giving instructions for complying with drug therapy regimens.' Therefore, Raynor (1996)

suggested the term concerning advice and explanation about medicines should instead be called ***medicines consultation.***

Patient Advice: has been referred to as the transfer of information and advice about recommended actions from the pharmacist to an individual patient or customer. According to Blenkinsopp et al. (1999), 'ideally, advice-giving should be two-way interactive process, where the person is invited to respond and to seek further information should they need it. Advice-giving should be for the specific purpose of enabling the patient or caregiver to cooperate in his or her own care to fullest possible extent under the circumstances.'

Patient counseling: is the provision of advice from the practitioner relating to the drug product that will help patients to use their medications properly. Schommer and Wiederholt (1995) defined the term as 'the provision of verbal or written information (including auxiliary labels) that is the reasoned opinion of a pharmacist, is subjective, and is patient-oriented within a medication-taking context.'

Patient education: 'is instruction and development to impart skills and knowledge, to cause a progressive change in attitudes, behaviour and knowledge of patient (ASHP guidelines 1997).' In the context of pharmacy, the term patient education is used interchangeably with patient counseling.

Pharmaceutical Care: is a new concept introduced in pharmacy practice in 1990s. The goal of pharmaceutical care is the responsible provision of drug therapy to achieve definite outcomes intended to improve a patient's quality of life. With reference to Hepler (1997), this requires a drug therapy system 'directed toward people's quality of life', and one necessary element of such a system is 'dispensing and patient advice'.

Pseudo customer: is a person trained to play the role of a patient to assess whether and how a drug dispenser shall advise about the medication handed to the patient. The term has the similar meaning with mystery shopper (Berger and Eickhoff 2005).

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LIST OF ACRONYMS AND ABBREVIATIONS

ACP - Alberta College of Pharmacists

ASHP - Association Society of Health System Pharmacists

FIP - International Pharmaceutical Federation

GPP - Good Pharmacy Practice

MCC – Medicines Control Council

MDR- Medicines Desk Reference

MIMS- Medical Information Management System

NDP - National Drug Policy

OBRA90 - Omnibus Budget Reconciliation Act of 1990

OTC - Over the Counter

PEP - Practice Enhancement Programme

PEIPB – Prince Edward Island Pharmacy Board

PIA - Patient Interview Assessment

PSA - Pharmacist Self-Assessment

SA - South Africa

SAMF - South African Medicines Formulary

SAPC - South African Pharmacy Council

SPSS – Statistical Package for the Social Sciences

USP - United States Pharmacopoeia

USA –United States of America

WHO - World Health Organization

1 INTRODUCTION AND BACKGROUND INFORMATION

1.1 INTRODUCTION

Health care professionals are accepted as a valid source of health information, and their attitudes and counseling practices have a meaningful impact on the health habits of their patients.

Pharmacists as health professionals should therefore focus comprehensively on the pharmaceutical needs of their patients. In the past, the primary function of a pharmacist was to compound and dispense medicines prescribed by physicians, dentists, or other authorized health care providers. In recent years, however, the responsibilities of pharmacists have broadened substantially, primarily in the areas of direct patient care, patient education and multidisciplinary care initiatives. These activities are called “cognitive services”, “pharmaceutical care” or “medication therapy management” according to the different authors (Morgall et al 1999, Ritchery et al. 1993, Sleath and Campbell 1998). Regardless of the diversity of terms used, a number of studies have shown that effective patient counseling or advice significantly reduce non-adherence, treatment failure, drug hazards and wasted health resources. Provided with the necessary knowledge patients will be empowered to direct their own course to good health.

Patient counseling is essentially about providing patients with accurate information and guidance on their medicines. This process has been identified as crucial in assisting patients to correctly take their medication; thereby resulting in obtaining optimal therapeutic outcomes with less or no side effects (Nichol and Michael 1992; Scott and Wessels 1997; Svarstad et al.2004). With regard to this basic element of patient’s health care, pharmacists have been positioned as key role-players, either in hospitals or in community pharmacies. This implies the pharmacist must, at the hospital level, ensure patients are, before leaving the hospital, aware of what medication they have been prescribed, how to take the medication, what the medication is for, what to expect from

the medication, possible side effects, what to avoid such as sunlight or certain foods, and necessary lifestyle changes such as diet.

However, King et al (1998) found in USA, one out of four patients leave the hospital without knowing what a newly prescribed medication is for and how to administer that medication. They also observed patients discharged from the hospital with three or more newly prescribed drugs have difficulty recalling the basics of their new prescription. Paulino et al. (2004) reported similar problems in the European community. It means the critical point in patient counseling is actually when the patient is discharged into the community. The responsibility for counseling the patient on how to use the drug then falls on the retail pharmacists operating in the communities.

To enforce the pharmacist's responsibility in pharmaceutical care initiatives, new coercive laws have been passed through pharmaceutical legislation in different countries and these compel dispenser pharmacists to offer proper counseling and pharmaceutical services to patients. To accurately prepare pharmacy students towards the accomplishment of this task, pharmacy schools worldwide have also introduced relevant courses in their training curricula including communication skills, pharmaceutical care processes, medication management programmes and physical assessment skills.

The impact of mandatory state regulations and implementation of pharmacy practice courses in lifting the level of counseling practice is unquestionable. Published surveys on the matter indicate however, that the actual level of achievement remains under the expectation in some cases. Various factors, such as pharmacist's attitudes and norms, workload, pharmacy type and stringency of state regulations, have been associated with this deviation from the expected practice.

This study has been undertaken to clarify the extent of patient counseling services in community pharmacies in South Africa, and to identify barriers to implementation of the pharmaceutical care processes endorsed by regulations and undergraduate training.

1.2 BACKGROUND INFORMATION

South Africa introduced its first Medicines Act in 1965 known as -The Medicines Act 101 of 1965; approximately ten years later, -The Pharmacy Act 53 of 1974 was released. The Pharmacy Act 53 of 1974 states ‘as part of the scope of practice of a pharmacist, furnishing of information and advice to any patient with regard to the use of medicine needs to be undertaken, and in order for this to occur, pharmacists need to understand the importance of counseling and what it entails.’ Since 1996, the SA Good Pharmacy Practice (SA GPP) and the National Drug Policy of Safety Drug Use (NDP 1996) reinforced the importance of health counseling. The SA GPP emphasizes that a pharmacist must counsel each patient’s caregiver on matters, which will optimize the medical therapy prescribed. The NDP underlines one can improve health and enhance the outcome of medical treatment by empowering patients to make informed decisions about their medical treatments and take responsibility for their own care. In addition, South African legislation and professional code of conduct reinforce the role of pharmacist more as simple dispenser.

At the academic level, South Africa has a long tradition of pharmaceutical teaching and training since the 1950s. In 1970, the Rhodes University faculty of pharmacy undertook a major revision, involving the extension of the academic course to four years with a one-year apprenticeship at the end of the academic course (www.ru.co.za/Annual Review, 2003). Followed by one year structured internship and an additional year of remunerated community service in the public sector to increase the competency of the new pharmacists, entry level pharmacists are therefore able to act properly with confidence, in the particular area of patient counseling. This has been adopted by all pharmacy schools in SA. Today, in every SA University offering pharmacy programme, a course on Pharmacy Practice is included in the experiential learning curriculum (Kairuz and Naidoo 2000). Pharmacy Practice involves teaching the practical applications, legal and ethical aspects, marketing and business skills, and encompasses pharmacy specific science such as drug supply management, Pharmacoepidemiology, Pharmacovigilance and so on.

Despite this stringent theoretical initiative, little is known about the implementation of patient counseling by pharmacists as health care professionals in South Africa. The current nature and extent of patient counseling in the country is not well documented.

Rhodes University students addressed the issue in 1998 by measuring three variables: [1] Behaviour-identifying the frequency with which each task was carried out; [2] Attitude-rating the perceived importance of each task and [3] Practicality-rating the ease/difficulty of carrying out each task. Based on the results obtained, the investigators stated the GPP guidelines were a starting point but continuing education programmes are necessary to ensure pharmacists comprehend the importance and have the competence to carry them out. They also stated it was vital to ensure pharmacists have a positive attitude and perceive the need to change (Flutter 1998).

Burroughs et al (2004) pointed out 'communication and counseling could be challenging in a multicultural society. South African pharmacists and their patients come from diverse cultural backgrounds, which can affect their perception of health and medication use and how they communicate. Understanding ethnicity and culture can be therefore useful in communication and counseling even though it cannot always accurately predict individual behaviour and should not be used to limit options for diagnosis and treatment.'

The scarcity of data shows it remains necessary to conduct investigations aimed at measuring the current nature and extent of counseling practice to monitor the level of pharmacists' compliance with pharmacy council regulations and measure the actual impact of academic changes. The interventions would also allow identification of factors that may impede satisfactory counseling practice.

The anticipated hypothesis for this study was that SA GPP requirements and academic changes have had a positive impact on patient counseling although the performance may be subjective to some demographic factors.

1.3 STUDY OBJECTIVES

In conceptualizing this research, the following sub-questions were used as guidelines:

1 What is the format of information given to patients in community pharmacies (written form as a printed label, handwritten label, instruction written on the packet, or verbal advice)?
2 What is the prevalence of effective verbal counseling?
3 What is the impact of pharmacy and pharmacist- related factors on the prevalence of patient counseling?
4 Are the national standard scenarios on counseling sufficient and well known by the pharmacists?
5 What kind of assessment-tools do pharmacists need to evaluate and improve the quality of their performance?
6 What would be pragmatic patient-counseling guidelines for community pharmacies in South Africa?

To answer to these questions, four specific objectives emerged:

1. To test the acceptability and feasibility of self-assessment by the community pharmacists in their daily routine.
2. To develop a self-assessment-tool for community pharmacists to evaluate and improve the quality of their performance.
3. To assess the nature and extent of patient counseling in the current environment of community pharmacies.
4. To identify factors that may influence counseling with respect to the dispenser's demographics (age, gender, qualification) and pharmacy characteristics such as location, type and level of activities.

2 LITERATURE REVIEW

This section describes the main GPP guidelines concerning the pharmaceutical care that directed the construction of the assessment tools and reviews the key similar studies about counseling.

2.1 GPP STANDARDS OF PHARMACIST – PATIENT COMMUNICATION

The following lines briefly browse the role of the pharmacist, the general GPP requirements as well as the standards of practice. These standards excerpted from WHO GUIDELINES (www.fip.org/fip/statements) have been found useful in USA (www.napra.org/pdfs/provinces/pe). This study is going to figure out the extent to which similar comprehensive guidelines are used in South Africa to strengthen the counseling role of the community pharmacists. In essence, the mission of pharmacy practice is to provide medications and other health care products and services and help people and the society to make the best use of them. All practicing pharmacists are obliged to ensure that the service they provide to every patient is of appropriate quality and Good Pharmacy Practice is a means of clarifying and meeting that obligation.

2.1.1 The pharmacist's roles

The WHO Consultancy Group summarized the roles of a Pharmacist into the concept of "the seven stars pharmacist" (WHO/PHARM 1997). In this concept, "communicator" is in third position:

1. Care giver -the pharmacist provides caring services.
2. Decision maker -the appropriate, efficacious and cost effective use of resources.
3. Communicator - the pharmacist is in ideal position between physician and patient.
4. Leader -whether the pharmacist finds him/herself in a multidisciplinary team.
5. Manager -the pharmacist must effectively, manage resources (human, physical and fiscal) and information.

6. Life-long-learner -it is no longer possible to learn everything in school in order to practice a career as a pharmacist.
7. Teacher -the pharmacist has a responsibility to assist with the education and training of future generations of pharmacists.

From this concept, the general WHO GPP requirements urge pharmacists to focus all their interventions on the benefits of patients. The following are some of the basic guidelines (PEIPB 2005):

- A pharmacist's first concern in all settings is the welfare of the patients;
- The core of pharmacy activity is the supply of medication and other health care products of assured quality, appropriate information and advice for the patient, and monitoring of the effects of use;
- An integral part of the pharmacist's contribution is the promotion of rational and economic prescribing of appropriate use of medicines;
- The objective of each element of pharmacy service is relevant to the patient, is clearly defined and is effectively communicated to all those involved.

In South Africa, the unit standards for competencies of entry-level pharmacists proposed by the South African Council (Kairuz and Naidoo, 2000) are:

- Organise and control the manufacturing, compounding and packaging of pharmaceutical products;
- Organise the procurement, storage and distribution of pharmaceutical materials and products;
- Dispense and ensure the optimal use of medicines prescribed to the patient;
- Provide pharmacist initiated care to the patient and ensure the optimal use of medicine;
- Provide education and information on health care and medicine;
- Promote community health and provide related information and advice;
- Participate in research to ensure the optimal use of medicine.

2.1.2 Standards of Practice

The items set up as outcomes measures refer to the standards (PEIPB 2005) related to drug information the pharmacist is required to provide the patient with and counseling process steps to run up.

2.1.2.1 What and How to counsel?

The standards require each pharmacist to develop, implement and fulfil plans to monitor the patient's progress towards desired therapy. For this, she or he will routinely and accurately identify the amount and type of education desired or required by patients to maximize their chances of solving or preventing their drug related problem(s). The pharmacist must also routinely and accurately identify the degree of monitoring required by a patient according to the health risks posed by the patient's medication, drug related problems, or disease. In consideration of the above two statements, WHO GPP standards incite pharmacists to appropriately advise and educate patients on the following when dispensing prescription and non-prescription drugs, when counseling patient on discharge medications or when providing recommendations about the management of specific drug related problems:

- Name and class of the drug (e.g. antibiotic, pain reliever);
- Directions for use including education about devices;
- Special storage requirements;
- Common or important drug-interactions;
- The reason and the intended therapeutic response and associated time frames;
- Common or important side effects and associated time frames;
- What the patient should do to monitor his/her therapeutic response or development of side effects;
- Actions the patient should take if the intended therapeutic response is not obtained or side effects develop;
- When appropriate, the actions the pharmacist will undertake to monitor the patient's progress.

Concerning the counseling process, WHO GPP requirements underline the pharmacist-patient interaction has to be friendly and conducted on a one-to-one basis (www.fip.org/fip/statements). A standard checklist of counseling encompasses the following steps:

1. Establish relationship - show interest in patient (verbal and non-verbal);
2. Verify patient's name and prescriber's name;
3. Why the medication is being prescribed (if known) or the medication's use; expected benefits and action;
4. Open the medication packaging and show patient what the medication looks like, or demonstrate use;
5. Do actual counseling e.g.;

- How to take the medication,
- When to take and how long to take the medication,
- What to do if a dose is missed,
- Any special precautions: foods, alcoholic beverages or OTCs to be avoided,
- How the patient will know the medication is working,
- How to store the medication,
- If the prescription can be refilled, and if so, when;

6. Verify the patient's knowledge and understanding;
7. Ask the patient if they have any questions;
8. Document the interaction.

Some of these items have been included in the outcome-measures in the investigational questionnaires.

2.1.2.2 Who and When to counsel?

About prescribed medicines:

Since not all patients are in the same situation, the amount and type of information provided to them should vary based on the patient's needs and practice setting. Ideally,

the pharmacist counsels patients on all new and refill prescriptions. However, if the pharmacist cannot counsel to this extent, it should be defined which patient types, or with which medications the pharmacist will routinely counsel. This will vary depending on the pharmacy clientele and may include:

- Patients receiving more than a specified number of medications;
- Patients known to have visual, hearing or literacy problems;
- Paediatric patients;
- Patients on anticoagulants.

The WHO GPP standards define which patients should always be counseled and which patients only occasionally.

Patients who should always be counseled are:

- Confused patients, and their caregivers;
- Patients who are sight or hearing impaired;
- Patients with poor literacy;
- Patients whose profile shows a change in medications or dosing;
- New patients or those receiving a medication for the first time (transfer prescription);
- Children and parents receiving medication;
- Patients receiving medication with special storage requirements, complicated directions, and significant side effects have to be well counseled.

Patients who should be counseled at certain intervals are:

- Asthmatic patients;
- Diabetic patients;
- Epileptic patients;
- Patients who are mentally ill;
- Patients with skin complaints;
- Patients taking four or more prescribed medications;

- Patients using medical appliances;
- Patients misusing drugs;
- Patients who are terminally ill.

About OVER-THE-COUNTER (OTC) medication:

When providing care to patients involving OTCs, it will be necessary to perform an adequate mini-assessment of the patient's problem, consisting of their approximate age; inquiring about any current medical conditions; current non-prescription drug use; current prescription drug use; inquiring about the symptoms and duration of the complaint and whether the patient has any allergies. The pharmacist should ask whether the patient has consulted a health care professional about the problem. Before advice can be given, the pharmacist (or pharmacist intern or the pharmacist assistant) will need knowledge on the nature, severity and extenuating circumstances surrounding those symptoms.

In essence, the pharmacist must try to obtain initial medication related information. When the pharmacist has assessed the patient and the problem, and feels that a referral is not necessary, he/she may recommend an appropriate product or course of action, including non-drug measures.

2.1.2.3 When to refer or invite patient back?

This issue is addressed by measuring whether the pharmacist tried to obtain initial drug information or whether the patient is invited back without distinction between OTC's and prescribed medicines. The pharmacist should refer the patients for medical attention if:

- Their condition is potentially severe;
- They are uncertain about their symptoms;
- Their self-diagnosis is likely incorrect;
- The condition has not responded to previous appropriate therapy, or
- They have other risk factors that should be assessed.

2.1.2.4 Format in which counseling will be provided

With reference to WHO GPP, the format of counseling should be verbal, and accompanied by written material for the patient to refer to at home. The argument for written material is that patients are often stressed and upset about their illness while waiting for their prescription and may not be able to focus on what the pharmacist is discussing with them. Then, written material reinforces what the pharmacist advises and helps the patient recall what was said. Furthermore, if the patient has forgotten or is unsure of what the pharmacist said, the written material may provide the answer, or stimulate the patient to call the pharmacist.

The written material may provide basic information only, or be quite detailed. Pictograms, such as those used for illustrating how to administer eye drops, are much easier to understand and should supplement a detailed verbal description.

2.1.2.5 Counseling area and confidentiality

On this matter, the patient should be counseled in a semi-private or private area away from other people and distractions, depending on the medication(s). The patient should perceive the counseling area as confidential, secure and conducive to learning. As stipulated in the standards, this helps to ensure that both parties are focused on the discussion, and minimizes interruptions and distractions. It provides an opportunity for patients to ask questions they may be hesitant to ask in public.

In the present study, there is no specific assessment to evaluate the number of pharmacies providing an isolated area for counseling. A question addressing the impact of distractions (e.g. noise, telephone call…) is an indirect measure of the necessity to provide a pharmacy setting with special counseling area.

2.1.2.6 Documentation

The study may show whether this process is applicable or needed in the current environment of SA community pharmacies. The counseling session should be documented. This may be as simple as a check list or as detailed as recorded notes in the patients' medication profile. Any follow-up required should be noted. It should also be recorded if the patient does not wish to be counseled.

2.2 REVIEW OF SIMILAR STUDIES IN DIFFERENT COUNTRIES

The impact of coercive laws in USA:

Programmes aiming to promote and implement pharmaceutical care in community pharmacies were run in the 1990s. Not only do standards of practice from major pharmaceutical professional organisations concur that patient counseling is an essential component of pharmaceutical care, but legal regulations such as the Omnibus Budget Reconciliation Act of 1990 (OBRA 90) mandate pharmacists to offer counseling to patients. The result of these programmes (e.g. Practice Enhancement Programme PEP, Project ImPACT) showed that pharmacists increased communication with patients and other health care professionals and the outcomes of drug therapies improved among targeted patient groups (Blumi et al. 2000; Kassam et al. 1999, Beardsley 2001). This study investigates if similar mandatory provisions are needed in SA.

The nature and extent of counseling in USA community pharmacies:

Svarstad et al. (2004) evaluated in different USA states the nature and extent of patient counseling as well as the effects of state regulation, pharmacist's age and workload on patient counseling provided in community pharmacies. While the age of the responsible pharmacist had no effect on whether the patient talked with the pharmacist or received any verbal information, the pharmacist's age was linked to other counseling measures. For instance, the authors observed patients with a younger responsible pharmacist were more likely to receive some risk information, a greater number of informational items per drug, and some assessment of understanding. Workload was unrelated to the total amount of verbal information or whether some risk information was provided.

In designing the present study questionnaire, some questions were formulated to assess the impact of pharmacy's characteristics and pharmacist's demographics. South Africa is a Republic and not Federal State like USA, so the impact of state regulation is not assessed. Whether similarity or discrepancies exist between USA and SA Pharmacists' behaviour will be highlighted.

Patients' perceptions of drug counseling in Israel:

Shani et al. (2000) evaluated patients' perceptions of drug counseling by health professionals - the prescribing physician and dispensing pharmacist - and determined whether a difference exists in the patient's perception according to his or her place of birth and mother tongue. Their conclusion was 'counseling by pharmacists is a common and well-accepted activity and occurs at a high rate (64.6% for any type of counseling).'

Implementation of patient counseling in Germany:

Berger et al (2005) evaluated the implementation of the pseudo customer methodology to assess the counseling quality in community pharmacies. A pseudo-customer is a trained mystery shopper acting as a patient. They found 98% of the participating pharmacies offered advice, but in 36% of the cases, advice was only given on request. Information on appropriate self-medication was provided on at least one item in 74% of pseudo customer visits, but most of the time the information was not sufficient. Communication skills (non-verbal elements, comprehensibility etc.) were very good or good in 54% of the visits. The performance of this technique will be compared to the pharmacist-self assessment approach used in the present study.

Continuing education and patient counseling:

In Australia, a new technique that combined a pseudo customer methodology and continuing education was developed to change practice behaviour (De Almeida Neto et al. 2001). This training methodology uses the pseudo customer as a change mechanism to shape practice behaviour. The new concept starts with workshop training that is followed by pseudo customer visits. After the visits, participants are given immediate feedback and coaching from an experienced pharmacy educator. This methodology has been

successfully applied e.g. to pharmacists dealing with non-prescription analgesics in Australia and in Switzerland (De Almeida Neto et al. 2001, Sigrist et al. 2002). The results indicate that combining training with pseudo customer visits and immediate feedback supports the learning process and its sustainability.

In the Netherlands, systematic educational intervention was designed to improve patient education activities undertaken by pharmacy technicians (Pronk 2002). The intervention included course work and on-the job training. The participants carried out an inventory of existing practices in their pharmacy and then constructed a plan in order to change these. The intervention led to an increase in structured work with regard to patient education in participating pharmacies.

In SA, nurses or other heath professionals may handle medicines dispensing provided it is under the responsibility of a pharmacist. The patients interviewed in the present study may have had their medicines dispensed by both the pharmacist and another pharmacy staff member. This study was structured to determine difference in counseling performance by various other dispensing health care providers versus pharmacists.

Mode of interaction Pharmacist-Patient:

Studies assessing counseling performance have revealed that counseling is usually based on a monologue model, meaning that the pharmacist gives information to the patients without actively engaging them in the process; the level of information is usually brief, basic and non-individualized (Rutter et al. 2004). This study will assess the extent to which SA pharmacists engage dialogue with their patients by asking them questions and measuring their satisfaction with verbal counseling provided.

Studies in South Africa:

In South African literature, observations of some researchers on patient's knowledge and attitudes are noteworthy.

Dowse and Ehlers (2001) pointed out that an inability to read and understand written medication instructions may be a major contributory factor to non-compliance in certain patient populations, particularly in countries with a high illiteracy rate such as South Africa. The researchers studied later (Dowse and Ehlers 2005) the influence of medicine labels incorporating pictograms on the understanding of instructions and on adherence. A high adherence of greater than 90% was found for 54% of the experimental group, compared with only 2% of the control group. The presence of pictograms was found to contribute positively to both understanding of instructions and adherence.

Myburgh et al (2005) set out a study to assess the influence of race and socio-economic status (SES) on perceived quality of care from health care providers. Both race and SES were significant predictors of levels of satisfaction with the services of the health care provider, after adjusting for gender, age, and type of facility visited. White and high SES respondents were about 1.5 times more likely to report excellent service compared to Black and low SES respondents, respectively. They concluded that in South Africa, race and SES are not synonymous and can no longer be considered reliable proxy indicators of one another. Each has distinct and significant but different degrees of association with patient satisfaction.

Even though this study is not designed to highlight the impact of SES or race on the counseling practice on itself, these two elements may be associated with the patients' perceptions about their relation with the pharmacists. The patient assessment outcomes will partially give answer to this issue.

3 RESEARCH DESIGN AND METHODOLOGY

3.1 STUDY DESIGN

This study was designed as an observational cross-sectional survey, conducted over a nine-month period, between January 2006 and September 2006. This design provided a "snapshot" of the counseling services offered in community pharmacies in a section of Gauteng at a point in time. Interviews with both patients and pharmacists were completed.

Ethics clearance was successfully applied for protocol number M051031. Patients and pharmacists alike provided written informed consent that was completely voluntary (Appendix-1 and -2).

Questionnaires were kept anonymous. To protect pharmacist confidentiality, the names of any pharmacist or pharmacy were not recorded. However, a description of pharmacy type and location, approximate age of the dispensing pharmacist and the level of activity in the pharmacy were noted. Pharmacy staff was divided into two-age scales, young (less than 35 years old) and old (35 or more years old) to accommodate the differences in pharmacy curriculum. Level of activity was estimated as not busy = less than 3 patients waiting at the desk, busy = 3 to 7 patients waiting, very busy= more than 7 patients in the queue.

3.2 SELECTION OF SURVEY SITES AND PARTICIPANTS

3.2.1 Pharmacies selection

Pharmacies were sampled from the Johannesburg and Pretoria regions. The diversity of age, race, gender and patient demographics offered by these two metropolitan areas can provide a suitable sample of the SA population (http://en.wikipedia.org/wiki/Gauteng). Regional representation may be limited by this sample. Participation has been offered to

all community pharmacies randomly selected in Pharmacy info guide South Africa 2003 - A comprehensive directory and quick reference to suppliers, medical aids, pharmacies and general contacts. (Leslie Bassin 2003). At that time, a tentative to obtain an updated list of pharmacies from SAPC failed.

3.2.2 Patients selection

All patients attending the selected pharmacies were eligible for the study. The including criteria were that the patients must give an informed consent to enter the study. The excluding criteria were that patients must not be in hurry.

3.3 CONSTRUCTION AND IMPLEMENTATION OF THE SURVEY

The study was conducted in two phases:

Phase-I: Pharmacist-Self-Assessment (PSA);

Phase-II: Patient- Interview Assessment (PIA).

3.3.1 Selection process

Participation by pharmacists was voluntary upon request. Participating pharmacists were required to complete the self-assessment questionnaire concurrently. Permission was sought from the pharmacist for the researcher to access the patient base for interviews. The pharmacists who agreed with these criteria were selected.

For patients, the selection process was as follows:

a) Pharmacists were contacted and asked to allow interviews of their patients;
b) A pharmacist who agreed was selected;
c) The day of the investigational visit was not communicated to the pharmacist;
d) On the investigational day, the interviewer showed up, randomly selected patients during the day and asked them to participate in the study;
e) Patients, who agreed, signed an informed consent form before giving any information;
f) Each participating patient was helped to complete the questionnaire by the interviewer.

The final sample included 60 pharmacies (19 pharmacies from Pretoria region and 41 pharmacies from Johannesburg region) and 179 patients (62 subjects from Pretoria region and 117 subjects from Johannesburg region). The study sample characteristics are detailed in the results.

3.3.2 Designing the questionnaire instruments

In the literature, different methods are used to evaluate the counseling practice in community pharmacies. These methods are basically focused on mystery shoppers and interview techniques using standardized outcomes measures. The validated published instruments (Azzopardi 2000) inspired the format of the present investigational questionnaires. Some items were drawn from the "Confidential Inspection Questionnaire to establish the nature, extent and standard of pharmaceutical services in community pharmacies" (www.pharmacouncil.co.za/documents2004). This SAPC questionnaire includes among others the following items:

- The pharmacy has copies of electronic access to: the latest edition of MIMS, the latest edition of either the MDR or SAMF, a copy of Pharmacy Act,1974 …
- Dispensed medicine is labelled as required in Regulation 8(4) of Act 101 of 1965;
- The pharmacist obtains all the relevant patient information before dispensing the prescription;
- The pharmacist gives advice to the patient or care-giver after the prescription has been dispensed;
- Support aids are used when supplying advice (pamphlets information leaflets, manufactures reclaim inserts, computer printouts, visual adds e.g. diagrams);
- How many pharmacists-interns are undergoing practical training in the pharmacy?
- How many registered pharmacists assistants (post-basic) work in the pharmacy?
- Who hands the medicines to the patient or caregiver?
- Generic substitution is applied in accordance with Section 22(F) of Act 101 of 1965.

3.3.2.1 Pharmacist Self-Assessment Instrument

The questionnaires were designed to be self-completed. One form must be completed for every pharmacy. The Pharmacy Superintendent or Proprietor Pharmacist was empowered for the accurate completion of the questionnaire. The questionnaires were structured in such way to allow getting outcomes based on the study objectives. They included a section for the identity of the pharmacy and four sections containing closed-questions related to:

- Measurement of the current nature and extent of counseling;
- The actual feasibility of counseling in daily routine;
- The communication barriers;
- The knowledge of pharmacists about GPP Gold standard.

There was a further open-section at the end for any additional information or comments.

The main outcome measures of the actual counseling consisted of a set of twenty items related to drug information and to counseling process steps (pharmacist behaviour). Drug information items as well as pharmacist's behavioural points were documented to assess whether any or all of the mentioned events actually occurred. With reference to the latest five patients, every pharmacist was asked to tell in how many cases he/she did actually accomplish each of the events mentioned. A score of zero meant the event did not happen; a score of five meant the pharmacist totally accomplished the event in all his/her five latest patients.

Assessing the nature of counseling in the current environment of community pharmacies encompassed the format of counseling and the type of information often given. Assessing the extent of counseling implicated measuring the frequency with which pharmacists provide any verbal or written advice, the frequency with which each specific advice is carried out and the frequency with which pharmacists achieved the counseling process steps on a one-to-one basis.

The evaluation of factors that may influence counseling was achieved by rating the importance of communication barriers related to pharmacist and patient; identifying the outcomes controlled by the pharmacy characteristics and dispenser's demographics; verifying the availability of SA GPP guidelines in the pharmacy and rating the difficulty to accomplish specific requirements in dealing with impaired persons.

The acceptability and feasibility of self-assessment by the community pharmacists in their daily routine was based upon the meaningfulness of the results obtained. Respondents' suggestions, remarks and comments were expected to describe attitudes towards counseling practice and find out pragmatic guidelines for community pharmacies in SA.

3.3.2.2 Patient Interview Assessment Instrument

The interview was aimed at identifying how well and to what extent patients value the performance of pharmacist's counseling and determining whether their needs are met. It was crucial that the patient interview be strategically developed and conscientiously conducted. To seek detailed responses, the questionnaire included both closed and open-ended questions. The questionnaire was strictly restricted to collecting information received and the patient's perception of the pharmacist's role in counseling to ensure that constraints of the ethical issues were abided by. The same twenty items were also administered to the patients in order to check whether the events were achieved by the dispenser. In order to calculate the percentage of patients where the process was completely, partially or not at all achieved, each item was coded 1 or 0 when it had been or not achieved.

3.3.3 Validation process

The first drafts of the questionnaires were sent by mail to a small pilot group of 25 pharmacists in order to provide an estimate of the time needed for responding and the validity of random variables chosen as outcomes measures. Eleven questionnaires were

sent back within two weeks but only seven were valid. The feedback allowed removing the perceived ambiguities in each question. Then, the validated questionnaires were ready for investigation and the mailing technique was abandoned in favour of direct visits.

Investigational visits took place in pharmacies with the permission from the respective responsible persons or managers. Pharmacists were assessed on their daily practice of counseling and on supplementary needs to successfully accomplish their counseling task. Pharmacist responses could only be validated against the patients' responses in the respective pharmacies. Data were analyzed quantitatively and qualitatively.

Quantitative analysis

For each study phase, the results from individuals were calculated. Categorical variables were graded to allow quantitative analysis. Outcomes measures scores were constructed to quantify the extent to which any event occurred. The prevalence of counseling and rates to which the events tested occurred were expressed as percentage. Descriptive statistics such as frequency, mean, and cross-tabulation were calculated using SPSS 11.5 software package (SPSS Inc.2006) to summarize the final data. Chi-square and ANOVA tests had been considered to examine the relationships between predictors and outcome measures (Petrie and Sabin 2005). A probability of 5% or less ($p \leq 0.05$) was considered significant. Frequency distribution and relative percentage distribution are presented in tables and charts using Microsoft Excel 2003.

Qualitative analysis

The qualitative outcomes were based on the open-ended questions administered to both the pharmacists and the patients. Respondents' comments, remarks and suggestions recorded were interpreted using constant comparative analysis technique. From this technique, opinions from pharmacists and patients were challenged.

4 PHASE-I STUDY QUANTITATIVE RESULTS

4.1 ACCEPTABILITY AND FEASIBILITY OF SELF ASSESSMENT

Table-1 shows that among 83 pharmacies randomly selected, fifteen pharmacists contacted did not agree to participate. Considering the 83 cases as 100%, the refusal rate accounts for about 19.3% and this gave the rate of acceptability of about 80.7%. Of 67 questionnaires distributed, 60 were given back completed on time and this gave 72.3% as the rate of feasibility.

Table 1 Percentage of pharmacists who did self-assessment in daily routine

	Johannesburg	**Pretoria**	**Total**	**%**
Pharmacists contacted	**55**	**28**	**83**	**100.0**
Refusal to participate	9	7	15	
Acceptability	**46**	**21**	**67**	**80.7**
No feedback	5	2	9	
Feasibility	**41**	**19**	**60**	**72.3**

4.2 STUDY SAMPLE CHARACTERISTICS

Table 2 shows the final sample analysed including 41 pharmacists (68.3%) from Johannesburg region and 19 pharmacists (31.7%) from Pretoria region.

Four types of pharmacy-settings were identified, 34 independent owned pharmacies, 11 chain-pharmacies, 8 clinic settings and 7 linked-pharmacies giving a magnitude of 56.7 %, 18.3 %, 13.3 % and 11.67 % respectively. This categorization was made according to Pharmacy Info Guide South Africa - A comprehensive directory and quick reference to suppliers, medical aids, pharmacies and general contacts (Leslie Bassin 2003).
Independent pharmacy is a family business; chain-pharmacies operate inside supermarkets and are large group businesses; clinic-pharmacies are connected to private clinics; linked-pharmacies are small group owned pharmacies.

Concerning the level of activities, 6 (10%) pharmacies had less than 3 patients in the queue; 49 (81.7%) pharmacies had between 3 and 7 patients in the queue whilst 5 (8.7%) pharmacies had more than 7 patients queuing. The question may arise of how many pharmacists are needed on duty.

Table 2 Frequency distribution of pharmacies characteristics

Location		**Frequency**	**Percent**
	Johannesburg	41	68.3
	Pretoria	19	31.7
	Total	60	100.0
Type			
	Clinic	8	13.3
	Independent	34	56.7
	Chain	11	18.3
	Linked	7	11.7
	Total	60	100.0
Workload level			
	Not busy	6	10.0
	Busy	49	81.7
	Very busy	5	8.3
	Total	60	100.0

Table 3 indicates that the random selection included 31 young pharmacists (<35 years) and 29 older pharmacists (35 years or more). Among them, 38 were males (63.3%) and 22 females (36.7%). The gender odd ratio tended to be 1.7 in favour of males in this random selection. This situation may be due to willingness from males to participate or to the fact that only one pharmacist per pharmacy was allowed to participate even though there were many.

Apart from the pharmacists themselves, there were 22 (36.7%) pharmacist-assistants, 6 (10%) pharmacist-interns and 4 (6.7%) other staff members identified as dispensers of medicines in the selected pharmacies.

Table 3 Frequency distribution of dispensers by age, gender and qualification (N=60)

	Frequency (N=60)	Percentage
Pharmacist's age		
Young (< 35 years old)	31	51.7
Old (>35 years old)	29	48.3
Pharmacist's gender		
Male	38	63.3
Female	22	36.7
Dispenser's categories		
Pharmacist Assistants (basic and post-basic)	22	36.7
Pharmacist Interns	6	10.0
Other staff members	4	6.7

Legally, the SA Medicines Regulatory Authority (SAPC 1997) authorises all three categories - pharmacist assistant, pharmacist intern and other agreed health personnel- to dispense medicines under the supervision of the pharmacist responsible. The accountability of everyone is defined with regard to what should be done and who should dispense what medicine. This study was not designed to identify task-attribution; it was assumed that the pharmacists are aware of the SAPC standards. Nevertheless, among the suggestions made by pharmacists to improve the counseling process, a need for more pharmacists and less pharmacist assistants raised.

4.3 NATURE AND EXTENT OF COUNSELING PRACTICE

4.3.1 How often pharmacists would counsel patients in daily routine?

Table 4 shows about 95% of pharmacists said they would do counseling spontaneously each time they dispense any drug. About 11.7% of pharmacists would do it only when if the patient seeks information and 6.7% only for prescribed drugs.

Table 4 Frequency with which pharmacists expect to counsel patients

How often do you give counseling to your patient?	N(60)	%
Spontaneously each time I dispense any drug	57	95.0
Only for prescribed drugs	4	6.7
When if the patient seeks information	7	11.7

4.3.2 When do pharmacists give supplementary written advice?

Table 5 indicates that, when pharmacists were questioned about how often they give supplementary written information, only 13.6% said doing it always while 55.9% contended doing it some of the time and not always. About 23.7% prefer doing it only if the patient asks for it; 6.8% of pharmacists would do it only if the leaflet is not provided with the container.

Table 5 Frequency with which pharmacists give supplementary written information

How often do you give supplementary written information?	Frequency	Percent	Valid Percent
Always	8	13.3	13.6
Some of the time	33	55.0	55.9
If the leaflet is not provided	4	6.7	6.8
If the patient asks for it	14	23.3	23.7
Total	59	98.3	100.0
Missing System	1	1.7	
Total	60	100.0	

4.3.3 How do pharmacists assess patients' understanding and satisfaction?

As shown in Table 6, when the pharmacists want to assess the understanding of advice given to their patients, 70% ask them if they understood what was said; 33.3% question patients, but only 26.7% ask patients to relate the information back to them.

Table 6 Assessment of patient understanding and satisfaction with verbal advice

	N(60)	**%**
How do you assess patient understanding of the advice?		
I question them	20	33.3
I ask them if they understood my counseling	42	70.0
I ask them to relate the information back to me	16	26.7
How do you assess patients' satisfaction?		
I ask them	34	56.7
I run surveys	1	1.7
I have a feedback box in the pharmacy	5	8.3
None of the above	20	33.3

To assess patients' satisfaction with their verbal counseling, about 56.7% of pharmacists would just ask the patients about their satisfaction; 8.3% have a feedback box in the pharmacy and only one pharmacist said he might run surveys. About 33.3% of pharmacists likely do not assess the satisfaction of their patients in their daily routine or would do it by other means.

4.3.4 Type and extent of information related to use of the medication

Table 7 summarises the type and extent of drug information the pharmacists used to give their patients. It appears that the focus was on how to take medicines (96.7%) whilst little was accorded to what to do with the unused medicine at the end of the treatment (50%) and worst on what to do if the medicine is lost or spoiled (13.3%). Care should be taken that the duration of validity is limited for all medicines and that is worth being related to the patient as often as possible, if not always.

Table 7 Type and extent of information related to use of medications

Information about the use of medications	Pharmacists	
	N	%
1. How to take the medication	58	96.7
2. How long should the medication be taken	54	90.0
3. How should the medication be stored	50	83.3
4. Why the medication should be taken in whole course	49	81.7
5. Anticipated adverse reactions associated with the medicines	47	78.3
6. What is the therapeutic objective of the medication	47	78.3
7. Contra-indications of medication	42	70.0
8. What is the maximal dose	36	60.0
9. What can happen if the medication is not properly or not used at all	35	58.3
10. When not to take the medication	32	53.3
11. What to do with the unused medicine at the end of the treatment	30	50.0
12. How long before the medication takes effect	32	53.3
13. What to do if the medicine is lost or spoiled	8	13.3

4.3.5 Type and extent of information related to side effects

Table 8 shows that when the advice is about side effects, the pharmacists will often focus on the kind of side effects which may occur (91.7%) and less often on the seriousness (51.7%) or duration of the side effects (21.7%). About 55% of pharmacists would routinely advise patients in what case to consult the doctor or the pharmacist before a next appointment.

Table 8 Type and extent of information related to side effects of medications

Information about the side effects	Pharmacists	
	N	%
1. What kind of side effects may occur	55	91.7
2. What intervention can patients take to alleviate side effects	36	60.0
3. What is the level of seriousness of a side effect	31	51.7
4. What symptoms will disappear and what symptoms will persist	21	35.0
5. How to recognize side effects	19	31.7
6. For how long side effects persist	13	21.7
7. In what case to consult the doctor or the pharmacist before a next appointment	33	55.0

4.3.6 Actual achievement rate of drug informational items

The extent to which counseling items were actually achieved was based on scores realized by pharmacists in their last five patients (0-5). When all five patients were given an item, this item was totally achieved. When all items were achieved in a patient, the process was completely achieved.

Table 9 shows that information about directions for use was given to 97.2% of patients. At the other extreme, advice on missing a dose was given to only 23% of patients. Other items were covered in the range between 31.4% and 88.6%. On average about 58.4% of patients were counseled on at least one item.

Table 9 Frequency of patients who received advice on drug information items

Percentage of patients actually counseled among the 5 last received by each pharmacist. N=valid number of pharmacists per item; Nx5=maximum number of patients expected; Nobs=number of patients actually counseled per item.				
DRUG INFORMATION ITEMS	**N**	**Nx5**	**Nobs**	**%**
1.Directions for use	58	290	282	97.2
2.Dosage regimen and duration of consumption	58	290	257	88.6
3.Name, class and purpose of the medication	57	285	236	82.8
4.Storage recommendations	58	290	174	60.0
5.Side effect profile (management and prevention)	57	285	154	54.0
6.Precautions to be aware of	57	285	152	53.4
7. Drug interactions with other drugs, with food, etc	57	285	144	50.6
8.When does the medication begin to work and benefits	56	280	114	40.8
9.Non pharmacological intervention	56	280	85	31.4
10.Advise on missing a dose	55	275	63	23.0
Total		**2845**	**1661**	**58.4**

4.3.7 Actual achievement rate of counseling behavioural items

As shown in Table 10, almost 98.9% of dispensers greeted patients and 96.2% thoroughly reviewed the medication script. However, only 28.9% asked patients their consent for counseling. About 75.4% of dispensers offered generics for substitution. On average, at least one behavioural item was achieved in 67% of patients.

Table 10 Frequency distribution of patients to whom behavioural items were achieved

Percentage of patients actually counseled among the 5 last received by each pharmacist. N=valid number of pharmacists per item; Nx5=maximum number of patients expected; Nobs=number of patients actually counseled per item.				
PHARMACIST BEHAVIOURAL ITEMS	**N**	**Nx5**	**Nobs**	**%**
1.Dispenser reviewed the script thoroughly	58	290	287	98.9
2.Dispenser greeted patient and established comfort level	54	270	279	96.2
3.Dispenser did actual counseling on the medication offered	57	285	248	88.6
4.Dispenser introduced generics for substitution	54	270	215	75.4
5.Clarification of any uncertainties/	55	275	189	68.8
6.Warning about consuming other drugs simultaneously	57	285	166	58.2
7.Patient invited back	56	280	155	55.4
8.Dispenser tried to obtain initial drug related information	54	270	131	48.5
9.Counseling points summarized	55	275	122	44.4
10.Dispenser asked patient a consent for counseling	58	290	78	28.9
Mean		**2790**	**1870**	**67.0**

4.4 IDENTIFICATION OF FACTORS INFLUENCING COUNSELING

A set of factors have been tested in order to weigh their impact on the quality and the extent of counseling. The deterministic factors were clustered as: Barriers in communicating with patients, Pharmacist's knowledge of Gold Standard, Pharmacist's demographics, Pharmacy characteristics and Patient's behaviour.

4.4.1 Impact of counseling barriers

Each pharmacist on a 5-point grade-scale (1=0%, 2=25%, 3=50%, 4=75%, and 5=100%) appreciated the impact of counseling barriers related to pharmacists and patients.
In order to simplify the interpretation, the impact was graded by the mean percentage as shown in Table-11 below. A grade equal or above 50% means the outcome measure has important negative impact on counseling.

The important counseling barriers were: patients request not to be counseled because they already know about the medication (51.4%) and pharmacist lack of time (50%).

Table 11 Rated barriers on counseling performance

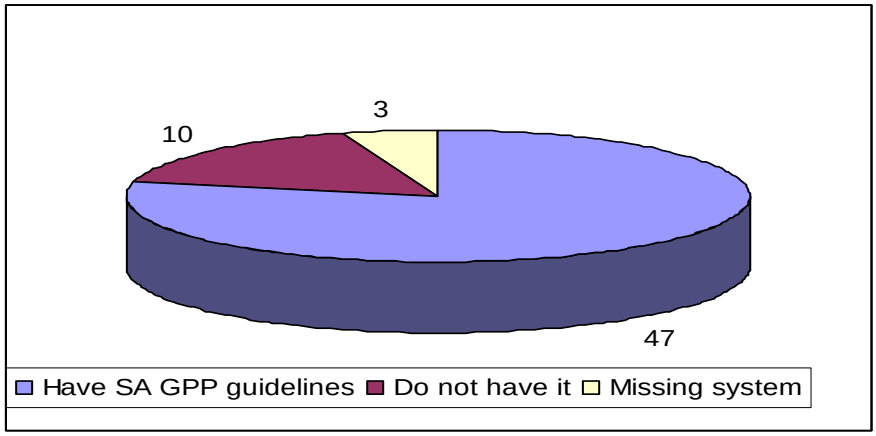
Type of barrier	N	Mean %	SD
Pharmacist-lack of time	56	**50.0**	27.4
Pharmacist-lack of staff	52	43.3	23.3
Pharmacist-distractions such as noise, phone call, etc.	51	43.1	21.8
Pharmacist-lack of experience with patient counselling	43	32.6	25.9
Patients are in a hurry	47	47.9	24.9
Patients request not to be counseled because they already know about the medication	53	**51.4**	26.6
Patients have hearing or language problems	52	44.7	26.8
Patients have elderly related cognitive problems	44	33.0	22.1

4.4.2 Knowledge of SA GPP Gold Standard

One of the preoccupations was then to ascertain whether the national Gold Standard of counseling embodied in SA GPP is sufficient and well known to the pharmacists and also to rate the difficulty of accomplishing the requirements.

Figure-1 shows the number of pharmacists keeping a copy of SA GPP latest edition. To the question assessing the availability of a copy of SA GPP, 47 pharmacists affirmed keeping a copy in the pharmacy, 10 pharmacists did not have it and 3 did not answer the question. The evidence of awareness about GPP guidelines was then 78.3%.

Figure 1 Pharmacists keeping a copy of SA GPP



Among the 10 pharmacists who did not keep a copy of SA GPP, four declared they had never heard of the SA GPP; three said, “They were not supplied with”, and one declared it was not necessary at the time then, did not follow up on recommendations. This finding showed there were about 23% of community pharmacists who were not yet aware of the existence of SA GPP guidelines. It means the counseling they were applying was not inspired or directed by the Gold Standard but by the experience. Nobody can comply with an unknown rule. Therefore, the ignorance is a predictor of bad counseling.

4.4.3 Difficulty to comply with special SA GPP requirements

It appeared from the assessment that some GPP requirements are easy to comply with (rate <50% of difficulty) whilst others are much more difficult to execute (rate >50%). As shown in Table 12 below, the mean grade of difficulty is less than 50% for all GPP general considerations meaning an easily accomplishment.

Table 12 Mean rates of difficulty to accomplish special SA GPP requirements

	N	Mean %	SD
GPP general considerations in communicating with the patient			
Treating the patient with respect and interest, caring and willingness to help	49	41.3	40.4
Having adequate and correct knowledge about the subject under discussion	57	42.1	40.7
Being relaxed and attentive by maintaining eye contact with patient	58	36.6	38.7
Being sensitive towards the patients need for privacy and confidentiality	59	44.5	38.6
Asking open-ended questions and listening and observing without interrupting	58	44.4	36.3
GPP special considerations in communicating with the elderly			
Focusing on their abilities, rather than disabilities	51	**50.5**	35.5
Assessing them individually and reassess often	53	**52.8**	33.9
If the elderly are unable to give information, using family or caregivers as resources	52	**52.4**	32.9
Ensuring that the disabled should have easy access and seating	51	**51.0**	38.7
GPP approaches based on special need for the hearing impaired			
Eliminating as much background noise as possible	48	45.8	31.9
Augmenting oral communication with other methods (writing, pictures, signs…	53	**53.3**	35.0
Facing the person directly to achieve eye contact and enable lip reading, speak slowly and clearly without shouting, and avoid unnecessary details	48	**50.5**	39.4
Communicating with visually impaired			
For printed communication, use black printing with larger fronts on white paper	45	**57.2**	33.1
Taking position what needs attention so it's at the centre of the visual field	48	49.5	38.1
GPP approaches based on special need for cognitive impairment			
Gaining the patient's attention, and address one topic at time by giving simple and relevant information	45	**51.7**	39.0
Upgrading the patient communication facilities (e.g. counseling booths)	43	**55.2**	38.4

In respect to communicating with the elderly, about all requirements are difficult to accomplish. In hearing impaired patients, it is easier to eliminate as much background noise more possible (45.8%) than augmenting oral communication with other methods (writing, pictures, signs…) or facing the person directly to achieve eye contact and speaking slowly without shouting (53.3% and 50.2%). In dealing with the vision impaired, the provision about using black printing with larger fronts on white paper is not so easy to accomplish (57.2%). In dealing with the cognitively impaired, pharmacists found it difficult to upgrade the patient communication facilities and gain the patient's attention by addressing one topic at a time.

The meaning of this outcome is that the provisions of counseling in disabled persons could never have been completed since pharmacists were currently finding it difficult to comply with these GPP provisions. This also may be a factor to keep in mind.

4.4.4 Chi-Square tests summaries

Chi-square tests were used to look at the statistical significance of an association between predictors and determining outcomes. With SPSS software, Crosstabs and Chi-square tests (Pearson; Likelihood-ratio; Linear-by –Linear association) are used to assess the hypothesis that the row and column variables are independent, without indicating strength or direction of the relationship. The small size of the sample did not allow making rigorous analysis. However some trends are underlined in the following.

Table 13 shows that the number of pharmacists who did actual counseling totally (in five latest patients) was related to city, being higher in Pretoria than Johannesburg (41.2% versus 13.5%). The less p-value, Pearson Chi-square (p=0.023) or Likelihood-ratio Chi-square (p=0.027), meant that, under the study conditions, the observed result was less likely to occur under the null hypothesis.

Table 13 Relationship City and Dispenser did actual counseling on the medication

Crosstab				**No or Partially**	**Totally**	
Level of achievement				< 5 patients	5 patients	Total
City	Johannesburg	Count		32	5	37
		% within city		86.5	13.5	100
	Pretoria	Count		10	7	17
		% within city		58.8	41.2	100
Total		Count		42	12	54
		% within city		77.8	22.2	100
Chi-Square Tests		**Value**	**Df**	**Asymp. Sig. (2-sided)**		
Pearson Chi-Square		5.157166	1	0.023150		
Likelihood Ratio		4.867011	1	0.027374		
Linear-by-Linear Association		5.061663	1	0.024460		
N of Valid Cases		54				

As shown in table 14, even though the difference is not statistically significant (Pearson Chi-square, $p \geq 0.062$; Likelihood-ratio $p \geq 0.055$), female pharmacists performed better than males about advising dosage regimen and duration of consumption (80.9% versus 56.8%).

Table 14 Relationship Gender and Dosage regimen and duration of consumption

Crosstab				**No or Partially**	**Totally**	
Level of achievement				< 5 patients	5 patients	Total
Gender	Male	Count		16	21	37
		% within gender		43.2	56.8	100
	Female	Count		4	17	21
		% within gender		19.1	80.9	100
Total		Count		20	38	58
		% within gender		34.5	65.5	100
Chi-Square Tests		Value	Df	Asymp.Sig.(2-sided)		
Pearson Chi-Square		3.471435	1	0.062437		
Likelihood Ratio		3.660072	1	0.055731		
Linear-by-Linear Association		3.411583	1	0.064740		
N of Valid Cases		58				

However, Table 15 shows that male pharmacists performed better than females about obtaining initial drug related information (30.3% versus 9.5%), even though again the difference is not statistically significant (Pearson Chi-square, $p \geq 0.073$; Likelihood-ratio

p≥0.060). So, gender is really not a determining predictor to consider in this assessment technique.

Table 15 Relationship Gender and obtaining initial drug related information

Dispenser tried to obtain initial drug related information				**No or Partially**	**Totally**	
Level of achievement				< 5 patients	5 patients	Total
Gender	Male	Count		23	10	33
		% within gender		69.70	30.30	100
	Female	Count		19	2	21
		% within gender		90.48	9.52	100
Total		Count		42	12	54
		% within gender		77.78	22.22	100
Chi-Square Tests		Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square		3.205937	1	0.073371		
Likelihood Ratio		3.514534	1	0.060832		
Linear-by-Linear Association		3.146568	1	0.076086		
N of Valid Cases		54				

Surprisingly, Table 16 shows that the impact of workload was the contrary to what would be expected. Pharmacists in very busy pharmacies realized a greater achievement in summarizing counseling points than those in busy or not busy pharmacies (Likelihood-ratio Chi-square p=0.003). This result is not meaningfulness since there were more than 6 cells with an expected count less than 5, but is just indicative of poor correlation between workload and extent of counseling in the selected pharmacies.

Table 16 Relationship Workload and Counseling points summarized

Level of achievement		**< Five patients**		**Five patients**		**Total**
Likelihood-ratio Chi-square p=0.003		N	%	N	%	N
Workload	Not busy	6	100.0	0	0	6
	Busy	37	84.1	7	15.9	44
	Very busy	1	20.0	4	80.0	5
Total		44	80.0	11	20.0	55

6 cells (66.6%) have expected count less than 5.

5 PHASE-II STUDY QUANTITATIVE RESULTS

5.1 STUDY SAMPLE CHARACTERISTICS

As reported in Table 17, the final study sample included 117 patients (65.4%) from Johannesburg region and 62 patients (34.6%) from Pretoria region. The ratio of about ½ was respected as for the PSA. Approximately 60.3% of patients were with younger pharmacists and 39.6% with older pharmacists; 59.2% of patients were associated with pharmacies supervised by male pharmacists and 40.8% by female pharmacists.

Table 17 Frequency distribution of patients by city, age and gender

		Frequency(N=179)	Percent
City	Johannesburg	117	65.4
	Pretoria	62	34.6
Age	Younger	108	60.3
	Older	71	39.7
Gender	Male	106	59.2
	Female	73	40.8

Table 18 shows that 67 (40.9%) patients interviewed were connected with independent pharmacies, 40 (24.4%) with chain, 34 (20.7%) with clinic and 23 (14.0%) with linked pharmacies. About 63.1% of patients interviewed came from busy pharmacies, 25.1% from not busy and 11.7% from very busy pharmacies.

Table 18 Frequency distribution of patients by Pharmacy type and Workload

		Frequency(N=179)	Percent	Valid Percent
Pharmacy type	Clinic	34	19.0	20.7
	Independent	67	37.4	40.9
	Chain	40	22.3	24.4
	Linked	23	12.8	14.0
	Total	164	91.6	100.0
	Missing System	15	8.4	
Workload	Not busy	45	25.1	25.1
	Busy	113	63.1	63.1
	Very busy	21	11.7	11.7
	Total	179	100.0	100.0

As shown in Table 19, about 53.4% of patients had their medicines dispensed by the pharmacist alone whilst either the pharmacist assistant (15.7%) or other staff member (7.3%) served the remaining. Some patients checked a combination of dispensers where the pharmacist was usually present. Those who could not identify the dispenser represented 7.3%. This means some dispensers did not introduce themselves to the patient, and at the best, there was no distinctive sign to recognize the pharmacist amongst staff members.

Table 19 Frequency distribution of patients by category of dispensers

Who dispensed the medication?	Frequency(N=179)	Percent	Valid Percent
Pharmacist [1]	95	53.1	53.4
Assistant [2]	28	15.6	15.7
Other staff member [4]	13	7.3	7.3
I don't know [5]	13	7.3	7.3
1&2	18	10.1	10.1
1&4	8	4.5	4.5
2&4	1	0.6	0.6
1&2&4	2	1.1	1.1
Total	178	99.4	100.0
Missing System	1	0.6	

With regard to the customary habits of patients, Table 20 shows that 94 (52.8%) patients usually attend the same pharmacy where they purchase medicines; 21.4% attend frequently and 20.8% rarely, whilst for 5.1% it was the first visit.

Table 20 Frequency distribution of patients by customary habits

How often do you get your medicines in this pharmacy?	Frequency	Percent	Valid Percent
Always	94	52.5	52.8
Frequently	38	21.2	21.3
Rarely	37	20.7	20.8
First time	9	5.0	5.1
Total	178	994	100.0
Missing System	1	0.6	
Total	179	100.0	

5.2 NATURE AND EXTENT OF PATIENT COUNSELING PRACTICES

5.2.1 Prevalence of counseling achieved to the patients interviewed

Table 21 indicates that, to the question addressed to patients if the people who dispensed their medicines during the investigation day gave them any medication-advice, 74.2% of patients declared “Yes” and 25.8% “No”.

Table 21 Percentage of patients given any verbal advice

Did the person who dispensed your medicine give you any oral advice?	Frequency	Percent	Valid Percent
Yes	132	73.7	74.2
No	46	25.7	25.8
Total	178	99.4	100.0
Missing System	1	0.6	
Total	179	100.0	

5.2.2 Method in which counseling was given to patients

As shown in Table 22, the outcome found through measurement of patient encounters indicates that 6.6% of patients received drug information as only a printed label on the packet and 2.2% as only insert leaflet. About 46.7% of patients received only verbal advice; both written and verbal information occurred to 44.5% of respondents.

Table 22 The format in which patients received counseling

	Frequency	Percent	Valid Percent
Label on packet	9	5.0	6.6
Leaflet	3	1.7	2.2
Verbal	64	35.8	46.7
Both verbal and written	61	34.1	44.5
Total	137	76.5	100.0
Missing System	42	23.5	
Total	179	100.0	

The combination of this data indicates that, when counseling was given, about 91.2% of pharmacists gave oral advice supported by a supplementary written advice in 53.3% of

patients where necessary. This supports the evaluation made by pharmacists saying they often give supplementary written information some of the time in about 55.9% of cases.

5.2.3 Patient's satisfaction with the verbal counseling received

Table 23 shows that about 78.4% of patients were very satisfied with the verbal counseling provided whilst a small number had not been satisfied with the counseling given. The concern is that Pharmacists should be keener in providing verbal counseling.

Table 23 Frequency distribution of patients' satisfaction with verbal advice

How well were you satisfied with the verbal counseling received?	**Frequency**	**Percent**	**Valid Percent**
Satisfied	109	60.9	78.4
Fairly satisfied	18	10.1	12.9
Neither satisfied nor dissatisfied	7	3.9	5.0
Not very satisfied	4	2.2	2.9
Not satisfied	1	0.6	0.7
Total	139	77.7	100.0
Missing System	40	22.3	
Total	179	100.0	

5.2.4 Extent to which investigational items were completed

Table 24 indicates that around 14% of patients may have completely received all ten-drug information items. In most of the cases, patients received one to nine items.

Table 24 Frequency distribution of the number of drug items actually achieved

Score on 10 drug information items	**Frequency(N=179)**	**Percent**
0	9	5.0
1	8	4.5
2	8	4.5
3	12	6.7
4	18	10.1
5	17	9.5
6	20	11.2
7	18	10.1
8	22	12.3
9	22	12.3
10	25	**14.0**

As above, Table 25 indicates that the entire behavioural checklist was totally completed in about 15.1% of patients and not at all in 2.8% of patients.

Table 25 Frequency distribution of the number of behavioural items completed

Score on 10 behavioural items	**Frequency(N=179)**	**Percent**
0	5	2.8
1	11	6.1
2	20	11.2
3	13	7.3
4	20	11.2
5	16	8.9
6	13	7.3
7	9	5.0
8	19	10.6
9	26	14.5
10	27	**15.1**

Table 26 indicates that on average 6.1 ± 2.9 events occurred out of ten-drug information items and 5.8 ± 3.1 steps were completed during each counseling session no matter which.

Table 26 Mean number of items achieved during a counseling process

Items	**Johannesburg**		**Pretoria**		**Total**	
	Mean value	(SD)	Mean value	(SD)	Mean value	(SD)
Drug information items /10	6.2	(3.1)	5.8	(2.5)	**6.1**	(2.9)
Behavioural items /10	6.2	(3.3)	5.2	(2.7)	**5.8**	(3.1)
Total items /20	12.4	(5.9)	10.9	(4.8)	**11.9**	(5.6)

5.2.5 Extent to which investigational items were individually achieved

As it appears from Table 27, about 84.7% of patients received an advice about directions for use whilst 46.4% of patients received advice on non-pharmacological information. On average, 62.2± 15.2% of patients received 6.1±2.9 items related to drug information.

Table 27 Extent to which drug information items are completed

DRUG INFORMATION ITEMS	**% Yes**	**% No**
1.Directions for use	84.7	15.3
2.Dosage regimen and duration of consumption	82.9	17.1
3.Name, class and purpose of the medication	79.8	20.2
4.Precautions to be aware of	66.3	33.7
5.Drug interactions with other drugs, with food, …	60.7	39.3
6.Side effect profile (management and prevention)	55.8	44.2
7.Storage recommendations	52.3	47.7
8.When does the medication begin to work and benefits	46.9	53.1
9.Advise on missing a dose	46.9	53.1
10.Non pharmacological intervention	46.4	53.6
Mean	**62.2+15.2**	

Table 28 shows that about 89.9% of dispensers greeted their patients and 86.9% thoroughly reviewed the medication script compared with 47.4% of patients asked consent for counseling. On average, 62.1±15.3% of patients benefited 5.8±3.1 behavioural items.

Table 28 Extent to which counseling steps items are completed

PHARMACIST BEHAVIOURAL ITEMS	**% Yes**	**% No**
1.Dispenser greeted patient and established comfort level	89.9	10.1
2.Dispenser reviewed the script thoroughly	86.9	13.1
3.Warning about consuming other drugs simultaneously	64.1	35.9
4.Dispenser did actual counseling on the medication offered	63.3	36.7
5.Clarification of any uncertainties/	61.2	38.8
6.Dispenser tried to obtain initial drug related information	59.4	40.6
7.Patient invited back	52.9	47.1
8.Dispenser introduced generics for substitution	48.0	52.0
9.Counseling points summarized	47.7	52.3
10.Dispenser asked patient consent for counseling	47.4	52.6
Mean	**62.1±15.3**	

5.3 TESTS FOR INFLUENCING FACTORS ON COUNSELING PRACTICE

ANOVA and Chi-square tests served to examine the influence of demographics on the counseling nature and extent. Tables below describe some of the relationships observed.

5.3.1 Influence of the city location

Table 29 shows that the mean scores worked out for the achievement of drug informational items not significantly different between the two cities (ANOVA test: $p \geq 0.326$). Some difference would be accepted for the achievement of pharmacist behavioural items (ANOVA $p \leq 0.04$).

Table 29 ANOVA Table: Relationship between Scores worked out and City

City	Statistics	Drug information items achieved/ 10	Behaviour items achieved/10	Total items/20
Johannesburg	Mean	6.2308	6.1966	12.4274
	N	117	117	117
	SD	3.1551	3.2832	5.9990
Pretoria	Mean	5.7742	5.1935	10.9677
	N	62	62	62
	SD	2.5247	2.6969	4.8212
Total	Mean	6.0726	5.8492	11.9218
	N	179	179	179
	SD	2.5287	3.1219	5.6483

			Sum of Squares	Df	Mean Square	F	Sig.
Score drug information * City	Between Groups	(Combined)	8.448	1	8.448	0.969	0.326
	Within Groups		1543.608	177	8.721		
	Total		1552.056	178			
Score pharmacist behaviour * City	Between Groups	(Combined)	40.771	1	40.771	4.260	0.040
	Within Groups		1694.156	177	9.572		
	Total		1734.927	178			
Global score * City	Between Groups	(Combined)	86.337	1	86.337	2.732	0.100
	Within Groups		5592.568	177	31.596		
	Total		5678.905	178			

The scores worked out were also unrelated to pharmacy type, pharmacy workload, as well as pharmacists' gender ($p>0.05$).

In addition, from Table 30, the chi-square tests showed that the percentage of patients actually counseled was not different between the two cities, nor was it with other predictors ($p \geq 0.46$).

Table 30 Crosstab: City and rate of verbal counseling

Crosstab			Did the dispenser give any advice		
			Yes	No	Total
City	Johannesburg	Count	84	32	116
		% within City	72.4	27.6	100.0
	Pretoria	Count	48	14	62
		% within City	77.4	22.6	100.0
Total		Count	132	46	178
		% within City	74.2	25.8	100.0

Chi-square Tests	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0.528(b)	1	0.467
Likelihood Ratio	0.536	1	0.464
Linear-by-Linear Association	0.525	1	0.469
N of Valid Cases	178		

It appeared however that the rates of counseling achievement on some individual items were significantly higher in Johannesburg compared to Pretoria.

As shown in Table 31 for example, a significant difference emerged for giving non-pharmacological intervention (58.3% for Johannesburg versus 25% for Pretoria; $p=0.00$); about 92.9% of Johannesburg patients were very satisfied with the verbal advice received compared to 55.6% of patients from Pretoria region ($p=0.00$).

Table 31 Testing impact of City on counseling outcome measures

Outcome measures affected	**Cities**			
	Johannesburg %	**Pretoria %**	**Total %**	P
Non-pharmacological intervention	58.3	25.0	46.4	0.00
Dispenser reviewed the script thoroughly	94.1	74.6	86.9	0.00
Dispenser tried to obtain initial drug related information	65.7	46.7	58.8	0.02
Dispenser asked patient a consent for counseling	52.7	36.1	46.8	0.04
Dispenser introduced generics for substitution	54.5	35.6	48.0	0.02
Clarification of any uncertainties	67.0	50.9	61.2	0.04
Counseling points summarized	53.6	36.7	47.7	0.03
Verbal counseling achieved	54.8	33.9	46.7	0.02
Patients Satisfaction level / very satisfied	92.9	55.6	78.4	0.00

More likely, this difference would have a link with patients' perceptions instead of pharmacists' performance. In essence, pharmacists in clinic settings behaved near exactly as their colleagues in private owned or in chain pharmacies did. After all, as the education and guidelines stand common to all pharmacists, a difference between them would be unjustified after adjusting for age and dispenser's category. The conclusion drawn by Myburgh et al (2005) about the impact of SES and race on patient's perceptions is invaluable but the present study did not test this element. Nevertheless, one should note that most of patients in Pretoria region came from Mamelodi and Sunnyside, an area likely to have a great number of low SES respondents compared with areas such as Sandton and Braamfontein in Johannesburg.

5.3.2 The influence of pharmacist's age

In this study, the dispenser was not always the pharmacist and it was agreed that the respondent pharmacist is accountable for what the patient would report. It came out that the pharmacist's age may affect the outcomes in some cases. Table 32 shows that the younger pharmacists obtained higher rates about when the medication begins to work and its benefits (52.8% versus 37.1%); counseling points summarized (55.2% versus 36.2%) as well as doing the actual counseling (69% versus 54.6%). The meaning of age may be associated with the youth enthusiasm as well as to the academic training. Younger

pharmacists in SA have the benefit of intense refreshed pharmacology courses and modern pharmacy practice. There is then a need for continuing education on pharmacology and pharmacy practice for both the younger and older generations.

Table 32 Testing impact of Age on counseling outcome measures

Outcomes measures affected	**Age scale**		
	Young %	**Older %**	**(p)**
When does the medication begin to work and benefits	52.8	37.1	0.04
Counseling points summarized	55.5	36.2	0.01
Dispenser did actual counseling on the medication offered	69.0	54.6	0.05

5.3.3 The influence of Dispenser's qualification

As stated above, the method used to evaluate the extent to which counseling is carried out is based upon the performance of all categories of dispensers as a whole. A comparison test was necessary to investigate a possible bias when assigning the results to the pharmacist. In general, pharmacists would perform or behave much better than other categories of dispensers. For example, from table 33, 95.8% of pharmacists greeted patients and established comfort level whilst this achievement was on average 78.6% for pharmacist assistant, 69.2% for other staff member and 84.6% for the undefined dispenser ($p \leq 0.03$).

Table 33 Testing impact of Dispenser qualification on counseling outcome measures

Outcomes measures affected	**Dispensers identified**				
	Pharmacist %	**Assistant %**	**Other staff member %**	**Unknown %**	**(p)**
Dispenser greeted patient and established comfort level	95.8	78.6	69.2	84.6	0.03
Dispenser tried to obtain initial drug related information	67.1	34.7	58.3	30.0	0.05
Dispenser introduced generics for substitution	55.1	14.8	76.9	30.8	0.00
Counseling points summarized	58.9	29.6	33.3	23.1	0.04

6 QUANTITATIVE FINDING SUMMARIES DISCUSSION

The table 34 below summarizes the main quantitative outcomes drawn from this study.

Table 34: Quantitative study outcomes summaries

Outcomes measures	**Outcomes trends**
Prevalence of counseling	
Any form of advice given to patients	95%
Estimated mean percentage of patients verbally counseled	74 %
Mean number of drug informational items achieved	6.1/10
Mean number of pharmacist behavioural items completed	5.8/10
Mean number of patients given on average 6 drug items	62%
Format or method of counseling	
Verbal advice alone	46.7 %
Verbal advice supported by written information	44.5 %
Written advice as label on the packet or insert leaflet alone	8.8 %
Model of communication	
Intensive dialogue (patient is asked to relate back the advice)	27 %
Type and extent to which information is given	
Drug instructions for use	> 70 %
Side effects related advice	< 50 %
Storages conditions and disposal of unused medicines	< 50 %
Special precautions e.g. food, beverages, OTCs to be avoided	< 50 %
Predictor factors on counseling practices	
Pharmacy type, workload and gender	No relationship well defined
Location	Johannesburg rates higher than Pretoria
Age	Younger performance higher than Older
Dispenser qualification	Pharmacist performs better than other dispensers
Acceptability and Feasibility of self-assessment by pharmacist	
Acceptability	80 %
Feasibility	72 %

The performance and extent of counseling events

From Pharmacist-Self-Assessment (PSA), about 95% of pharmacists said they would counsel spontaneously each time they dispense any drug. However, when asked if the person who dispensed their medicines during the investigation day did give any medication-advice, about 74% of patients agreed and 26% disagreed. Thus, 95% rate given by pharmacists is indicative of the rate of counseling including any form of information. The 74% rate furnished by patients represents the trend of the actual verbal medication advice.

The PSA study indicated that on average about 58% patients received at least one informational item while at least one behavioural item had been achieved in about 67% patients on daily basis. These values were validated by the corresponding achievement measured from PIA, which gave the range of about 62 ± 15%. Then, effective comprehensive counseling occurs in the range of 60 to 70%.

Overall, these rates are comparable to figures reported in the international literature. Berger (2005) in Germany found that 95% of pharmacies gave advice to the pseudo customers but the information on appropriate self-medication was provided on at least one item in 74% of pseudo customer visits. The figure is also comparable to the study of Svarstad et al (2004) in USA that showed the rate of any kind of information-giving was 63% all drugs combined. Another comparable rate is found in the study of Shani et al (2000) in Israel that concluded counseling by pharmacists occurs at a high rate (64.6% for any type of counseling).

It is worth noting that the rate of the introduction of generics for substitution is between 48 and 75%. The law on mandatory generic substitution would have positively influenced the premature switch from branded to generics in the private pharmacy sector.

The type of information often given

Results from both two investigational methods (PIA, PSA) showed that only three items relating to drug information were well covered (>70%); these are directions for use, dosage regimen and duration of consumption as well as making it clear what the name, class and purpose of the medication is. The points not satisfactory achieved (<50%) are giving advice on missing a dose, non-pharmacological intervention, telling when the medicine begins to work and side effects.

Information on side effects was generally small and if ever it was given, the pharmacist often focused on the kind of side effects, which could occur, and less often on the seriousness or duration of the side effects. This may be explained by the fact that it is not so easy to predict the duration of side effects which can vary from one person to the other. We suggested that the task can be lightened if the pharmacist documents counseling events to construct reference records. The behavioural items that were extensively achieved are thoroughly reviewing the script and greeting the patient. The points not well achieved were asking patient consent for counseling, obtaining initial drug information and summarizing counseling points.

This finding is comparable with the finding of Svarstad et al (2004) in USA that reported most commonly mentioned items being drug name (60%) and directions for use (59%); adverse drug effects being discussed for 17%, 31%, and 37% of the amoxicillin, ibuprofen, and paroxetine prescriptions, respectively; while 2% to 16% of the shoppers were told when the medication would begin to work.

The WHO GPP standards stipulate that the amount and type of information provided to the patient should vary based on the patients' needs and practice setting, and will vary depending on the pharmacy clientele. Since most of the patients always visit the same pharmacy, it can explain why the pharmacists do not need to counsel the same patient about the same medication at each refill time.

The method in which counseling is carried out

Both the pharmacists and the patients confirmed that the medication-advising is given orally and in written form. From pharmacist self report, it came out that supplemental written information (written form as handwritten label or instruction written on the packet) is not always given but some of the time in about 56% of cases. Less than 10% of patients leave the pharmacy with only the label put on the packet or the insert leaflet.

Despite the fact that the quality and accuracy of information given in this study was not evaluated, the rates observed sound satisfactory. Dowse and Ehlers (2005) pointed out that the presence of pictograms is helpful to contribute positively to both the understanding of instructions and adherence.

Model of verbal interaction and quality of information

To assess the understanding of or the level of satisfaction with verbal counseling, the majority of pharmacists would just ask whether the patient understood or is satisfied. It also appeared that only 27 % of pharmacists would ask patients to relate the information back and about 30% of pharmacists failed to assess the satisfaction of their patients in their daily routine. One can wonder whether just asking patients if they understood what the pharmacist has said is monologue or dialogue interaction. This outcome shows that there is some kind of dialogue between pharmacists and their patients but a comprehensive exchange is limited to about 27% of encounters. Pharmacists should make any effort to lift the extent to which a comprehensive exchange is carried out to ensure SA pharmacists escape from the monologue model criticised by Rutter (2004) and others.

Factors that may affect counseling achievement

Even though statistics are not rigorous, the findings about the relationship between predictors and counseling outcomes are indicative of evidence for the reduction of counseling performance.

In general, the odd ratios could be reduced by the following factors: pharmacist lack of time, patient does not like to be counseled because he/she already knows about the medication, pharmacists who yet have never heard about SA GPP guidelines, difficulty to accomplish some special SA GPP guidelines related to disabled persons. Statistic trends showed pharmacist-lack of time overweighing patient-in hurry (50% versus 47.9%). It appears, however, that even though every pharmacist had enough time to counsel, the rate could hardly rise beyond 74% estimated in phase-II study because many patients do not need to be counseled.

In particular, the environment of each city, Johannesburg and Pretoria, may influence the patient's perceptions about the satisfaction with pharmacist's performance in patient counseling. The observed influence of age can be related to the youth enthusiasm as well as to the academic training. Younger pharmacists in SA have been going on intense pharmacology courses and benefited from the new, modern pharmacy practice. The qualification of the dispenser is likely to influence the counseling profile but this necessitates further standardized studies to get more significance about.

Feasibility of assessment surveys in community pharmacies in SA

In the present study, two assessment techniques were tested: Pharmacist Self-Assessment (PSA) and Patient Interview Assessment (PIA). As it has been shown, the results were well concordant in giving the profile of covertures, yet some differences were observed with regard to the percentage obtained. The values obtained from PIA were higher than found in PSA for the items badly achieved while they remained almost comparable for items well counseled. For example, the rate of reviewing the script thoroughly was 87% and 99% for PIA and PSA respectively while the rate of asking patient consent for counseling was 48% from PIA and 29.4% from PSA. Pharmacist responses could be validated against the patients' responses in the respective pharmacies.

More over, the outcomes from this study are comparable to the published data obtained elsewhere by means of pseudo-customer or mystery shopper approach. It is then clear

that the self-reported responses from pharmacists sound more objective than subjective and indicate that the PSA questionnaire used is valid to serve as a self-assessment tool.

When planning further surveys in community pharmacies one might anticipate a participation rate not greater than 75% provided intensive sensitization had been made before. SAPC has set up a tool to do confidential assessment of the nature and extent of pharmaceutical services carried out in community pharmacies. Yet there is no report about the work and findings.

7 QUALITATIVE ANALYSIS OF THE OUTCOMES

As anticipated in the methodology section, the qualitative analysis was based upon the respondents' comments, remarks and suggestions recorded. Behaviours and attitudes had to be interpreted using constant-comparative analysis technique, which challenges the pharmacists and patients responses. Since there was no absolute mutual correspondence between every pharmacist and his/her customers, answers from pharmacists were gathered and then compared to patients' outcomes where applicable. The contribution by all the participants revolves around the four themes below.

7.1 ACCEPTABILITY AND FEASIBILITY OF THE ASSESSMENT

a) Pharmacists' attitude with regard to patient counseling

During this survey, the majority of pharmacists showed a positive attitude with regard to patient counseling and gave me their full and spontaneous attention. Thereof, pharmacist assessment on patient counseling practice was rendered feasible. The comments and suggestions made by the participant pharmacists in the selected section of Gauteng portray the SA pharmacists' attitude to the ease/difficulty of complying with the pharmacist's new role. The new pharmacist is defined as someone who manages the totality of the illness of the whole person by dispensing, communicating, listening, and talking with patients.

It is worth noting that some pharmacists agreed to participate but refused to allow interviews with their patients. The reason for reluctance or refusal of those pharmacists to enter the survey or to interview their patients must be deeply investigated. The fear of wrongdoing being reported may be anticipated as one. This will necessitate workshops aimed at clarifying the matter to ensure self-confidence and enthusiasm from the pharmacists.

b) Patients' attitude with regard to medication advising

With regard to patients, I was surprised by their openness and high level of willingness to contribute to this research and swept away my previous fear of being aggressively received. Many patients were interested enough to give their perception of counseling and information that they desired to be provided with. Moreover, the majority of patients asked further questions about their medication and showed interest in improving their knowledge following counseling by the pharmacist.

7.2 PATIENTS' PERCEPTION ON PHARMACIST'S COMPETENCES

a) Patients' attitude with regard to pharmacist's behaviour

Some patients made the following comments,

- "There is excellent counseling in pharmacies. I make sure I always go to the same person and build up a personal relationship concerning my illnesses and complaints and medication. This interest is necessary I think for older patients who can feel very lonely and neglected."
- "I am very happy with the services I received. I think that SA should have more pharmacists like that pharmacist because she is very kind and sweet, she is very easy to talk to, someone who you can be open with."
- "I would like to deal with a friendly pharmacist who encourages the patients to come back the next time and would like to be treated equally with all other people."
- "Pharmacists must always be friendly and understanding towards the patient. Patience is also needed from them for patients to give them the respect they deserve."

According to patients' view, most of the participant pharmacists seemed to be friendly, compassionate and empathic towards their patients, and counseled effectively and with competence. The concerns expressed throw light on patients' needs to support their

efforts to develop medication management skills and to move in the direction of self-responsibility. Although many patients found pharmacists friendly, there were some patients complaining there were not treated in a friendly way compared to what it was observed by other people.

b) Reliability of pharmacists as counselor

Patients highly valued the counseling they received from pharmacists, and agreed they got the necessary knowledge regarding the use of their medication. However, some patients contended,

- "The pharmacists are very nice but some of them do not really care about counseling."
- "Everyone working in a pharmacy, not only pharmacists should get simple basic skills on how to approach and talk to patients."

The background section pointed out that today, in every SA University where a pharmacy programme is offered, a course on Pharmacy Practice is included in the curriculum that involves teaching the practical applications, legal and ethical aspects, marketing and business skills. The outcomes from this survey showed that the level of pharmacists' compliance with Pharmacy Council Regulations is high and the actual impact of academic changes is unquestionable. Thus, the observation made by those patients may be isolated or individual circumstances.

Nevertheless, the community pharmacists should take up these challenges. Continuing professional education programmes are necessary to ensure every pharmacist comprehends the importance and the competence to carry pharmaceutical care out with empathy, sincerity and patience.

7.3 NATURE AND EXTENT OF COUNSELING PRACTICES

a) The format of communication

Patients frequently wanted both types of information, written or verbal counseling as expressed in the following statements:

- "I would like the pharmacist to write the information on paper."
- "Sometimes, the leaflet is not in the box, although it would be of help to the patient if the leaflet is kept within the box."
- "Written information is not enough because not all people can read and others are ignorant, verbal info is good."
- "The pharmacist must give health education about the drug that a particular patient is going to take and should always be verbal in order to create the relationship with their patients."
- "It is important that pharmacists remain open to their patients, mostly when they are giving drugs to the patient."
- "If possible, the person who has given the drug should always indicate on the sticker the name and telephone number of the pharmacy so that if the patient has gotten any side effects, he/she can easily contact the pharmacy staff in time."
- "When giving medication, the dispenser has to give the patient directions verbally, because most of the time, they assume that the directions are already on the medication."

b) The nature and extent of counseling provided in daily routine

Pharmacists themselves made recommendations such as:

- "Pharmacist should give any other information, which may be considered necessary at the time, including life changes."
- "Pharmacist should provide patient with precautions e.g. what leads to drowsiness, what not to use while operating machinery or driving."

- "It is important to mention and record interactions with other medicines being taken by patient."

These observations show that the participating pharmacists are conscious of the concern about adverse reactions and non-pharmacological information. Continuing self-education may contribute to filling the gap.

Many patients interviewed stated that they received some written or verbal counseling, but did not receive all of the information they had desired. Patients' particular cases are expressed as follow:

- "I would like to know what consequences it will have if I do not follow exactly the prescription."
- "Pharmacist should always try to explain how medications given work and their reactions to patients."
- "I would like to know the danger if one product is consumed for several days. I wish to be told how long to take the medicine, what happens if the person is not cured after several days (what to do next). The most significant information needed is the danger of the product."
- "It's pointless being sick and not knowing what is wrong, worse being given medicine that you don't know with the hope that it's the doctor that prescribes so the patient can't question it. It has to be right to get some knowledge about drugs. This could help patient's adherence."
- "I would like to have information about potential side effects and how medication bought would interact with other medication taken, if any."
- "I expect from pharmacist more information like if the medication causes dizziness."
- "The pharmacists should counsel to stress importance of adherence to drugs to the patient."
- "The dispenser was supposed to give warning about consuming other drugs simultaneously."

- "I would like to know the purpose for the medicine, and how it will affect the body internally or externally. Also would like to know if any allergens are consisted in the medicine."
- "Patient should be given advice and good care."
- "I would like to know side effect warnings and the use of medication to avoid resistance to drugs."
- "Pharmacists must tell the patient about the side effects so that the person must be ready for every thing."
- "The pills were written 'take once a day' but I was confused whether it should be anytime of the day or a specific time"
- "Patients should be given options and advice, which are reasonable and effective alternative medications."

In general, the topics most often missed were storage instructions, interactions with OTC medications, instructions for a missed dose, and methods to avoid adverse effects and drug-interactions. There has been concern reported that providing information on adverse effects may prompt patients to report spurious reactions and reduce compliance (Burk ML 1998). This has not been found to be the case in clinical trials. The Gibbs et al. (1989) study found that patients who received medication leaflets had greater recall of possible adverse effects and improved compliance more than control, with no increase in false reports of adverse reactions. However, as suggested by Gibbs et al (1989), all medication information is necessary but careful consideration should be given to how information on adverse effects is presented.

c) Achievement of counseling process steps in daily routine

Some pharmacists made the following statements:

- "The general procedure with every patient should be the same. Care should be taken to ensure all the necessary measures are followed to assure effective and safe use of medication; this also includes important situations like repeat prescriptions."

- "During the counseling session, the counseling points summarized seems to be difficult, so I suggest that each topic has to be summarized immediately when it is presented."
- "It is important to mention and record interactions with other medicines being taken by patient."

The GPP emphasizes that a pharmacist must counsel each patient or caregiver on matters, which will optimize the medical therapy prescribed. In addition, the interaction pharmacist-patient should be friendly and conducted in a one-to-one fashion. One cannot discard the process of gradually summarizing the counseling points stated by one pharmacist, but it needs to be validated. Another pharmacist lifted the importance to mention and record interactions with other medicines being taken by the patient. GPP standards recommend the counseling session should be documented; any follow-up required should be noted; it should also be recorded if the patient does not wish to be counseled. Pharmacists are aware of the requirement but how many of them follow up with this?

One patient said that her husband is a doctor, so she does not "really go through the whole procedure of counseling". Such an attitude may limit the process to be completely achieved.

d) Patients who should be always counseled

This research showed some categories of patients on chronic therapies who expressed the need to receive more information. Examples are,

- One 49-year patient on chronic medication (anticoagulant) saying, "I need to know how this medication works in interaction with others to be on the safe side. I would like to know what are the generics and substitutions".
- An orthopaedic patient in clinic who contended, "I normally get medicine without knowing the name of the medicine."

- One patient in cancer-ward saying, “Sometimes the leaflet is not in the box, although it would be of help to the patient if the leaflet in the box is kept within the box.”
- One patient who contended, “It’s very important to get counseling before one receives medication e.g. in terms of contraceptives, not everyone knows what kind of medications to avoid (drug interactions with drugs, with food, with disease state.”

According to GPP, if the pharmacist cannot counsel everybody, it should be defined which patient types, or which medications pharmacist will routinely counsel patients. This will vary depending on the pharmacy patientele and may include patients receiving more than a specified number of medications; patients known to have visual, hearing or literacy problems; paediatric patients and patients on anticoagulants. Patients who are prescribed long-term medications need to understand the serious effects that chronic illness has on their lifestyle.

7.4 FACTORS INFLUENCING COUNSELING PRACTICE

a) Resource scarcity and lack of time

One patient contended, “The pharmacists and pharmacy staff in general are in such a hurry to let a patient go, they don’t even give him/her enough time to express his/her problem and ask questions about the medication. The patient has no choice and has to go just after paying the product.”

“More awareness should be raised in the public that we are not a ‘fast-food’ outlet and need time to assess and dispense prescriptions”, contended one pharmacist.

The study showed that in the 60 pharmacies investigated, there were 22 pharmacist assistants, 6 pharmacist interns and 4 other staff members acting as dispensers. Some pharmacists said there is a need of more pharmacists and less pharmacist assistants. Once

more, a debate is opened about resource scarcity in profession. Whether it is time or money, no business ever has enough and pharmacy is no exception. Due to the shortage of work force, the main function of many pharmacists in the practice settings remains that of dispensing, and this trend is reflected elsewhere in the world. The fact that many South African pharmacists function both as dispensers of medications and as pharmaceutical care practitioners in community pharmacy environments may be a factor contributing to the increasing number of dispensing errors reported to the SAPC (Kairuz and Naidoo 2005).

Despite that evidence, the standards underline that the health care professional's responsibility is to support the person's efforts to develop medication management skills and to move in the direction of self-responsibility with empathy, sincerity and patience.

b) Counseling area and confidentiality

One pharmacist said, "There is a need to educate patients to have more respect for what the pharmacist has to say to the person in front of you in the queue." Another added, "It is important to have a counseling room so that interruption will be minimized."

Not almost all the community pharmacies visited except some clinic settings have special counseling rooms. On this matter, GPP recommends the patient should be counseled in a semi-private or private area away from other people and distractions, depending on the medication(s). That provides an opportunity for patients to ask questions they may be hesitant to ask in public. The necessity of private counseling area still holds in SA.

c) Knowledge and applicability of SA GPP standards

One of the study guide questions was "Are the national standard scenarios on counseling sufficient and well known by the pharmacists?" Some pharmacists, as additional contribution to improve the current SA GPP guidelines, mentioned the following suggestions:

- "Pharmacists wish some protocol to help impairment person. What are they supposed to do and what are they protected for?"
- "Pharmacists need a specific dosage indication from psychiatric doctors."
- "Make it mandatory for manufacturers to include patient 'friendly' leaflets in African language as well as English."
- "Pharmacist Assistant and other Pharmacy Staff member may be responsible for all, depending on scheduling."

As earlier reported in the quantitative section above, there were yet some pharmacists who are not informed about the GPP guidelines on patient counseling. In trying to know why patients are not asked for their consent for counseling, one of the pharmacists interviewed said, "In SA, pharmacists feel that they don't need to ask patient consent for counseling, it is their duty". The remark sounds pertinent but it does not leave the patient a decision-maker of his/her own course of therapy as recommended by GPP standards. These suggestions also showed that GPP guidelines for physical or mental impairment have to be reviewed or well documented for the attention of some dispensers.

In USA, the OBRA 90' mandates pharmacists to offer counseling to patients. The result of this policy showed that pharmacists increased communication with patients and other health care professionals and the outcomes of drug therapies improved among targeted patient groups. In SA, even though yet there is no coercive law provisions on Patient Counseling, there are sufficient incentive Gold Standards. For instance, dispensed medicine should be labelled as required in Regulation 8(4) of Act 101 of 1965. Is this sufficient or should the authority move forwards?

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 LIMITATIONS

No study is without its imperfections. Although an attempt has been made to isolate as much as possible relative bias and to draw a conclusion regarding the current nature and extent of counseling in the community pharmacies of South Africa, precise conclusions cannot be drawn, given the complexity of the issue under investigation. The present study had a number of limitations that illustrate the two cases below.

First, data were collected from 60 community pharmacies including independent owned, chain, linked settings and clinic pharmacies in two cities, Johannesburg and Pretoria. While this distribution of pharmacy types is consistent with national data, one cannot generalize to other cities nationwide.

Second, even though objective validated measures of counseling were considered, it was not possible to control all variables that likely influence counseling practices. The multivariate nature of the study allows many factors, other than pharmacy and pharmacist characteristics, to have had an effect. For example, any respondent's psychological or antecedent situation may affect the truth of the response given.

8.2 CONCLUSIONS

Although the statistical analysis of the results is not yet complete, some relative conclusions can already be drawn. The major finding of this study is that both pharmacists and patients highly valued the extent of counseling they gave or received.

The results indicated that patient counseling exists in the section of Gauteng's community pharmacies studied and occurs at high rate (60 to 74%) comparable to figures found in the international literature.

Pharmacists give both verbal advice and written information to good satisfaction of the majority of their patients. Patients have a strong desire to receive both written and verbal drug information. However, apparently now, patients and pharmacists agree that the majority of drug insert leaflets need improvement to satisfy registration requirements.

The counseling given concentrates mainly on drug-instructions for use, while information about drug action and side effects seems to be less common. Yet in general, patients' surveys reveal that they are interested in drug effects and side effects, besides their interests in how to use their drugs.

The South African community pharmacists have good knowledge of Gold Standards on counseling and perform well in the application of the SA GPP guidelines, yet a small number ignore the existence of SA GPP guidelines.

Apart from setting up the shape of the actual counseling practice, this study is a contribution to the continuing professional education since the items developed in the questionnaire allowed the participant pharmacists to recall on basic provisions embodied in the GPP Guidelines.

There is scope for improvement in pharmacists' behaviour with respect to asking patients consent for counseling; this will give patients the power to direct their own course to good understanding of medication benefits.

It is worth noting that some pharmacists agreed to participate but refused to allow interviews with their patients. The reason for reluctance or refusal of some pharmacists to enter the survey or to interview their patients must be deeply investigated.

8.3 RECOMMENDATIONS

To ensure that pharmacies' performance in South Africa is beyond reproach, the SA Medicine Control Council (MCC) and SA Pharmacy Council should embark upon The Mandatory Provision with GPP Standards on patient counseling.

There is a need to mandate drug manufacturers to include 'patient-friendly' leaflets in African languages as well as English.

There is also a need for establishing protocols aimed to gather the necessary information from the customer, process this information and provide the customer with the correct advice and further information if necessary.

This will necessitate workshops aimed at clarifying the matter to ensure self-confidence and enthusiasm from the pharmacists. In such a changing and increasingly complex profession like pharmacy, the need for continuing professional education is evident.

Future studies should gather further evidence on the implementation of patient counseling from a nationwide sample. The future initiatives will clarify why some pharmacists hesitate to enter the survey or to interview their patients. The impact of SES, race, religious believes as well as differences in pharmacy curricula and experiential training might enable to better understand the trends uncovered in this study.

APPENDIX 1: Pharmacist Self-Assessment Instrument

Pharmacist Informed Leaflet

Dear Pharmacist,

I am a Masters student at the University of The Witwatersrand and I am conducting a survey as part of my research to fulfill the academic requirements of the Master's degree in Pharmaceutical Affairs (Msc Med).
I would appreciate your cooperation and participation in this study.

The purpose of the survey is to assess whether and to what extent patients are counseled on their medication by dispensing pharmacists in community pharmacies and private pharmacies.

It is important for me to learn more about what YOU do in terms of PATIENT COUNSELING AND ASCERTAIN YOUR OPINIONS ON SOME OF THE MAJOR ISSUES CONCERNING THIS IMPORTANT ELEMENT OF PATIENT CARE.

The pharmacy for which you are responsible has been randomly selected from the PHARMACY INFO GUIDE the related database-open in 2003, the latest up to today, as one of the participants for this survey. As a respondent, YOUR opinions and YOUR answers are extremely important in making the results of this study statistically valid. Please note that there are no wrong and right answers.

I would greatly appreciate if you could take some few minutes of your time to complete the attached questionnaire. It will be of great help if you could answer as honestly and as accurately as possible. This will hopefully, enable me to produce a worthwhile study that can be of benefit to health care policy in South Africa.

You can be assured that the responses obtained shall remain strictly confidential.
This information will be used for publication of article and thesis. Any details or information that identifies you or your pharmacy will be withheld from publication.

Your participation is strictly voluntary and your right to refuse to participate will be respected. If you have any queries, please feel free to contact me or the ethics committee of the University of the Witwatersrand, Johannesburg at contact details listed below.

Thanking you
Yours Sincerely
Monique Rwabuhungu

Pharmacist Informed Consent Form

I have fully understood the above information about this study, which I have read.
I understand what will be required of me if I take part in the study.

My questions concerning this study have been answered by

.....
(name of research representative)

I agree to take part in this study: **Yes / No** (answer to be circled)

I understand that I may withdraw from the study at any time without giving a reason and without affecting my normal care and management.

Yes / No (answer to be circled)

Participant's signature: ..... Date: .....

Investigator's signature: ..... Date: .....

Investigator name: .....

Pharmacist Questionnaire

SURVEY ON PATIENT COUNSELING IN COMMUNITY PHARMACY

PHARMACIST SELF-ASSESSMENT QUESTIONNAIRE

Objectives of the survey include to:

- Ensure the awareness of Gold Standards of counseling provided by Pharmacy Council
- Identify the frequency with which counseling is carried out.
- Rate the perceived importance of any information given.
- Rate the ease/difficulty of carrying out the counseling.

For administration use only be complete by the researcher

PHARMACY CHARACTERISTICS
Date: ------
Pharmacy identification and type: Code number ----
Dispenser of medication:-------
Approximate age of the Pharmacist: young (<35)---- old (>35) ---- Gender: M—F---
Workload level: 1---, 2---- 3----

Directions

Base your assessments on observations made during the dispensing process. For each step choose the relevant statements as is appropriate.

1. Current nature and extent of counseling

1.1. Who is responsible for dispensing medication in your pharmacy?

- ❑ Pharmacist
- ❑ Pharmacist Intern
- ❑ Pharmacist Assistant
- ❑ Other Pharmacy Staff member

1.2. How often do you give counseling to your patient?

- ❑ Spontaneously each time I dispense any drug
- ❑ Only for prescribed drugs
- ❑ When if the patient seeks information

1.3. What kind of information do you often give to your patient?

- ❑ How to take the medicine
- ❑ How to store the medicine
- ❑ Anticipated adverse reactions associated with the medicines
- ❑ Contra-indications of medication
- ❑ Other: specify……

1.4. What other information do you include with the medication?

- ❑ What is the therapeutic objective of the medication
- ❑ What symptoms will disappear and what symptoms will persist
- ❑ How long before the medication takes effect
- ❑ What can happen if the medication is not properly or not used at all

1.5. Which information concerning side effects do you always mention to the patient?

- ❑ What kind of side effects may occur
- ❑ How to recognize them
- ❑ For how long they persist
- ❑ What is the level of seriousness
- ❑ What intervention can patients take to alleviate side effects

1.6. Which of the following instructions with regard to use is necessary to mention on each patient visit?

- ❑ How to take the medication
- ❑ How long should the medication be taken
- ❑ How should the medication be stored
- ❑ What to do with the unused medicine at the end of the treatment

- ❑ When not to take the medication
- ❑ What is the maximal dose
- ❑ Why the medication should be taken in whole course
- ❑ What to do if the medicine is lost or spoiled
- ❑ In what case to consult the doctor or the pharmacist before a next appointment

1.7. How often do you give supplement written information?

- ❑ Always
- ❑ Some of the time
- ❑ Only if the leaflet is not provided with the medicine
- ❑ Only if the patient is a hearing-impaired
- ❑ If the patient asks for it

1.8. How do you assess the understanding of the patient?

- ❑ I question patient
- ❑ I ask them if they understood my counseling
- ❑ I ask them to relate the information back to me

1.9. How do you assess patients' satisfaction with your counseling?

- ❑ I ask them
- ❑ I run surveys
- ❑ I have a feedback box in the pharmacy
- ❑ None of the above

2. Feasibility of counseling in your daily routine

This is to assess whether any of the events mentioned occur.

With reference to your last 5 patients, in how many patients did you accomplish the following items?
(0 = none; 1=one patient; 2=two patients; 3=three patients; 4=four patients; 5=five patients).

The following Drug information items were given to the patient	**Score 0 – 5**
1.□Name, □class and □purpose of medication	
2.□Dosage regimen and □duration of consumption	
3.□Advise on missing a dose	
4.□Side effect profile (management and prevention)	
5.□Drug interactions with other drugs, □with food, □with disease state	
6.□Precautions to be aware of	
7.□Directions for use	
8.□Storage recommendations	
9.□When does the medication begin to work and benefits	
10.□Non-pharmacological Intervention	
Pharmacist behavioural Items	**0 - 5**
1. □Dispenser greeted patient and established comfort level	
2. □Dispenser reviewed the script thoroughly	
3. □Dispenser asked patient a consent for counseling	
4. □Dispenser tried to obtain initial drug related information	
5. □Dispenser introduced generics for substitution	
6. □Dispenser did actual counseling on the medication offered	
7. □ Warning about consuming other drugs simultaneously given	
8. □Clarification of any uncertainties/ confirmation patients understanding of current therapy	
9. □Counseling points summarized	
10. □ Patient invited back	

3. Communication Barriers

Give a relative impact of each factor on your communication with patients
Give a relative estimation (25% =1; 50%=2; 75%=3; 100%=4)

3.1. Pharmacist related barrier

- ❑ Lack of time,
- ❑ Lack of staff,
- ❑ Distractions (noise, phone call, etc)
- ❑ Lack of experience with patient-counseling

3.2. Patient related barrier

- ❑ Patients are in hurry
- ❑ Patients request not to be counseled because they already know about the medication
- ❑ Patients have hearing or language problem
- ❑ Patients have elderly-related cognitive problem

4. Knowledge of Gold Standards on counseling established by the SAPC

Give a relative estimation in difficulty to accomplish the following recommendations of GPP (0%= 0; 25%=1; 50%=2; 75%=3; 100%=4).

4.1. General considerations in communicating with the patient

- ❑ Treating the patient well with respect and interest, and be friendly, caring, and willing to help
- ❑ Having adequate and correct knowledge about the subject under discussion
- ❑ To be relaxed and attentive by maintaining eye contact with patient
- ❑ Being sensitive towards the patients need for privacy and confidentiality
- ❑ Asking open-ended questions and listening and observing without interrupting.

4.2. Special considerations in communicating with the elderly

- ❑ Focus on their abilities, rather than disabilities.
- ❑ Assess them individually and reassess often.
- ❑ If they are unable to give information, use family or caregivers as resources.
- ❑ Need to ensure that the disabled should have easy access and seating.

4.3. Alternative approaches based on special need for the hearing impaired

- ❑ Eliminate as much background noise as possible

- ❑ Augment oral communication with other methods (writing, pictures, signs and gestures)
- ❑ Face the person directly to achieve eye contact and enable lip reading, speak slowly and clearly without shouting, and avoid unnecessary detail

4.4. Alternative approaches based on special need for the visually impairment

- ❑ Take position what needs attention so it's at the centre of the visual field
- ❑ For printed communication, use black printing with larger fronts on white paper

4.5. Alternative approaches based on special need for the cognitive impairment

- ❑ Gain the patient's attention, and address one topic at time by giving simple and relevant information
- ❑ Upgrade the patient communication facilities (e.g. counseling booths)

5. Additional information

5.1. Do you have a copy of SA GPP in your pharmacy?

* Yes

* No

5.2. If no, what is the reason?

……

5.3. Give any suggestion to improve the process of counseling or any additional guideline to insert in the current SA GPP guidelines

……

THANK YOU FOR YOUR CONTRIBUTION

APPENDIX 2: Patient Interview Assessment Instrument

Patient Informed leaflet

Dear Sir, Madam, Miss,

I am a Masters student at the University of The Witwatersrand and I am conducting a survey as part of my research to fulfill the academic requirements of the Master's degree in Pharmaceutical Affairs (Msc Med).

I would appreciate your cooperation and participation in this study.

The purpose of the survey is to assess whether and to what extent patients are counseled on their medication by dispensing pharmacists in community pharmacies.

It is important for me to learn more about what OUR pharmacists do in terms of PATIENT COUNSELING AND ASCERTAIN YOUR OPINIONS ON SOME OF THE MAJOR ISSUES CONCERNING THIS IMPORTANT ELEMENT OF PATIENT CARE.

You have been randomly selected among the patients of this pharmacy as one of the participants for my survey. As a respondent, YOUR opinions and YOUR answers are extremely important in making the results of this study statistically valid. Please note that there are no wrong and right answers.

I would greatly appreciate if you could take some few minutes of your time to complete the attached questionnaire.

It will be of great help if you could answer as honestly and as accurately as possible. This will hopefully, enable me to produce a worthwhile study that can benefit to health care policy in South Africa.

You can be assured that the responses obtained shall remain strictly confidential. Any details or information that identifies you will be withheld from article and thesis publication.

Your participation is strictly voluntary and your right to refuse to participate will be respected.

Thanking you.
Yours Sincerely
Monique Rwabuhungu

Patient Informed Consent Form

Participation in a research study

By signing this form, you are consenting to participate in a research study.

Consent:

a. I have read the description of the research study as outlined above. The study representative has explained the study to me and has answered all of the questions I have at this time.
b. I freely volunteer to participate in this study. I understand that I do not have to take part in this study and that my refusal to participate will involve no penalty or loss of rights to which I am entitled.

Name of Participant: _____

Signature:

Date: _____

Name of person obtaining Consent: _____

Signature:

Date: _____

Contacts:
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Human Research Ethics Committee (Medical)
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Directions

Base your assessments on observations made during the dispensing process. For each step choose the relevant statements as is appropriate.

For administration use only- be completed by the researcher

PHARMACY CHARACTERISTICS
Date: ------ Time:------
Pharmacy identification and type: Code number ----
Dispenser of medication:-------
Approximate age of the Pharmacist: young-----old ---- Gender: M------F
Workload level: 1---, 2---- 3----
Prescription(s) :

Pharmacist Questionnaire

Questions

1. How often do you get your medicines in this pharmacy?
   - ❑ Always
   - ❑ Frequently
   - ❑ Rarely
   - ❑ This is the first time

2. Who dispensed your prescription?
   - ❑ The Pharmacist
   - ❑ The Pharmacist Assistant
   - ❑ The pharmacist Intern
   - ❑ Other staff member
   - ❑ I don't know

3. Did the Pharmacist/person helping you give you any counseling about your medications?
   - ❑ Yes
   - ❑ No

4. If you received counseling, what was the method in which it was given to you?
   - ❑ Written form as a printed label on the packet
   - ❑ Written information on a leaflet
   - ❑ Verbal advice
   - ❑ Both written and verbal advice

5. If verbal advice was given, how were you satisfied with the counseling you received from your pharmacist?

- ❑ Very satisfied
- ❑ Fairly satisfied
- ❑ Neither satisfied nor dissatisfied
- ❑ Not very satisfied
- ❑ Not satisfied

6. If you felt important information was not provided.
   Please specify what you would have liked to know:
   ……
   ……
   ……

7. Describe whether the dispenser mentioned one or more informational topics in the following table

Drug information items	**No =0**	**Yes =1**
1.□Name, □class and □purpose of medication		
2.□Dosage regimen and □duration of consumption		
3.□Advise on missing a dose		
4.□Side effect profile (management and prevention)		
5.□Drug interactions with other drugs, □with food, □with disease state		
6.□Precautions to be aware of		
7.□Directions for use		
8.□Storage recommendations		
9.□When does the medication begin to work and benefits		
10.□Non-pharmacological Intervention		
Pharmacist behavioural Items	**No =0**	**Yes =1**
1. □Dispenser greeted patient and established comfort level		
2. □Dispenser reviewed the script thoroughly		
3. □Dispenser asked patient a consent for counseling		
4. □Dispenser tried to obtain initial drug related information		
5. □Dispenser introduced generics for substitution		
6. □Dispenser did actual counseling on the medication offered		
7. □ Warning about consuming other drugs simultaneously given		
8. □Clarification of any uncertainties /confirmation patients understanding of current therapy		
9. □Counseling points summarized		
10. □ Patient invited back		

3. **Do you have any comments or suggestion about the counseling you received or would like to receive?**

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THANK YOU FOR YOUR CONTRIBUTION

REFERENCES

1. ACP News- Alberta College of Pharmacists Nov/Dec2004.
2. ASHP guidelines on Pharmacist-Conducted Patient Education and Counseling. *Am J Health Syst Pharm 1997*; 54:431-4.
3. Azzopardi L.M. Validation Instruments for Community Pharmacy. Pharmaceutical Care for the Third Millennium. Thesis (doctoral) University of Malta, 2000.
4. Barnett CW, Nykamp D, Ellington AM. Patient-guided Counseling in the Community Pharmacy Setting. *J Am Pharm Assoc*. 2000; 40(6):765-72.
5. Beardsley RS. Communication Skills Development in Colleges of Pharmacy. *Am J Pharm Educ.*2001; 65:302-14.
6. Berger K., Eickhoff C. Counseling Quality in Community Pharmacies: Implementation of the Pseudo Customer Methodology in Germany. *J Clin Pharm Ther,* 2005; 30:45-57.
7. Blenkinsopp A., Panton R.,Anderson C.: Health Promotion for Pharmacists. Second edition. University Press, Oxford 1999.
8. Blumi BM, McKenney JM, Cziraky MJ. Pharmaceutical Care Services and Results in Project Impact Hyperlipidemie, *J Am Pharm Assoc. 2000*; 40: 157-165.
9. Burk M.L. Providing Patients with Medication Information, *The annals of Pharmacotherapy 1998;* 32:962-9.
10. Burroughs V, Maxey R, Levy R. Racial and Ethnic Differences in Response to Medicines: Towards Individualized Pharmaceutical Treatment. *J National Medical Association 2002*; 94(10) suppl.:1-26
11. Chatham “Rocky” M.E. Why Bother with Counseling? www.commcepts.com/articles/0597.htm Accessed:11.02.06
12. De Almeida Neto AC, Kelly F, Benrimoj SI: Shaping Practice Behaviour: Novel Training Methodology. *Int J Pharm Pract* 2001; *9*: 203-210.
13. DowseR.,Ehlers MS; The evaluation of pharmaceutical pictograms in a low-literate. South African Population. Pat Educ Couns, 2001; 45:87-89.
14. Dowse R; Ehlers M. Medecine Labels Incorporating Pictograms: Do They Influence Understanding and Adherence? *Patient Educ Couns.* 2005; 58(1):63-70.

15. Dyck A, Deschamps M., and Taylor J. Pharmacists' Discussions of Medication Side Effects: A Descriptive Study. *Patient Educ Couns.* 2005:56(1):21-7.
16. Futter W.T. Market Management Module, School of Pharmaceutical Sciences, Rhodes University, 1998.
17. Gibbs S, Watters WE, George CF. The benefits of prescription information leaflets (2), *Br J Clin Pharmacol* 1989; 27:345-51.
18. GPP SA; Good Pharmacy Practice in South Africa. Business print centre; 2nd edition; SAPC, 2004.
19. Haynes R. Introduction. In Compliance in Health Care (eds R. Haynes, D. Sackett and D. Taylor), 1979; p1-10.
20. Hepler CD: Pharmaceutical Care and Therapeutic Outcomes Monitoring. *J.Appl Ther,* 1997; 1:285-294.
21. Kairuz T.E. and Naidoo, N.T. Incorporating good pharmaceutical practice in undergraduate education. *The pharmaceutical Journal,* 2000; 265:563-565.
22. Kassam R, Farris KB, Cox CE, Volume CI, Cave A, Schopflocher DP, Tessier G: Tools Used to Help Community Pharmacists Implement Comprehensive Pharmaceutical Care. *J. Am Pharm assoc* 1999*; 39*: 843-856.
23. King JL, Schommer JC, and Wirsching RG; Patients' Knowledge of Medication Care Plans after Hospital Discharge *Am. J. Health Syst. Pharm.,* Jul 1998; 55: 1389 - 1393.
24. Kirking D. Evaluation of an Explanatory Model of Pharmacist'Patient Counseling Activities. *J Soc Adm Pharm 1984*; 2:50-6.
25. Kumminau KS, Yoshinobu BH, Hefley ML. Pharmacist Counseling of Older Patients. *J Am Geriat Soc, 1996*; 44:335-6.
26. Laurie R. Hardin. Counseling Patients with Low Health Literacy. American Journal of Health-System Pharmacy, 2004. Abstract available on www.medscape.com/view.article/499998/. Accessed:20.04.06
27. Leslie Bassin. Pharmacy Info Guide South Africa. A comprehensive directory and quick reference to suppliers, medical aids, pharmacies and general contacts. Edition 2003, Johannesburg.

28. Leventhal H., Diefenbach M and Leventhal E. Illness Cognition: Using Common Sense to Understand Treatment Adherence and Affect Cognition Interaction. *Cognitive Therapy and Research*, 1992; 16: 143-163.
29. Mason HL, Svarstad BL. Medication Counseling Behaviours and Attitudes of Rural Community Pharmacies. *Drug Intell Clin Pham* 1984; 18:409-14.
30. Morgall JM, Almarsdottir AB. No Struggle, No Strength: How Pharmacists Lost Their Monopoly. *Soc Sci Med.* 1999*:* 48: 1247-58.
31. Morris LA, Tabak ER, Gondek K. Counseling Patients about Prescribed Medication: 12-years trends. *Med Care* 1997; 35:996-1007.
32. Myers LB & Midence K, Methodological and Conceptual Issues in Adherence. In Myers LB and Midence K (eds), Harwood, Amsterdam, 1998.
33. Myburgh NG; Solanki GC; Smith MJ; Lalloo R. Patient Satisfaction with Heath Care Providers in South Africa: The Influences of Race and Socioeconomic Status. *Int J Qual Health care,* 2005; 17(6):473-7.
34. NDP SA; National Drug Policy for South Africa, Department of Health, 1996.
35. Nichol MB, Michael LW. Critical Analysis of The content and Enforcement of Mandatory Consultation and Patient Profile Laws. *Ann. Pharmacother*. 1992; 26:1149-55.
36. Paulino E., Bouvy M.L., Gastelurrutia M.A. et al. Drug Related Problems Identified by European Community Pharmacists in Patient Discharged from Hospital. *Pharm World Sci* 2004;26:353-60
37. PEIPB Guidelines on Counseling 2005 www.napra.org/pdfs/provinces/pe Accessed:03.02.06.
38. Petrie A. and Sabin C. Medical Statistics at a Glance; Second Ed. Blackwell Publishing UK, 2005.
39. Pharmaceutical Society of Australia. Standard for Pharmacists Domiciliary Medication Management Review. March 2001Available on www.law.gov.au/privacy. Accessed:02.03.2005
40. Pharmaceutical Society of Australia. The Handling of Confidential Patient Information by Pharmacists. In Pharmacy practice Handbook,Canberra PSA,2000, pp51-52. Available on www.law.gov.au/privacy. Accessed:03.02.06

41. Pilnick A. Patient counseling by pharmacists: Four Approaches to the Delivery of Counseling Sequences and Their Interactional Reception. *Soc Sci Med* 2003; 56:835-49.
42. Pronk M: Implementation of Patient Education in Dutch Community Pharmacies-Development and Evaluation of a New Strategy (Dissertation). Utrecht University: Faculty of Pharmaceutical Sciences, 2002.
43. Raynor DK: Time to redefine "counseling" *Int J Pharm Pract* ,1996; 4: 185-186.
44. Rees J.A. Counseling, In Pharmaceutical Practice. A.J. Winflield and R.M.E. Richards, Churchill Livingstone 3rd edition, 2004; 441-452.
45. Ritchery FJ, Sommers DG. Medical Rationalization and Professional Boundary Maintenance: Physicians and Clinical Pharmacists. *Res Sociol Health Care. 1993*; 117-139.
46. Roter DL, Hall JA, Merisca R, et al. Effectiveness of Interventions to Improve Patient Compliance: a meta-analysis. *Med Care 1998*; 36:1138-61.
47. Rutter PM, Horsley E, Brown DT: Evaluation of Community Pharmacists' Recommendations to Standardized Patient Scenarios. *Ann Pharmacother* ,2004; 38: 1080-1085.
48. Schommer JC and Wiederholt JB: Pharmacists' Perceptions of Patients' Needs for Counseling. *Am J Hosp Pharm* 1994; 51: 478-485.
49. Schommer JC and Wiederholt JB. A field Investigation of Participant and Environment Effects on Pharmacist-Patient Communication in Community Pharmacies. *Med Care* 1995; 35:567-84.
50. Scott DM, Wessels MJ. Impact of OBRA'90 on Pharmacists' Patient Counseling Practices. *J Am Pharm Assoc*. 1997; 37:401-6.
51. Shani S, Morginstin T, Hoffman A. Patients'Perceptions of Drug Therapy Counseling in Israel. *Isr Med Assoc J*. 2000; 2(6):438-441.
52. Sigrist T, Benrimoj SI, Hersberger K, Langford J: Changing Pharmacists' and Pharmacist assistants' Practice in Dealing with Direct Requests for Non-Prescription Analgesics. *Int J Pharm Pract* 2002: 10: 23-29.
53. Sleath B and Campbell W. American pharmacy: A Profession in The Final stage of Dividing*? J Soc Adm Pharm*. 1998; 15: 225-40.

54. Svarstad B.L, Bultman D.C, Mount J.K. Patient Counseling Provided in Community Pharmacies: Effects of State Regulation, Pharmacist Age, and Busyness. *J Am Pharm Assoc*.2004; 44(1):23-28.
55. Svarstad BL. Development of Behavioral Science Curricula and Faculty in Pharmacy: Some Issues Requiring Attention. *Am J Pharm Educ* 1994; 58:177-83.
56. SPSS 11.5 User's manual, 2005. SPSS Inc.
57. Vaino K: Developing Patient Counseling in Finnish Community Pharmacies. Kuopio University Publications A. Pharmaceutical Sciences78. University of Kuopio, Kuopio 2004(in Finnish).
58. WHO/PHARM. The role of the pharmacist in the health care system. In Report of a Third WHO Consultative Group on the role of the pharmacist. Vancouver, CANADA, 27-29 August 1997.
59. Willison DJ and Muzzin LJ: Workload, Data Gathering, and Quality of Community Pharmacists' Advice. *Med care* 1995; 33: 29-40.
60. www.ascp.com/public/pr/guidelines/counseling.shtml Guidelines for Pharmacist Counseling of Geriatric Patients. Accessed: 20.06. 2005.
61. www.fip.org/fip/statements Accessed: 29.05. 2005.
62. www.npcnow.org/ issues_product list/PDF/ Supplement FINAL.pdf. Accessed: 04.02. 2004.
63. www.pharmacouncil.co.za/pharmaciae.article Vol 9 No3 June 2003. Accessed:13.05.05
64. www.pharmacouncil.co.za/Documents Accessed:29.02.06
65. www.ru.co.za/anualreview/ Accessed:29.05.2005
66. www.uams.edv/compliance/define.htm Accessed: 29.05.06.
67. http://en.wikipedia.org/wiki/Gauteng. Accessed:03.01.06