DETERMINING WHAT SERVICES THE PATIENT EXPECTS FROM A COMMUNITY OR HOSPITAL PHARMACIST, AND WHAT THEY ACTUALLY GET FROM THE PHARMACIST.

A Research Report presented

By

Samson Rivombo

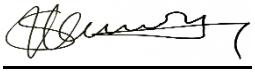
Student Number 302434

A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements of the degree of Master of Science in Medicine (Pharmaceutical Affairs)

Johannesburg, 2021

DECLARATION

I, Samson Rivombo declare that this research report is my own work, unaided work. It is submitted in partial fulfilment of the requirements of the degree Master of Science in Medicine (Pharmaceutical Affairs) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Signature: 

Signed at Johannesburg on the 07th of August 2021.

In memory of my Father

Hlengani Solomon Rivombo

1947-2020

ABSTRACT

Objective: To identify the gaps between patients' expectations and what they actually get from a community or hospital pharmacist. To determine what patients, perceive to be the role of the pharmacist and their satisfaction of the services they receive from pharmacists.

Methods: A prospective cross-sectional quantitative study was undertaken. A suitable questionnaire was developed for the survey from previous research. The reliability and validity of the questionnaire was tested. The study focussed on patient counselling. The questionnaire gauged the opinions of patients as to what they expect from a pharmacist and what they actually got from the pharmacist. Probability values (p-values) were calculated to determine if there was significant difference.

Results: A total of 137 questionnaires were completed in full by patients. The data was analysed using Stata statistical software. The majority (53%) of the patients who participated in the study were male and approximately 70% of the patients were between the ages of 30 to 49 years. The study found significant difference (p=0.000231) between patients' expectations and what they actually got from the pharmacists. The responses of patients from the public hospital pharmacies and private hospital pharmacies differed significantly (p=0.0361). Most of the patients in the private hospital pharmacies had higher expectations and received better service than patients who received services from the public hospital pharmacies. There was no significant difference in the experience of patients in private hospital and retail pharmacies (p=0.6685). A p-value of 0.1925 was obtained when comparing retail/community pharmacies with public hospital pharmacies implying that there was no significant difference in the responses between the retail/community pharmacies and public hospital pharmacies. Overall, 70.8% of the patients were satisfied with the service they received. Almost 90% (87.6 %) of the patients view pharmacist as not only a supplier of prescription medicines but as a health professional who is equipped with knowledge to provide counselling on the appropriate use of medicine and other health matters.

Conclusion: The study found a significant difference between patients' expectations and what they actually get from the pharmacist. Patients are aware of the professional roles and responsibilities of community and hospital pharmacists. While the majority of the patients were satisfied with the service they received, there was a significant number of patients felt that the service they received was poor. Lack or inadequate counselling of patients by pharmacists is still a challenge.

ACKNOWLEDGEMENT

I would like to acknowledge the following:

I would like to thank God for giving me wisdom and strength to complete this work.

Prof M. Danckwerts for the professional support and guidance. This report would not have been possible without your assistance. Thank you very much and God bless you.

My family (wife and kids) for their support, they supported me throughout this journey. I love you.

Participants for taking their time to complete the questionnaire, thank you.

To everyone else who has been part of my life and this work, thank you.
“Akhanimamba”.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APENDICES

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE PROBLEM

1.1 Introduction and background.

Failing interaction between patients and healthcare workers in the health services was found to be the most important cause of treatment failure in Norway (Farup, et al., 2011). The study revealed poor communication and lack of understanding of patients' expectations and needs by health care professionals as some of the important challenges. Similar findings were reported by Jin, et al. (2008) who found that poor communication with healthcare providers including pharmacists, was a contributing factor to patients' non-compliance to therapy and the consequent treatment failures in the United States of America (USA), the United Kingdom (UK), and Australia.

The World Health Organization (2020) describes a pharmacist as an integral member of the health care team. Pharmacists are custodians of medicines, and they play a central role in the research and development of new medicines, manufacturing, distribution, and dispensing of medicines to patients in community, hospital, and other pharmacies. The World Health Organization (2020) further adds that over the years, the role of a community or hospital pharmacist underwent a dramatic shift to become more patient inclusive. The traditional approach of medication compounding and dispensing was deemed inadequate and therefore, a patient centered approach known as pharmaceutical care was adopted to complement the deficiencies. Patient counselling and education, inter alia, were reported by Worley, et al. (2007) as fundamental elements of pharmaceutical care.

The World Health Organization (2006) adds that the pharmaceutical care process involves establishing a relationship between the patient and the pharmacist, developing an evidence-based care plan for medicine therapy and follow-up on the patient's expected health outcome. This is supported by the work of Pathickal, et al. (2016) who found that

active counselling does not only facilitate a clearer understanding of medicines but plays an important role in emphasizing the necessity of medication adherence to achieve the desired patient outcomes.

In the late nineties, Schommer (1997) raised concerns about the apparent lack of patients' understanding about the expanded roles that pharmacists provide. He further added that patients were more likely to portray the pharmacist as a supplier of prescription medicines rather than that of a concerned counselor regarding medications. Similar research findings were reported in South Africa, where it was found that patient care skills of pharmacists have been under-utilized (Malangu, 2014). Masud, et al. (2016), reported that pharmacists in developing countries are still underutilized.

Conversely, the World Health Organization (2006) suggests that in some areas of the Sub-Saharan Africa, community pharmacists are the most accessible health care professionals and often the sole provider of health care advice and services to most patients. This scenario has led to an increase in patient's expectation and reliance on these professionals. Furthermore, a pharmacist can dispense certain drugs for minor ailments without prescription, thus making them the most accessible healthcare providers to the public. Thus, based on the above facts, the importance of the role of the pharmacist in the health care system cannot be overemphasized. This is supported further by Schommer (1997), who documented that patients with high expectations of pharmacist in provision of counselling are more likely to lose trust in the pharmacist if counselling is not provided, than patients with low expectations. Therefore, maintaining patients' trust and expectations are key in achieving the desired outcome when patients are undergoing treatment. Thus, from the above, it is evident that meeting patients' expectations is paramount in improving compliance to drug therapy and ultimately the attainment of the desired clinical outcome.

Despite the role of pharmacists in meeting patient's expectations, lack of communication between patients and pharmacists was found to be a contributing factor to patients' non-compliance to therapy and the consequent treatment failures (Jin, et al., 2008). The same

authors further suggested that good communication helps patients understand their conditions and therapy and therefore pharmacists have a vital role in ensuring that patients understand their medications, which is central to patients' successful treatment outcomes. In the early 1990s, a study undertaken by Lim, et al. (1992) revealed that patients who feel neglected by healthcare professionals tend to be non-compliant to their drug therapy, resulting in treatment failures. These findings demonstrate the need for a good relationship between patients and healthcare providers (pharmacists in particular) to ensure that patients' problems are adequately addressed, and their expectations met.

From the preceding discussion, the following research question was identified:

1.2 Research question.

Does a gap exist between patients' expectations from community or hospital pharmacists and what they actually get from hospital or community pharmacists?

1.3 Aims & objectives.

The main aim of the study is to (i) identify the gap between patients' expectations and what they get from a hospital/community pharmacist, and (ii) to determine what patients perceive to be the role of the pharmacist and their satisfaction of the services they receive from pharmacists.

1.3.1 Objectives.

1.3.1.1 Development of a suitable questionnaire to gauge the opinions of patients as to what information they expect from a pharmacist and what information they get from the pharmacist when filling a prescription.

1.3.1.2 To determine the counseling patients actually get from community or hospital pharmacists when presenting them with a prescription to fill.

1.3.1.3 To determine what patients' perceptions are of the knowledge and role of community or hospital pharmacists.

1.3.1.4 To determine if the socioeconomic status of patients influence their expectations from community or hospital pharmacists.

1.3.1.5 To measure the gap between patients' counseling expectations from pharmacists and what they receive from pharmacists in various practice settings.

1.4 Significance of the study.

Although patient's perceptions about what services the pharmacist provides and patients expectations have been studied in other countries (Merks, et al., 2012; Masud, et al., 2016; Sabater-Galindo, 2016), a literature review revealed a lack of information pertaining to this subject matter in South Africa. The lack of research in this matter is particularly surprising given that studies have emphasized the importance of the role of pharmacist in ensuring effective, rational, and safe use of medicines.

The preceding discussion demonstrates the importance of understanding the needs and expectations of patients so that pharmacists and other healthcare professionals can assist patients to effectively use their medicines to realize the desired patients' health outcomes. Therefore, the current study will identify and explore the gaps between patients' expectations from hospital pharmacists or community pharmacists and what they get from hospital or community pharmacist. The study focuses on the city of Johannesburg.

1.5 Overview of research.

1.5.1 Chapter One- Introduction and background.

Chapter 1 covered the Introduction, the main reason for conducting the study as well as the aim and objectives of the study.

1.5.2 Chapter Two- Literature Survey.

This chapter focuses on exploring the role of pharmacist in patient counselling, factors contributing to the gap between patient expectations and what patients actually get from the pharmacists. Perception of patients on the role of community or hospital pharmacists and the impact of socioeconomic status on their perception will be reviewed. This chapter will end with proposal of strategies to minimize the gap between patients' expectations and what they actually get from community or hospital pharmacists based on literature.

1.5.3 Chapter Three - Research design and methodology.

Chapter 3 provides details of the research design and methodology used in the study. It describes how the survey questionnaire used in the study was developed. The sampling and data collection methods, data analysis including tools used are discussed.

1.5.4 Chapter Four - Presentation, analysis, and discussion of the results.

This chapter presents the results, analyses, and interpretation thereof.

1.5.5 Chapter Five - Conclusion and recommendations.

This chapter presents a summary and conclusions of the discussion in chapter 4. Recommendations based on findings are made.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction.

Pharmacists are custodians of medicines and carry out varied responsibilities in several settings including hospital and community pharmacies. They play a vital role in increasing the rational use of medicine. In hospital and community pharmacies, pharmacists interact with patients and other health care service providers. They provide counselling to patients and educate consumers on the correct use of both over-the counter and prescription medicines. In addition, they advise physicians, nurses and other health professionals on decisions relating to medicines (Arimbawa and Hita, 2019).

The role of pharmacist has evolved over the years and will continue to change alongside the needs and expectations of patients. It has evolved from that of an expert in medicine to that of a patient centered caregiver (John, 2018). In Australia, non-dispensing pharmacists and general practice pharmacists have been integrated into the primary health care system and general practice respectively as part of the team, which further signifies the important role that pharmacists play in attainment of the desired patient outcomes (Benson, et al., 2019).

2.2 The role of pharmacist.

Pharmacists are involved in the discovery, production, distribution and dispensing of medicines (Thamby and Subramani, 2014). Pharmacists play an important role in the health care system and their role has evolved over the years from compounder and dispending pharmacist to one of drug therapy manager. The pharmacist's role has been expanded from a pre-clinical role to include clinical aspects (Thamby and Subramani, 2014). The introduction of pharmaceutical care model in the 90's promoted the pharmacist as a key member of the healthcare team. Pharmaceutical care embodies a patient-centered, outcome-oriented practice of pharmacy.

Community and hospital pharmacists provide patient counselling and education, drug monitoring, provision of drug information, diseases management, public health promotion and formulary management (Alberkairy, 2014).

The head of World Health Organization (2015) reported that over a quarter (26%) of South Africans in 2015 were living with hypertension and over seven million with HIV (Statistics SA, 2018a). Over the past two decades, South Africa has seen an increase in the number of people of patients taking multiple chronic medications (Kettledas, 2016). Ensuring medication safety in polypharmacy is one of the important challenges for medication safety today (Kettledas, 2016). There is a growing need to closely monitor patients due to the increased burden of chronic diseases in order to minimize the cost of medicine related problems. In the USA, it is estimated that the annual cost of medicine related problems in outpatients was close to 200 billion dollars (Zeind and McCloskey, 2006). This highlights the important role that pharmacists can play to minimize challenges emanating from drug multiple drug therapy.

The evolution of the pharmacy profession led to the introduction of the seven-star Pharmacist concept by World Health Organization. This concept describes seven roles of the pharmacist. This concept has been summarized by Thamby and Subramani (2014) as follows:

(i) Caregiver,

Pharmacists are part of the health care system and provide caring services to the patients.

(ii) Teacher,

Pharmacists should promote public health by educating public on health care matters. This is in addition to training future generation of pharmacists.

(iii) Communicator,

Effective communication is an essential element of pharmaceutical care. Strong communication skills enable pharmacists to collect accurate and comprehensive information about the patients and to provide patient specific information. The pharmacist should reinforce the instructions given by doctors and communicate effectively with other healthcare professionals.

(iv) Decision-maker,

Pharmacists are involved in decision making, weather dealing with patients or in policy making. Pharmacists evaluate patient information and make decisions that are in the interest of the patient regarding cost-effective use of resources.

(v) Leader,

The Pharmacist is an integral part of the healthcare system and creates a high-performance pharmacy practices characterized by high quality patient care and improved medicine safety. Pharmacists in community pharmacies are leaders and should consistently motivate their staff to ensure high level of patient care.

(vi) Lifelong learner,

Pharmacist regularly update their knowledge to keep up with the current trends in issues related to drug-therapy.

(vii) Manager.

Pharmacist manages drug label information to ensure quality of medicines. Furthermore, pharmacists manage resources including human and financial resources (Thamby and Subramani, 2014).

2.3 Patients' perception of the role of pharmacist and how their expectations of pharmacists' services are formed.

2.3.1 Patients' perception of the role of pharmacist

The pharmacy profession has undergone significant changes over the past two to three decades (John, 2018). Khan, et al. (2013) raised concerns that in Pakistan, most patients were still not aware of the pharmaceutical care services. A study undertaken by Gould (2013) in Canada found that patients were not aware of the enhanced services and professional roles and responsibilities of community and hospital pharmacists. Conversely, a study undertaken in Japan, Oshima, et al. (2019) found that patients expected pharmacists to play an even more advanced role than before. Similarly, a study in Qatar found that patients in a private health care setting were aware of the pharmacist's role with respect to pharmaceutical care and the majority were more interested in getting medicine information from pharmacists than other healthcare professionals (Wilbur, et al., 2010). Bornman, et al. (2006) found that the majority of patients in South Africa rely on community pharmacies to access medicines for treatment of minor illnesses. Bornman, et al. (2006) further added that patients believed that pharmacists play an important role in delivering health care.

The above examples demonstrate that pharmacists are regarded as important members of the healthcare team. Patients' expectations from the pharmacist seems to be influenced by the patient's knowledge and their understanding of what the pharmacist's role should be.

2.3.2 How patients' expectations of pharmacist services are formed.

A study by Schommer (1997) found that need for cognition exerted the strongest effect on patient expectation for counselling from a pharmacist. Individuals with a low need for cognition may possess low expectations for counselling. Nicholas, et al. (2017) found that patients of lower socioeconomic status perceived themselves as inferior and this affected

how they interacted with health care professionals. They lacked interest to understand their medications and to engage with pharmacists. Another factor that affects patients' expectation is previous counselling experience. Patients who had received counselling in the past will have expectation that pharmacist will provide counselling (Schommer, 1997). These factors, inter alia, have impact on patients' expectation from pharmacists.

2.4 The impact of socio-economic status of patients on their expectations from pharmacist.

Sahni, et al. (2017) defines socioeconomic status as a measure of an individual's economic position or rank in a social group. Sahni, et al (2017) added that socioeconomic status is a composite of several measures including income, education, occupation, location of residence or housing. The above is echoed by Bosworth (2018) who suggested that socioeconomic status can be assessed in terms of income, education, or occupation. Bosworth (2018) further added that socioeconomic status has impact on health as it influences health behaviour and the level of health care received. Bosworth (2018) suggests that the rich live longer than the poor and raised concerns with the growing gap in income distribution.

Nicholas, et al. (2017) suggests that socioeconomic status of patients affect their health outcomes and the care they receive. The authors found that some of the patients with low socioeconomic status perceived themselves as inferior and this has a potentially to worsen the health care outcomes due to noncompliance to the prescribed treatment. Furthermore, this perception influences their interaction with healthcare professional. The perceived healthcare disparities could further lead to patients avoiding or delaying seeking healthcare altogether.

In the past, people of low socioeconomic standing were associated with low life expectancy, suffered more from chronic conditions and high death rate. People with higher incomes were observed to survive better owing to better access to health care (Arpey, et al. 2017). The high illness rate was attributed to poor nutrition, unemployment,

poor living condition, inter alia. Additionally, the prevalence of some diseases was higher in groups of lower socioeconomic standing (Arpey, et al, 2017).
The above literature demonstrates that socioeconomic status of an individual has an influence on individual's perception of healthcare services and healthcare professionals.

2.4.1 The role of pharmacists in bridging the gaps in healthcare inequality.

Globally, inequities exist in health and health care. The World Health Organization (2018) suggests that that ample evidence that social factors, including education, employment status, income level, gender and ethnicity have a marked influence on how healthy a person is. The world body further adds that the wide disparities in health status of different social groups exist in all countries, whether low-, middle- or high-income country.

In South Africa, the well-funded private sector attracts majority of the country's health professionals and there is a shortage and maldistribution of key healthcare workers, including pharmacists across rural and public sector divides (Ward, et al. 2014). Statistics SA (2018b) reported that approximately 20% (I in 5) and 49% (1 in 2) of South Africans aged 18 years and older were living below the food poverty line (less than R441 per person per month) and below the upper-bound poverty line (R992 per person per month) in 2014-2015 respectively. This suggests that the majority of the South African population live below the upper-bound poverty line since minors (below 18 years) would not be in employment. Thus, the majority of South African would be dependent on public facilities for healthcare.

Spears (2010) suggests that pharmacists are uniquely positioned to improve and promote equitable healthcare because they are affordable and accessible healthcare resource and for most patients easier to consult than doctors. Furthermore, regulatory changes have been made to the medicine and related substance control act, 1965, and to the pharmacy Act, 1974, to promote the equitable distribution of pharmaceutical services and enhanced access to medicines to authorize pharmacists with requisite training working in rural community pharmacies, to diagnose ailments and prescribe medicine beyond their

traditional scope (Ward, et al. 2014). The preceding discussion demonstrates that pharmacists have a vital role to play in minimizing the challenges brought about by socioeconomic standing of patients.

2.5 Patient counselling.

In the nineties, Holland (1993) defined patient counselling as an interactive process between a healthcare professional and a patient where the healthcare professional transfers medicine and health information to a patient. Within the pharmacy profession, counselling is a process of giving professional advice relating to drug products/medicines and other health related matters. Palaian, et al. (2006) defined counselling as the provision of drug information either in a written form or orally to patients or their representatives. This includes information on diseases and the correct use of drugs, i.e., directions of use, information relating to side effects, storage, disposal, diet, and lifestyle modifications. More recently, Puvvada and Mukhukumar (2018) defined counselling as a sympathetic interaction between pharmacist and patient which goes beyond conveying of straight forward information about the drug and how and when to use it. Effective counselling should include all information that makes the patient understand his/her condition and the required intervention/treatment (Puvvada and Mukhukumar, 2018). The definitions above are similar in that they all refer to an interaction between a pharmacist and a patient in which medicine and health information is transferred to the patient.

The evolution of the pharmacy profession has led to the embracement of the patient counselling concept. While patient counselling has been embraced by the profession in principle, Holland (1993) raised concerns that the lack of framework to ensure this activity is incentivized left it to be performed as good will of the individual dispensing pharmacist. Today, the same challenges still exist. In a study undertaken by Alshayban, et al. (2020), the patients considered counselling as an important service, however, less than a third of the patients indicated that they were willing to pay for the counselling service. The South African Pharmacy Council developed a guideline for Good Pharmacy Practice in South Africa with associated rules (South African Pharmacy Council, 2018). The guideline

includes the requirement for patient counselling and the points to be covered, however, it is still left to the pharmacist as a professional responsibility to provide counselling. The counselling as well may be tailored to the needs of the patient.

The World Health Organization (2003) found patient non-compliance towards the prescribed treatment as an important contributor to treatment failures. The rational use of medicines is critical for successful therapeutic outcome. Palaian, et al. (2006) defines patient compliance as the adherence of a patient towards prescriber's instructions. This could be described as an understanding of how the drug should be taken as well as patient's motivation to use the prescribed drugs as intended because of a perceived self-benefit and a positive outcome.

2.5.1 Why is patient counselling by pharmacists important?

Effective patient counselling minimizes the risk associated with medicine errors or drug misuse. Patient counselling increases compliance by reinforcing instructions given to patients by medical doctors and other healthcare professionals. Makary and Daniel (2016) estimates deaths due to medical errors to have been in excess of 250 000 in 2016 in the USA, making it the third cause of death in that country. Medical errors include incorrect dosage, incorrect medication, surgical errors, misdiagnosis amongst others. The study argued that the deaths directly attributed to medical errors have not been recognized in any standardized method for collecting national statistics as the billing codes used did not provide for reporting of deaths due to medical errors. The World Health Organization (2019) estimates that adverse events are the 14th leading cause of morbidity and mortality in the world, putting patient harm in the same league as tuberculosis and malaria.

Makholwa-Moabelo (2014) reported that in 2014 the incidence of clinical negligence and medical errors in African countries, including South, Africa was unknown due to absence of accurate statistics. This view is supported by a recent study in South Africa by Schellack, et al. (2020) who echoed that medication errors elicit guilt and fear for

humiliation and litigation thereby resulting in under-reporting. The reported legal claims in excess of 5 billion rand in Gauteng and Kwazulu-Natal alone in 2014 indicate a dire situation in South Africa (Makholwa-Moabelo, 2014). The situation may be exacerbated by inadequate resources in terms of facilities and health care professionals in South Africa (Makholwa-Moabelo, 2014).

Schellack, et al. (2020) describes medication errors stemming from failure by pharmacists to perform a final product check or to perform proper patient counselling. A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems, including prescribing, order communication, product labeling, packaging, and nomenclature, compounding, dispensing, distribution, administration, education, monitoring, and use (National Coordinating Council for Medication Error Reporting and Prevention, 2021.)

Medication dispensing errors exist, including prescribing incorrect drugs, administering wrong drug or incorrect dose or duration of treatment, mislabeling of drugs by pharmacists, dispensing to the wrong patient, dispensing expired medicines, omission, or even prescribing and issuing a drug to which the patient is allergic (Schellack, et al. 2020).

Other type of errors may include:

- Drug interactions, that is, not considering other medication that the patient uses.
- Failure to warn the patient of severe side effects of a specific drug.
- Prescribing and dispensing a drug for a condition which the test results are negative (Makary and Daniel, 2016).

The South African Pharmacy Council (2018) has developed a guideline/rules relating to the code of conduct for pharmacists and other persons registered in terms of the Pharmacy Act 53 of 1974: the Pharmacy Act, as amended. The intent was to set standard of professional conduct for pharmacists and other registered persons on matters relating

to good pharmacy practice including dispensing and patient counselling (South African Pharmacy Council, 2018). The Good Pharmacy Practice guideline states that counselling should cover matters that enhances medicine therapy and suggested that the counselling session should include at minimum the following:

- Name and description of the medicines
- Dosage form and dose,
- Route of administration
- Duration of treatment
- Intended use of the medicine(s) and expected action.
- Special directions and precautions for preparation, administration and use by the patient.
- Common severe side or adverse effects
- Interactions: any relevant drug/drug, drug/food, drug/alcohol interactions
- Contraindications that may be encountered and details of how to deal with them.
- Techniques for self-monitoring of medicine therapy
- Storage conditions of medicines
- Prescription repeat information.
- Actions to be taken in the event of a missed dose or in the event of overdose.
- Additional information as necessary (South African Pharmacy Council, 2018)

Palainan, et al. (2006) proposed similar points that should be discussed during patient counselling except for the “intended use of medicine and expected action”; and “prescription repeat information”. The information on the “intended use of medicine and expected action is particularly important when patients are taking multiple medicines. This information empowers patients to make the right decisions, for an example, stop pain medicine when they do no longer need it. Similarly, prescription repeat information is crucial to ensure that patients understand the importance of adhering to their treatment to their conditions are kept under control. Furthermore, the incidents of drug resistance

could possibly be minimized when patients are aware of their conditions and the long-term management thereof.

The survey questionnaire used for the study was developed based on these points, inter alia.

2.5.2 Barriers to patient counselling.

The benefit of patient counselling by pharmacist is well established in literature (Zerafa, 2011; Albekairy, 2014; Amvgn, et al, 2017). Adepu and Nagavi (2009) argue that although patient counselling has been identified as an important component of pharmaceutical care, barriers to counselling, many of which are provider based still present a challenge.

These barriers may range from:

2.5.2.1 Provider-based barriers.

2.5.2.1.1 Lack of incentive for patient counselling.

Although patient counselling is regarded as a professional duty (SAPC, 2018), there is currently no quality control over the counselling provided. Lack of incentive for this activity leaves this activity performed at the will of the pharmacist.

2.5.2.1.2 Shortage of pharmacists and lack of time.

Pharmacists are a key component of the healthcare workforce, and in many countries, pharmacists are the most accessible healthcare profession (Bates, et al. 2016). The shortage of pharmacists in South Africa and many African countries has emerged as one of the major impediments to appropriate health care service delivery (Bates, et al. 2016). Currently, South Africa has less than 20 000 Pharmacists registered with the SAPC serving a population of almost 60 million.

This translates to an average of 33 per 100 000 people, which is far less than the required number of 50 pharmacists per 100 000 people recommended by the World Health Organization (2020). These estimates however do not consider the number of pharmacists who are registered but not actively practicing in addition to pharmacists who are practicing in sectors (e.g., pharmaceutical industry) which do not directly involve patients.

The maldistribution of pharmacists remains a challenge in South Africa. The well-funded private sector attracts the majority of the healthcare workers (Ward, et al. 2014). According to Ranchod, et al. (2017), public hospitals care for about 84% of South Africans. The shortage of pharmacists in South Africa further adds to the already dire situation in the public sector and undermines the efforts by government to reduce inequality between the sectors.

2.5.2.1.3 Lack of interest.

The provision of counselling is dependent on the attitude of the pharmacist and willingness to provide it. Similar concerns were raised by Holland (1993) that pharmacists tended to tailor patient counselling to their own need rather than those of patients. The author further added that the lack of commitment to patient counselling was a challenge that pharmacists needed to overcome. Similar challenges still exist today.

2.5.2.1.4 Language barrier.

With eleven official languages in South Africa, it is not unexpected that communication can be a major barrier to patient counselling. The placement of community service pharmacists is determined by the National Department of Health. Although efforts are made to meet both Pharmacist and Government's needs, it is inevitable that some pharmacists will be placed in communities where they are neither familiar with the language nor the culture of the people. It was

estimated that over three million South Africans could neither read nor write, thus language can become a critical barrier to patient counselling (Newman, 2018).

2.5.2.1.5 Physical barriers.

Physical barriers include lack of private areas to provide counseling, distracting noise, etc. These factors may cause a patient to decline an offer for counseling even when it could be required. The SAPC sets out the design requirements for the pharmacy including recommendations for the counseling area to ensure effective counselling (South African Pharmacy Council, 2018).

2.5.2.2 Patient barriers.

2.5.2.2.1 Patient's lack of interest.

While pharmacist may be keen to offer counseling, the patient may not be interested or find it necessary (Alberkairy, 2014).

2.5.3 Narrowing the gap between patients' expectations and what they actual get from community or hospital pharmacists.

Patient counselling is an important component of pharmaceutical care and has been associated with improved patient compliance to drug therapy and better patient outcomes. Gould, et al. (2013) suggest that pharmacists can best fulfill their role if they understand what the patients expect from them. Borgsteede, et al. (2011) found that the majority of the interviewed patients during counselling on discharge wanted information relating to their medication such as side effects and alternatives. Gould, et al. (2013) further adds that others wanted detailed information while others were satisfied with basic information. Gould, et al. (2013) proposed that pharmacists should understand individual patient's needs to effectively counsel patients. Thus, pharmacists should be willing to

listen and seek to understand what patients view as important not what they feel it is important for patients.

The level of patient satisfaction provides an indication of quality of care received by patients from their perspective. It may further predict how patients will behave after receiving services (Gould, et al, 2013). Measuring patient satisfaction could assist pharmacists identify areas for improvement.

2.6 Conclusion.

The pharmacy profession has undergone significant changes over the past two to three decades where the role a pharmacist has shifted from being drug orientated to patient centered pharmaceutical care. Pharmacists are regarded as important members of the healthcare team, however, their full scope within the healthcare system is still not well understood. Patients' expectations from the pharmacists seems to be influenced by patients' knowledge and their understanding of what the pharmacist's role should be. To effectively counsel patients, pharmacists should understand individual patient's needs. Pharmacists should be willing to listen and seek to understand what patients view as important not what they feel it is important for patients. Barriers to counselling were identified and include lack of patient interest, lack of incentive for patient counseling, language barriers and physical barriers such as lack of private areas for counselling. Effective patient counselling has been associated with drug therapy compliance and positive treatment outcomes. Pharmacists should endeavor to overcome these challenges to ensure that the desired treatment outcome is realized.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction.

In the preceding chapter, key elements in the process of patient counseling were identified. In order to determine the gap in what patients expect from pharmacists in various settings and what the pharmacists give the patient, a suitable survey questionnaire (Appendix 4 and 5) was developed based on the literature review.

3.2 Ethical consideration.

Researchers are obliged to consider the implication of their proposed research for the participants. The University of the Witwatersrand requires all researchers to obtain ethics clearance before undertaking any research involving human subjects. Ethics clearance application was submitted to the University of the Witwatersrand Human Research Ethics Committee. Ethics clearance was obtained for the current study (Appendix 1).

3.3 Research design.

A research design refers to a master plan for conducting research. It is a plan for answering research question using empirical data (Welman, et al., 2005). The research design includes the selection of the research approach, study population and selection of participants to collect data from, data collection procedures, and data analysis, amongst others (Welman, et al., 2005). A cross-sectional design was selected for this study. This design entails collecting data at one point. Survey techniques are used to gather data and they are relatively inexpensive and take little time to conduct. Cross-sectional studies measures existing differences between or from a variety of subjects, phenomena. This design further allows data collection and comparison between different groups (Welman, et al. 2005)

3.4 Demarcation of the research.

To ensure the research is manageable, the research was undertaken in the city of Johannesburg, Gauteng province, South Africa. The demarcation considered resource constraints facing the researcher. The study population comprised of all patients over the age of 18 visiting pharmacies in the city of Johannesburg. A minimum sample size of 96 was determined (section 3.10.1).

3.4.1 Setting.

Patients visiting pharmacies were approached outside pharmacy premises and requested to participate in the study. Participation was completely voluntary.

3.5 Study population and sampling.

Burns and Grove (2001) defined a population as a group of people who share common traits and attributes of interest to the researcher. In this study, the population was pharmacy visiting patients in the city of Johannesburg.

3.5.1 Sample size and type of sampling.

3.5.1.1 Sample size.

Given that the population size is unknown, the sample size calculation for the unknown finite population is given by the formula below. The population can be estimated at 20 000 since the sample size does not change significantly for populations larger than 20 000).

$$n = \frac{Z_{1-\alpha/2}^2 \, p \, (1-p)}{d^2}$$

Where,

n = sample size.

$Z_{1-\alpha/2}$ = 1.96 at 95 % confidence level.

P = is the expected proportion in population based on previous studies. p-value of 0.5 is used when p-value is not known.
d = is the absolute error or precision and has to be decided by the researcher. Margin of error I am willing to accept = 10%

Thus n = $\frac{1.96^2 \times 0.5\ (1.0.5)}{0.1}$ = 96 Patients,

i.e., 96 surveys or more are required to have a confidence level of 95%

3.5.1.2 Sample categories.

A stratified sampling technique was followed where the following number of questionnaires were allocated to be used outside the following group of Pharmacies. The selection of pharmacy followed a convenience sampling.

Hospital (Public)	- Public Hospital Pharmacy 1 = 16 participants
	- Public Hospital Pharmacy 2 = 16 participants
Hospital (private)	- Private Hospital Pharmacy 1 = 16 participants
	- Private Hospital Pharmacy 2 = 16 participants
Community	- Chain stores = 16 Participants
	- Independent Pharmacy =16 Participants

A minimum of 16 participants were surveyed for each pharmacy.

3.5.1.3 Subjects/Patients and inclusion criteria.

Adult (above 18) pharmacy visiting patients (both male and female). Patients able to understand English and IsiZulu. Patients who have had a prescription filled within the last twelve months.

Exclusion criteria: Patients below the age of 18.

3.6 The questionnaire as a tool for data collection.

The questionnaire (Appendix 4 and 5) was developed based on previous research as a tool for data collection. Welman, et al. (2005) recommends that the eyesight and literacy level of the intended patients be considered when developing a questionnaire. Taking into consideration the literacy level of the intended participants, the questionnaire was made available in English (Appendix 4) and IsiZulu (Appendix 5). Selection of Zulu was based on its dominance in Johannesburg after English. Zulu is the most widely spoken language in South Africa, and in Johannesburg. It is further suggested half of South African's population understands Zulu (Statistics South Africa, 2016).

Welman, et al. (2005) suggested that following should be taken into consideration when developing the questionnaire:

(i) The questions should be kept brief and clear as possible.
(ii) The questions should be neutral, i.e. Should not be formulated in a way that encourages patients to answer in a specific way.
(iii) Questionnaire should look professional.
(iv) The questionnaire should be developed with the patients in mind, i.e., the level of literacy of the patients should be considered.

The questionnaire was developed by the researcher based on previous research. The questionnaire is divided into six sections: A to E (Appendix 4 and 5).

Section A

This section was intended to collect biographical data of the participants. This includes race, age group, level of education, etc.

Section B

Section B of the questionnaire identified key elements of a counselling session as recommended in the Good Pharmacy Practice in South Africa guideline and literature. To determine what patients expect from pharmacists, patients were requested to rate the

importance of each point in section B according to whether they Strongly agree, Agree, Uncertain, Disagree, or Strongly disagree, i.e. five point Likert scale.

Section C

Section C of the questionnaire was intended to assess if the pharmacists met patients' expectation by asking the level of information provided by the pharmacists for each point. The gap between patient expectations and what they actually got was established.

Section D

Section D was intended to measure patients' satisfaction level. Gould, et al. (2013) suggests that satisfied patients are more likely to comply with the treatment plan. Patients' satisfaction level can be influenced by operational issues such as waiting times, as well as information received.

Section E

This section was intended to assess the knowledge and perception of patients about the role of pharmacist. Section E was focused on the role of the pharmacist.

All the questions/statements on the questionnaire were closed-ended. Welman, et al. (2005) suggests it is very easier to compare responses when using closed-ended questions. A five-point Likert scale was used which ranged from "not important" to "very important", "very poor" to " excellent", "strongly agree" to "strongly disagree", etc.

3.7 Pilot study in the development of the questionnaire.

Welman, et al. (2005) recommends that a new questionnaire must be tested before it is administered to the sample. This ensures flaws and unclear instructions are detected and corrected prior to conducting the study. To determine if the questionnaire collects the data that is expected, a pilot study of 4 participants per group of pharmacies (n=24) was conducted and results analyzed. Hard copies were issued to participants to complete. The participants were patients in the different groups of pharmacies. A few participants

(6/24) commented that the questionnaire was long. Overall, patients indicated that the questions were clear. Thus, no major changes were made to the questionnaire.

3.8 Reliability and validity of the questionnaire.

A questionnaire is considered reliable if comparable results are obtained from the same respondents irrespective of when the questionnaire is administered (Welman, et al. 2005). The reliability of the questionnaire was tested by administering the questionnaire to five respondents and on two occasions (different days) and the results were compared and the majority of the responses were found to be similar. Morrison (2021) notes that the memory effects may influence the results. If the participants respond to the survey questions the second time in the same way they remember responding the first time, this will give an artificial good impression of reliability. Validity of the instrument is described as the extent to which research findings accurately represent what is happening in the real situation (Welman, et al. 2005). Taherdoost (2016) defines content validity as the degree to which items in an instrument reflect the content universe to which the instrument will be generalized. This involves evaluation of a new survey instrument to ensure that it includes all the items that are essentially and eliminates undesirable items. Taherdoost (2016) further adds that the validity of the survey instrument can be established by literature review, and review by expert in the same field of the research. The validity of the measuring instrument was developed based on literature and was reviewed by the research supervisor.

3.8.1 Bias

Bias occurs when a systematic error is introduced in a research by selecting or encouraging one outcome or answers over others (Pannucci and Wilkins, 2010). Standardized data collection methods including questionnaire can minimize bias during data collection (Smith and Noble, 2014). A survey questionnaire with closed-ended questions was developed based on literature for this study. The closed-ended questions minimize interviewer bias as results are reported as they are. According to Pannucci and

Wilkins (2010), selection bias occurs when the criteria used to recruit and enroll patients into separate study cohorts are not clearly defined and inherently different. The study population and sampling method were clearly defined and followed.

3.9 Anonymity and confidentiality.

The questionnaires did not require identifiable personal information of the participants. The Study Information Documents that were issued together with the questionnaires guaranteed the participants that all the responses are kept confidential and will be reported as a collective. The names of the surveyed pharmacies will also be kept confidential. The questionnaires with the Study Information Documents were uploaded to RedCap to allow online survey completion.

3.10 Data collection and management.

3.10.1 Data collection

The survey questionnaire in English (Appendix 4) and Zulu (Appendix 5) was used for data collection. A questionnaire requires less time and is easier to administer. Additionally, questionnaires reduce/eliminate interviewer bias and offer complete anonymity (Ingham-Broomfield, 2008).

Patients were approached outside the premises of the selected institutions or pharmacies in Johannesburg and requested to participate. Participation was completely voluntary. Two public hospital pharmacies, two private hospital pharmacies and two community pharmacies (one chain store pharmacy and one private pharmacy) were selected for the study. The selected pharmacies are not disclosed to maintain anonymity. Each patient was issued with hard copies of a Study Information Document (Appendix 2 or 3) and questionnaire (Appendix 4 or 5). Completed questionnaires were returned to the researcher. An option was offered to patients to take the survey online at the comfort of their own homes using a RedCap link. The study information documents provided

participants with details of the study including contact details of the investigator, Supervisor and Human Research Ethics Committee of the University of the Witwatersrand, Johannesburg.

Hardcopies of the survey questionnaires were handed to patients outside the premises of the hospital or community pharmacies. To ensure participants were comfortable when completing questionnaires, the researcher provided a chair and a table for the patients to complete the questionnaires. The completed questionnaires were handed back to the researcher. Patients who selected to complete the questionnaire at the comfort of their homes were given a link to the online survey on redcap. Majority of the patients selected to complete the online survey.

3.10.2 Data analysis.

The data was analyzed by the researcher using Stata statistical software. To determine if patients' needs were met by pharmacists, a gap analysis was conducted between what patients deemed important and what they got from the pharmacists. The probability values (p-values) were calculated for the difference in the scores between sections B and C to determine if there were significant difference. The formula for a z-value for two proportions is

$$Z = \frac{(\hat{p}_1 - \hat{p}_2) - 0}{\sqrt{\hat{p}(1-\hat{p})\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

Equation 3.1

where $\hat{p}$ are sample proportions, i.e., x/n * 100.

n_1 and n_2 are sample sizes and $\bar{p}$ is the pooled proportion.

$$\bar{p} = \frac{X_1 + X_2}{N_1 + N_2}$$

Equation 3.2

is the pooled proportion.

Where X_1 and X_2 are proportions, and N_1 and N_2 are sample sizes.

Secondly, the results were analyzed according to the various groups of pharmacies to determine if there is any significant difference (student t values) in the expectations from patients. The groupings that were used were public hospital pharmacies, private hospital pharmacies, and community pharmacies. A two-sample t-test was performed to compare the averages of the responses using the formula below.

$$t = \frac{(\overline{X}_1 - \overline{X}_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Equation 3.3

Where $\overline{x}_1$ and $\overline{x}_2$ are the sample means, n_1 and n_2 are the sample sizes, and s_1^2 and s_2^2 are the sample variances.

The results are presented, analysed, and discussed in chapter four.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSION OF THE RESULTS

4.1 Introduction.

In this chapter, the results are presented, analysed, and discussed.

4.1.1 The overall response rate.

A survey questionnaire was used as a data collection instrument. De Vos, et al. (2002) suggests that a response of above 60% is a good response while 70% and above is considered as excellent. Lindemann (2019), however, argues that a study with lower response rate may still have more accurate measurements. A minimum sample size of 96 was determined, which translated to a minimum of 32 patients per each of the three pharmacy categories. A total of 300 questionnaires were prepared, i.e., 100 for each category of pharmacy. At least 100 patients in each pharmacy category were approached and requested to participate in the study. A total of 257 patients agreed to participate in the study and were issued with hard copies of the questionnaires together with the study information documents and a link to the online questionnaire. The questionnaires were completed over a period of six weeks. Of the 257, 215 (86%) of the patients attempted the survey. Of the 215 attempts, 137 (63.7%) were completed in full. The majority of the incomplete questionnaires had only biographical data section completed and were therefore excluded from the study. This level of response is considered a good response.

4.2. Biographical information

A minimum sample size of 96 was determined. To meet this requirement, a minimum of 32 responses per each of the three pharmacy categories was required. A minimum of 32 responses were received for each category with the majority (69/137) of the responses coming from the retail pharmacies (chain store and independent pharmacies). A total 32

and 36 responses were received from public hospital pharmacies and private hospital pharmacies, respectively.

The majority (53%) of the patients who participated in the study were male. These statistics are similar to the census results reported by Statistics SA (2016) who found that Gauteng had 50.4% males and 49.6% females in 2016. These results differed slightly with the country's statistics of 49 % males and 51% females. The patients were between the ages of 18 to 60 years old with the majority (69.4%) of patients between the ages of 30-49 years. Statistics SA (2016) reported that the working age 15-64 years old constitute over two thirds of the population in Gauteng. Most of the patients who participated in the survey were African (84.7%), followed by White (8.8%), Indians (3.6%), and coloured (2,9%), respectively. Similarly, the results from census 2016 show Africans to be the majority at 80,4% followed by white at 13,6%, Indians at 2,7 % and coloured at 3,3 % (Statistics SA, 2016). Thus, the sample the characteristics of the sample are similar to that of the actual population, and thus may be a good representative of the actual population.

The biographical information is summarized in Table 4.1.

Table 4.1 Biographical information

Number of patients who completed the questionnaire per each pharmacy category	**Number of patients**	**Percentage**
Public Hospital Pharmacy	32	23.4%
Private Hospital Pharmacy	36	26.3%
Retail Pharmacies (Chain-store & Independent pharmacies)	69	50.3%
Total	137	100%
Gender of the patients	**Number of patients**	**Percentage**
Male	72	53%
Female	65	47%

Table 4.1 continues…

Age category of the patients		
Less than 20 years	2	1.5%
20 to 29 years	22	16.1%
30 to 39 years	63	46.0%
40 to 49 years	32	23.4%
50 to 59 years	14	10.2%
60 + years	4	2.9%
Racial Groups of the patients		
African	116	84,7%
White	12	8,8%
Indian	5	3,6%
Coloured	4	2,9%
Education level of the patients		
No education	3	2%
Primary and secondary	33	24%
Tertiary	101	74%

4.2.1 The level of education of the patients.

The results in Figure 4.1 shows that the majority of the patients using the public hospital pharmacies have no tertiary education while the opposite is the case with patients in private hospital and retail pharmacies. The high number of patients with tertiary qualifications in the private hospital pharmacies is not unexpected given that the private hospital caters to a population that tends to be wealthier, more educated, formally employed and with medical aid (Ranchod, et al. 2017). The overall results may suggest that the population has high number of people with tertiary education, which is not the case. The unusually high level of patients to the survey having a tertiary education may possibly be due to the high number of patients coming from the retail and private pharmacies. It is also possible that the respondents to the survey having a tertiary education could be the ones who most likely completed the survey. The results from different categories were compared in terms of percentages.

Figure 4.1 presents the educational level of patients who took part in the survey.

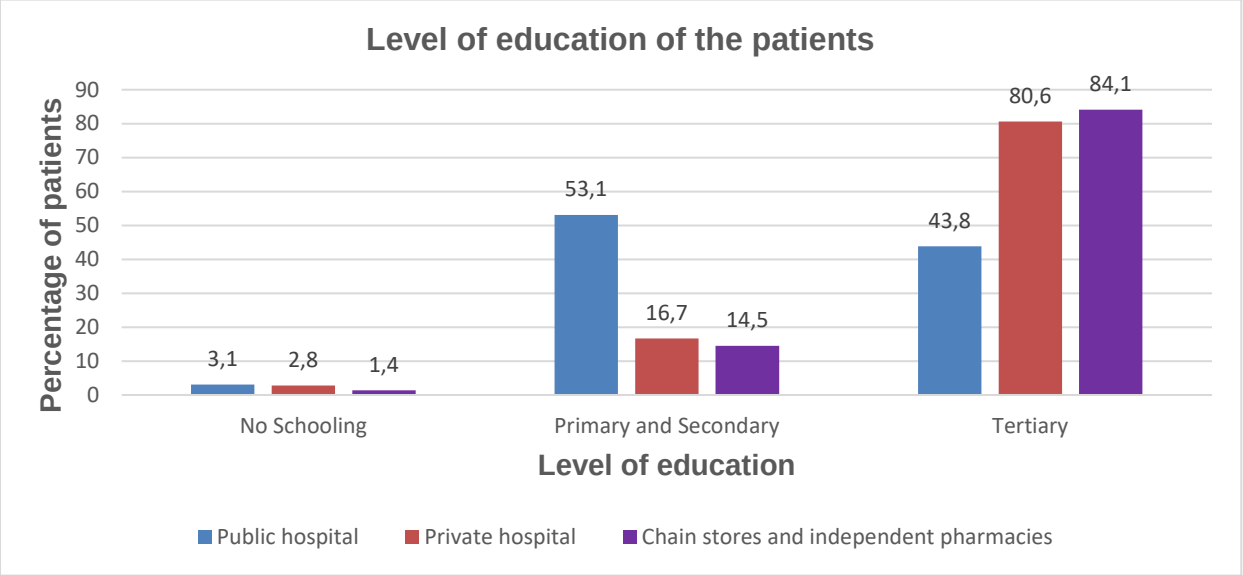


Figure 4.1 Level of education of the patients who participated in the survey.

One of the determinants of the socioeconomic status of an individual is the level of education. The data in Figure 4.1 may suggest that patients who use the public sector may be of lower socio-economic standing than those that use the private sector and possibly less knowledgeable about the extended roles of the pharmacist which may influence their expectation from community or hospital pharmacists.

4.3. What do patients consider important when having their prescription filled by a community/hospital pharmacist?

Section B of the survey questionnaire was designed to identify what patients considered important when having their prescription filled by community or hospital pharmacists. The results are presented in Table 4.2. Section B was designed based on literature and covered key elements of patient counseling.

Table 4.2 Section B of the survey questionnaire with survey results.

B	How important is the following when having your prescription filled by a pharmacist?					
	Statement	Percentage of patients per level				
		Not important	Slightly important	Reasonably important	Important	Very Important
B1	Pharmacist finding out if you are on other drugs and evaluating possible medicine interactions.	8.0%	4.4%	7.3 %	36.5%	43.8%
B2	Purpose of each medicine (what your medicine is used for).	3.2%	5.8%	5.1%	28.5%	58.4%
B3	Explanation of how each medicine works.	1.5%	3.6%	9.5%	28.8%	56.9%
B4	Contra-indications (Patient's conditions with which the medicine should not be used).	2.9%	2.2%	12.4%	35.0%	47.4%
B5	Precautions, e.g., instructions not to take any other drug, alcohol, or herbal products at the same time with your medications or perform certain activities such as driving while on certain medication.	2.2%	2.9%	5.8%	27.0%	62.0%
B6	Instructions on how much, how often and how long your medicine needs to be taken.	2.9%	0 %	5.1%	34 %	57.7%
B7	Instructions on what to do when you miss a dose.	4.4%	3.6%	8.8%	34.3%	48.9%
B8	Potential side effects and how to deal with them.	3.6%	4.4%	8.8%	33.6%	49.6%
B9	How to know if the medicine is working or not.	6.6%	1.5%	8.8%	35.8%	47.4%

Table 4.2 Continued.

B	How important is the following when having your prescription filled by a pharmacist?					
	Statements	Percentage of patients per level				
		Not important	Slightly important	Reasonably important	Important	Very Important
B10	Explanation of the effects of stopping medicine.	3.6%	6.6%	8.8%	35.0%	46.0%
B11	Symptoms of overdose and particulars of its treatment.	5.8%	5.1%	6.6%	35.0%	47.4%
B12	How to safely store your medicine (storage conditions).	4.4%	3.6%	11.7%	33.6%	46.7%
B13	How long can your medicines be used for after opening (e.g., 30 days for sterile eye drops).	5.8%	2.9%	8.0%	29.9%	53.3%
B14	Demonstration of how to use certain diagnostic devices, e.g., Glucose meter, etc. dispensed with your medicine.	4.4%	8.0%	9.5%	32.1%	46.0%
B15	How to safely dispose of remaining medicine at the end of treatment.	10.9%	10.2%	8.8%	28.5%	41.6%
B16	Advice on other factors that may have influence on the success of treatment, e.g., lifestyle issues such as lack of exercise, etc.	5.1%	7.3%	8.8%	32.8%	46.0%
B17	Opportunity to ask pharmacist medicine related questions.	2.2%	5.1%	8.0%	35.0%	49.6%

Table 4.2 Continued.

B	How important is the following when having your prescription filled by a pharmacist?					
	Statements	Percentage of patients per level				
		Not important	Slightly important	Reasonably important	Important	Very Important
B18	Pharmacist assisting patients generating solutions to some potential dispensed medicine problems.	4.4%	6.6%	8.0%	37.2%	43.8%

At least 70.1% (96/137) of the patients felt that the statements in Section B of the survey questionnaire were important/very important and thus will expect pharmacists to cover them during counselling.

The first four points (B1 – B4) are related to medicine efficacy and safety. This may suggest that patients were more concerned about achieving the desired treatment outcomes as well as their safety. Just under 85% (B17: 84.7%) of the patients identified "opportunity to ask pharmacist medicine related questions" as important and thus will have expectations that pharmacists will provide them with opportunities to ask questions or clarify medicines related instructions. The USA Food and Drug Administration (FDA) (2016) cited the lack of understanding of the usage directions as one of the reasons why patients do not take medicines as prescribed. The USA agency further reported that 30% to 50% of treatment failures of chronic diseases and over 125 000 deaths per year in the USA are due to non-compliance to drug therapy. The findings are line with previous studies (Karaeren, et al. 2009) who found that patients are more concern about efficacy and safety of their medicines and that patients' knowledge about the medicines is associated with higher adherence rates.

Conversely, the following points were deemed unimportant/slightly important by patients:

- B15 How to safely dispose of remaining medicine at the end of treatment (21.1% of the patients)
- B1 Pharmacist finding out if you are on other drugs and evaluating possible medicine interactions (12,4% of the patients)
- B9 How to know if the medicine is working or not (8.1% of the patients)

Although the number of patients who rated the above points as unimportant/slightly important are relatively small, it is important that all patients are counselled on the safe disposal of medicine to ensure safety of the people around them. A study by Buffington, et al. (2019) found that up to 40% of the prescription medications are not completely used and may pose a risk for unintentionally poisoning. Furthermore, one-third of the patients that were found to have disposed of their unused medication were not aware of the importance and appropriate methods for medication disposal. This highlights the need to increase patient awareness about the importance and methods of proper medication disposal. The findings of the current study are in line with the finding of a study by AlAzmi, et al. (2017) who found that 73% of the respondents threw their unwanted medicine in the trash. The above authors raised concerns about the participants' lack of knowledge on the proper disposal of expired, unwanted, and unused medicines. AlAzmi, et al. (2017) found that more than 80% of the respondents never received any information from healthcare providers about the safe and proper disposal of medicines.

Overall, all counseling points specified in Section B of the questionnaire were deemed important by at least 70.1% of the patients. It is thus suggested that pharmacists counselling should cover all the points in section B.

4.4 What do patients actually get from a community or hospital pharmacist when presenting the pharmacist with a prescription to fill?

Section C of the questionnaire was designed to measure the performance of the pharmacists as perceived by the patients in meeting patients' expectations when presented with a prescription to fill. The results are presented in Table 4.3.

Table 4.3: Level of information received by patients from the pharmacist.

C	Level of information received from the pharmacist when patient was having his/her prescription filled.					
	Statements	Percentage of patients per level				
		Not at all	Very little information	Some information	Substantial information	Complete information
C1	Information on possible medicine interactions.	9.5%	13.9%	24.1%	23.4%	29.2%
C2	Purpose of each medicine explained (what your medicine is used for).	5.8%	11.7%	19.7%	25.5%	37.2%
C3	Explanation of how each medicine works.	8.0%	11.7%	21.2%	24.1%	35.0%
C4	Contra-indications (Patient's conditions with which the medicine should not be taken).	9.5%	10.9%	19.7%	28.5%	31.4%
C5	Precautions, e.g., instructions not to take any other medicine, alcohol, or herbal products at the same time with your medications or perform certain activities such as driving while on certain medication.	10.2%	8.8%	16.1%	33.6%	31.4%

Table 4.3 Continues.

C	Level of information received from the pharmacist when patient was having his/her prescription filled.					
	Statements	Percentage of patients per level				
		Not at all	Very little information	Some information	Substantial information	Complete information
C6	Instructions on how much, how often and how long your medicine needs to be taken.	2.9%	7.3%	18.2%	21.9%	49.6%
C7	Explanation of what to do when you miss a dose.	16.1%	19.0%	19.0%	19.0%	27.0%
C8	Potential side effects and how to deal with them.	16.1%	13.1%	21.9%	21.2%	27.7%
C9	How to know if the medicine is working or not.	16.1%	13.1%	14.6%	25.5%	30.7%
C10	Explanation of the effects of stopping medicine.	12.4%	17.5%	16.1%	24.1%	29.9%
C11	Symptoms of overdose and particulars of its treatment.	16.8%	14.6%	16.8%	21.9%	29.9%
C12	How to safely store your medicine (storage conditions).	13.1%	8.0%	18.2%	27.0%	33.6%
C13	How long can your medicines be used for after opening (e.g., 30 days for sterile eye drops).	10.9%	16.8%	14.6%	25.5%	32.1%
C14	Demonstration of how to use certain diagnostic devices, e.g., Glucose meter, etc. dispensed with your medicine.	12.4%	8.8%	16.8%	11.7%	29.9%

Table 4.3 continues.

C	Level of information received from the pharmacist when patient was having his/her prescription filled.					
	Statements	Percentage of patients per level				
		Not at all	Very little information	Some information	Substantial information	Complete information
C15	How to safely dispose of remaining medicine at the end of treatment.	26.3%	15.3%	15.3%	17.5%	25.5%
C16	Advice on other factors that may have influence on the success of treatment, e.g., lifestyle issues such as lack of exercise, etc.	15.3%	11.7%	23.4%	21.2%	28.5%
C17	Opportunity to ask pharmacist medicine related questions.	10.7%	20.14%	22.6%	37.2%	18.2%
C18	Pharmacist assisting patients generating solutions to some potential dispensed medicine problems.	10.9%	15.3%	25.5%	22.6%	25.5%

To determine if there is a significant difference between patients' expectations of the information they would like to receive from pharmacists and what they then obtained from the pharmacists, the p-values were calculated from equation 3.1 and 3.2 and are presented in Table 4.4.

Table 4.4: z and p-values for the difference between section B and C responses.

	Section B	Section C				
No	Number of patients indicating Important/very important	Number of patients indicating Substantial/ Complete	n_1	n_2	z value	p-value
1	110	72	137	137	4.86104	0.00000116
2	119	86	137	137	4.59291	0.00000437
3	117	81	137	137	4.85779	0.00000119
4	113	82	137	137	4.13434	0.0000355
5	122	89	137	137	4.73781	0.00000216
6	126	98	137	137	4.3795	0.0000119
7	114	63	137	137	6.44277	0.000000000001
8	114	67	137	137	5.99642	0.000000000202
9	114	77	137	137	4.86431	0.00000115
10	111	74	137	137	4.77305	0.00000181
11	113	71	137	137	5.4025	0.0000000657
12	110	83	137	137	3.57452	0.000351
13	114	79	137	137	4.63364	0.00000359
14	107	85	137	137	2.90229	0.00374
15	96	59	137	137	4.5096	0,00000650
16	108	68	137	137	5.04157	0.000000462
17	116	76	137	137	5.27689	0.000000131
18	111	66	137	137	5.6848	0.0000000131
					Mean	0.000231

The p-values show a significant difference between what patients deemed important/very important and the actual information they received from pharmacists. The p-values of all the points in the questionnaire were less than 0.05. The mean p-value of 0.000231 was obtained as shown in Table 4.4.

While 86.9% of the patients indicated the purpose of each medicine (B2) was important/very important to them, only 62.8% (C2) of the patients reported to have been given substantial/complete information about the purpose of their medicines. Barat, et al. (2001) found a positive correlation between patients' knowledge of their medicines and adherence. Polypharmacy has been reported as a challenge in the Sub-Saharan Africa due to large numbers of people taking chronic medication such as ARV drugs for HIV

(Ssonko, et al., 2018). The risk of patients' accidental overdose is increased when patients do not have knowledge about the medicine they are taking. Patients who have knowledge about their medicines may feel motivated to take their treatment as prescribed. When patients know their medicine, they can make correct decisions such as stopping pain medicines then they feel better.

About 92% of the patients (B6) felt that instructions on "how much, how often and how long their medicine needs to be taken was reasonably important/important or very important", however only 71.5% (C6) of the patients felt that they received substantial/complete information. Similarly, 89.1% (B5) of the patients indicated patient counseling on precautions as important/very important to them, however, only 65.1% (C5) of the patients received substantial/complete information regarding contraindications and precautions, respectively.

Approximately 85% (B17) of the patients indicated that an opportunity to ask pharmacist medicine related questions was important/very important. The study found that 55.5% (C17) of the patients were not offered enough time to ask Pharmacists questions. This raises concerns since many patients are taking several medications. Hashim (2017) suggests that allowing patients to speak reduces late arising concerns. He argues that patients often present with more than one concern, so it is important to have a "full picture". Hashim (2017) further adds that allowing patients to speak/clarify issues may not take as long as it is presumed.

Out of the 83.2 % (B8) of the patients that indicated that information about side effects of the drugs they are taking was important/very important, only 48.9 % indicated to have received substantial/complete information about the side effects of the medications they are taking. Poor communication could lead to patient distress when unexpected side effects develop. Side effects have been associated with poor compliance to drug therapy (DiBonaventura, et al., 2012).

Just over half (51.8%) (C11) of the patients reported to have received substantial/complete information regarding "the symptoms of overdose and particulars of its treatment". This is low considering that medicine overdose is considered a medical emergency. The deaths due to medicine overdose are not recorded in official statistics in South Africa (Statistics SA, 2018a). Statistics in Australia shows that at least 2000 accidental overdose deaths were recorded each year for the past five years (Pennington Institute, 2020). The possibility exists that deaths due to accidental overdose may even be higher in South Africa given that Australia is a more developed than South Africa. Patients may increase their chances of survival if they seek medical attention early (Pennington Institute, 2020). Thus, knowledge about symptoms of overdose is crucial.

Information relating to medicine safety such as "how to safely dispose of remaining medicine at the end of treatment"; "how long can your medicines be used for after opening" was not provided to a significant number of patients, i.e., 41.6% (C15) and 27.7% (C13) respectively.

The above findings highlight the discrepancies in terms of patients' expectations and services rendered. The findings further demonstrate the need for pharmacists to obtain feedback on their service to patients.

4.5. Breakdown of the results per each pharmacy category

The results (Table 4.4) have shown that there is a significant difference between what patients expect and the information that they receive when having their prescription filled. This section further breakdown the results per pharmacy category.

The results from each category of pharmacy were evaluated following the same approach and the mean p-values of 0.0277 for Private hospital pharmacies, 0.0158 for public hospital pharmacies and 0.0102 for Retail pharmacies were obtained. The results show a significant difference between what patients deem important/very important and level of information received.

The study results show that a gap exists between the patients' expectations and what they actually get in all the pharmacy categories.

4.6 Comparison of the counseling gap between different types of pharmacies.

The responses vary between different categories of pharmacies for each question (C1 to C18). To determine if there was a significant difference between the different categories of pharmacies, the responses from different categories of pharmacies were compared. A two-sample t-test was performed to compare the average responses using the formula in equation 3.3. Table 4.5 is the comparison of responses from different pharmacies.

Table 4.5 A comparison of responses from different pharmacy categories.

No	Counselling discussion points	Section B: Percentage of patients indicating Important/ very important	Section C Percentage of patients indicating Substantial/ Complete information received		
			Private Hospital Pharmacies	Public Hospital Pharmacies	Retail Pharmacies
C1	Information on possible medicine interactions.	80%	67%	47%	38%
C2	Purpose of each medicine explained (what your medicine is used for).	87%	64%	59%	67%
C3	Explanation of how each medicine works.	85%	61%	50%	75%
C4	Contra-indications (Patient's conditions with which the medicine should not be taken).	83%	61%	53%	67%

Table 4.5 Continues.

No	Counselling discussion points	Section B: Percentage of patients indicating Important/ very important	Section C Percentage of patients indicating Substantial/ Complete information received		
			Private Hosp Pharmacies	Public Hosp Pharmacies	Retail Pharmacies
C5	Precautions, e.g., instructions not to take any other medicine, alcohol, or herbal products at the same time with your medications or perform certain activities such as driving while on certain medication.	89%	58%	69%	75%
C6	Instructions on how much, how often and how long your medicine needs to be taken.	92%	67%	72%	71%
C7	Explanation of what to do when you miss a dose.	83%	47%	44%	46%
C8	Potential side effects and how to deal with them.	83%	50%	50%	46%
C9	How to know if the medicine is working or not.	83%	53%	66%	50%
C10	Explanation of the effects of stopping medicine.	81%	53%	53%	50%
C11	Symptoms of overdose and particulars of its treatment.	83%	53%	50%	46%
C12	How to safely store your medicine (storage conditions).	80%	64%	50%	63%
C13	How long can your medicines be used for after opening (e.g., 30 days for sterile eye drops).	83%	64%	41%	58%
C14	Demonstration of how to use certain diagnostic devices, e.g., Glucose meter, etc. dispensed with your medicine.	78%	46%	60%	54%

Table 4.5 Continues.

No	Counselling discussion points	Section B: Percentage of patients indicating Important/ very important	Section C Percentage of patients indicating Substantial/ Complete information received		
			Private Hosp Pharmacies	Public Hosp Pharmacies	Retail Pharmacies
C17	Opportunity to ask pharmacist medicine related questions.	85%	58%	41%	67%
C18	Pharmacist assisting patients generating solutions to some potential dispensed medicine problems.	81%	61%	31%	58%
C15	How to safely dispose of remaining medicine at the end of treatment.	70%	53%	31%	33%
C16	Advice on other factors that may have influence on the success of treatment, e.g., lifestyle issues such as lack of exercise, etc.	79%	56%	47%	46%
	Mean	**83**%	**58%**	**51**%	**56**%

The results show a significant difference in the mean scores between the Private hospital pharmacies and public hospital pharmacies with a p-value of 0.0361. A higher percentage of patients in the private hospital pharmacies received more information than patients in the public hospital pharmacies. This is not unexpected given in South Africa, the well-funded private sector attracts majority of the country's health professionals while there is a shortage and maldistribution of key healthcare workers, including pharmacists across rural and public sector divides (Ward, et al. 2014).

When comparing private hospital pharmacies with retail pharmacies, a p-value of 0.6685 was obtained which indicates that there is no sufficient evidence to support that the mean scores were different. The mean scores from the public hospital pharmacies and retail

pharmacies were compared, and the p-value of 0.1925 was obtained. The results indicate that there is not sufficient evidence to support that the mean scores are different.

4.7 Are patients satisfied with the services they receive from community or hospital pharmacists?

Section D of the questionnaire was intended to assess the level of patients' satisfaction with the services received from community and hospital pharmacists. The results are presented in Table 4.6.

Table 4.6 Patient satisfaction level.

D	Patient Satisfaction					
		Percentage of patients per level				
	Statements	Very poor	Poor	Average	Good	Excellent
D1	How would you rate the helpfulness of Pharmacy staff?	0%	4.4%	24.8%	48.2%	22.6%
D2	How would you rate the attitude of pharmacy staff?	0.7%	5.1%	25.5%	48.9%	19.7%
D3	How would you rate the time taken to be served?	5.1%	11.8%	32.1%	42.3%	12.4%
D4	How would you rate the level counselling relating to the use of medicine you have received?	0.7%	13.9%	30.7%	38.7%	16.1%
D5	Overall, how would rate your level of service you have received?	0.7%	4.4%	24.1%	53.3%	17.5%

When asked about the level of counselling received (D4), 14.6% of the patients indicated that it was poor/very poor and 30.7% thought it was average. These numbers are concerning considering that the researchers Gould, et al, (2013) and Doyle, et al, (2013) found that unsatisfied patients are unlikely to adhere to their treatment plans. A quarter of patients (25.5%) rated the attitude of pharmacists (D2) as average. This suggest that there is room for improvement.

Patients from the Private hospital and Retail pharmacies showed similar responses. Patients from the Public Hospital Pharmacies were less satisfied with questions D3 (time taken to be served) and D5 (overall satisfaction level). The longer waiting times in the public sector are not unexpected given that 82 percent of South Africans rely on the public sector for healthcare (Statistics SA, 2016). The shortage of healthcare workers in the public sector contribute to this challenge. This is a concern given that patient satisfaction was positively associated with positive clinical outcomes and patient safety.

In conclusion, although majority of the patients were satisfied with pharmacists' services, there is room for improvement, when it comes to patient counselling.

4.8 What is patients' perception and knowledge about the role of the community/hospital pharmacist?

Section E of the survey questionnaire was designed to assess patient's perception about the role of a community/hospital pharmacist. Table 4.7 presents the summary of the results.

Table 4.7 Summary results of patients' perception and knowledge about the role of the community/hospital pharmacist.

E	Patients' perception and knowledge about the role of community/hospital pharmacist					
	Statements	Percentage of patients per level				
		Strongly disagree	Disagree	Uncertain	Agree	Strongly Agree
E1	Pharmacists are health professionals whose primary responsibility is medicine.	0.7%	0%	4.4%	49.6%	45.3%
E2	Pharmacists have knowledge about diseases and treatment thereof and can also provide advice on health-related matters and when necessary, refer.	1.5%	0.7%	10.2%	50.4%	37.2%
E3	Pharmacists just fill prescriptions as per doctors' requests.	4.4%	9.5%	13.9%	55.5%	16.8%
E4	Pharmacists are businesspeople who interpret and dispense medicines.	2.2%	18.2%	20.4%	42.3%	16.8%
E5	Do you feel confident to discuss sensitive and confidential health related matters with community or hospital pharmacists?	6.6%	10.2%	16.1%	50.4%	16.8%

94.9% of patients agreed/strongly agreed that pharmacists are healthcare professionals whose primary responsibility is medicine (E1). Similar findings were reported by Perrault

and Beal (2019) in a study undertaken in the USA. The two researchers found that patients generally know the basic duties of the pharmacists.

Just under 90% (87.6%) of the patients agreed/strongly agreed that "Pharmacists have knowledge about diseases and treatment thereof and can also provide advice on health-related matters and when necessary, they refer patients to medical practitioners" (E2) while 10.2% of the patients were uncertain and 1.5% strongly disagreed with the statement. This finding suggests that patients do not see pharmacists as merely medicine dispensers but as health professionals who are equipped with knowledge to provide certain level of guidance with respect to health matters.

About two thirds (67.2%) of the patients were comfortable to discuss sensitive and confidential health related matters with community or hospital pharmacists (E5). This is considerably lower compared to the other scores in the same section. 16.8% of the patient were not comfortable discussing sensitive and confidential matters with pharmacists. While no reasons were provided, it is important that the layout of the pharmacy provides a comfortable and private area where patients may feel free to discuss confidential and sensitive matters as required by Good Pharmacy Practice guideline (SAPC, 2018).

In conclusion, the study found that patients know the basic responsibilities of the pharmacist. Although, the majority of the patients regard pharmacists as health care professionals who can give guidance with respect to health matters, 12.4% of the patients were uncertain/disagreed/strongly disagreed that with the statement. This is most likely to influence their expectations from community or hospital pharmacists.

4.9 The impact of the socioeconomic status of patients on their expectations and the level of service received from community or hospital pharmacists.

Ranchod, et al (2017) suggests that the private hospital sector caters for a population that tends to be wealthier and more likely to be formally employed. Bosworth (2018) suggests that education is one of the determinants of the socioeconomic status of an individual. While income and occupational level were not included in the survey questionnaire, the

level of education and the type of facility that the patient consult may indicate their income level. About 82% of South Africans rely on the public sector for healthcare (Statistics SA, 2016).

The comparison of patients' responses in table 4.5 show a significant difference in the expectations and level of information received by patients in private hospital and public hospital pharmacies with a p-value of 0.0361. The patients in the private hospital pharmacies received more information that those in the public sector. Miller (2019) reported that patients reacted positively toward private sector with one patient mentioning that "everybody knows their job while the opposite was the case in the public hospitals. The above demonstrates that the socioeconomic status of an individual may influence their expectations from pharmacists.

4.10 Conclusion.

Chapter four presented results from the study. The study found significant difference (p-value of 0.000231) between patient expectations and what they actually got from the pharmacists. The responses of patients from the public hospital pharmacies and private hospital pharmacies differed significantly with a probability value (p-value) of 0.0361. Most of the patients in the private sector received more information during counselling than patients in the public sector. The average scores were similar for Private Hospital and Retail pharmacies with a p-value of 0.6685. A p-value of 0.1925 was obtained when comparing Retail/community pharmacies with public hospital pharmacies. This implies that there is no adequate evidence to support that the responses differ significantly between the retail pharmacies and public hospital pharmacies. Patient satisfaction is an indicator of the quality of service provided from patients' perspective. Just under 15% (14.6%) of the patients indicated that the counselling received was poor/very poor, while 30,7% thought it was average. When it comes to the overall experience in the pharmacy (taking into consideration attitude of pharmacists, waiting times), 70.8% of the patients felt that the service received was good/excellent. Overall, almost 90% (87.6 %) of the patients view pharmacists as not only custodian of medicines but as health professionals

who are equipped with knowledge to provide certain level of guidance with respect to health matters and thus expect the pharmacists to even play an advanced role.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction.

This chapter presents a summary of the research findings and recommendations. The challenges encountered when completing this empirical study are described. Areas for further research were identified.

5.2 Summary of findings and conclusions.

The main aim of the study is to (i) identify the gap between patients' expectations and what they get from a hospital/community pharmacist, and (ii) to determine what patients perceive to be the role of the pharmacist and their satisfaction of the services they receive from pharmacists.

5.2.1 What do patients consider important when having their prescription filled by a community/hospital pharmacist?

Patients' knowledge about their medication has been described as one of the essential prerequisites or antecedents of successful therapy (Saqib, et al, 2018). The SAPC has developed a Good Pharmacy Practice (GPP) Guideline that sets out the minimum requirement for patient counseling (SAPC, 2018). Saqib, et al, (2018) describes patient's knowledge of their treatment regimen as an important patient care indicator. The survey questionnaire was developed based on literature. Section B of the questionnaire was intended to identify what patients deemed important when having their prescription filled. All the statements in Section B of the questionnaire were rated as important/very important by at least 70.1% of the patients. The results supported findings from literature.

In conclusion, when providing patient counseling, community or hospital pharmacists should cover at least:

- Pharmacist finding out if you are on other drugs and evaluating possible medicine interactions.
- Purpose of each medicine and each medicine works.
- Contra-indications and precautions.
- Dosage instructions and what to do when a dose is missed.
- Potential side effects and overdose treatment
- Withdrawal symptoms if applicable and what to do if missed a dose.
- Storage conditions of medicine and safe disposal of unused medicine
- How long can be medicines used for after opening?
- Demonstration of how to use devices dispensed with medicines.

5.2.2 What do patients actually get from a community or hospital pharmacist when presenting the pharmacists with prescriptions to fill?

Saqib, et al (2018) suggests that poor knowledge about medicines can lead to non-adherence. Similar findings were made by Barat, et al., (2001) who found a positive correlation between patients' knowledge of their medicines and adherence. The current study found significant discrepancies between what patients consider important and the information given to patient during counselling.

Notably, over 80% of the patients deemed information relating to the purpose of medicine, dosage, contra-indication, and precautions as important/very important, however, the number of the patients who reported to have received substantial/complete information were significantly less. The p-values obtained for each question were well below 0.05 with the mean p-value at 0.000231 indicating a significant difference. Saqid, et al (2018) recommends that patient counseling by pharmacists should cover the names of

medicines, purpose of therapy, duration of treatment, dosage instruction, and important side effects as these are important parameters for safe and effective use of medicines.

Similarly, 83.2% of the patients indicated that information on potential side-effects was important/very important, however, only 48.9% received significant/complete information pertaining to this subject. About 84.6% of the patients felt it was important/very important to have an opportunity to ask pharmacists medicine related questions, however, less than half of the patients felt there were given at least enough time to ask pharmacists questions.

In conclusion, there is a significant difference (p-value of 0.000231) between patients' expectations and what they actually get from the pharmacists.

5.2.3 What is patients' perception and knowledge about the role of the community or hospital pharmacist?

A study undertaken by Perrault and Beal (2019) found that patients in the USA were aware of the primary role of community or hospital pharmacists. Similar findings were made by the current study in Johannesburg where 95% of the patients were aware of the basic responsibilities of community or hospital pharmacists. Additionally, almost 90% of the patients agreed/strongly agreed that pharmacists have knowledge about diseases and treatment thereof and can also provide advice on health-related matters.

Although majority (67.2%) of the patients felt that they were/would be comfortable discussing sensitive and confidential information with pharmacists, about 17%of the patients disagreed/strongly disagreed with this. This suggest that there is work to be done to win the trust of the patients or to create an environment where patients can comfortably discuss their challenges with pharmacists.

In conclusion, the study found that patients in the city of Johannesburg are aware of the role of the community or hospital pharmacists. In addition, patients consider pharmacists as health professionals whose responsibility goes beyond dispensing medicines.

5.2.4 Does socioeconomic status of patients influence patients' expectations from a community/hospital pharmacist?

Bosworth (2018) suggests that education is one of the determinants of the socioeconomic status of an individual. While income and occupational level were not included in the questionnaire, the level of education and the type of facility that the patient consult may indicate their income level. Ranchod, et al (2017) suggests that the private hospital sector caters for a population that tends to be wealthier and more likely to be formally employed. The study found a significant difference in terms of the expectations and experience of patients in the public and private hospital pharmacies, with the later being more knowledgeable about the role of the pharmacist and receiving better service. This confirms the influence of the socio-economic status on expectation of patients from community or hospital pharmacists.

5.2.5 Are patients satisfied with the level of service/information received from pharmacists?

Gould, et al, (2013) suggests that patient satisfaction is an indicator of the quality of service provided from patients' perspective and may impact on patients' compliance to treatment. This view is supported by Doyle et al., (2013) who found that good patient experience was positively associated with positive clinical outcomes and patient safety". The current study found that the 54.8% of the patients were satisfied with the counseling received. A significant number of patients (14.6%) felt that the counseling was poor while 30.7% felt it was average. These results are worrying considering the impact of counselling on compliance to drug therapy. Thus, there is a need to improve patient experience.

5.3 Recommendations.

The strategies that can be implemented to minimize the gap between patients' expectations and what they actually get from the pharmacists should consider:

(i) factors that influence the expectations of patients from community or hospital pharmacists, and

(ii) factors contributing to the gap between patients' expectations and what patients expect from community or hospital pharmacists.

5.3.1 Factors that can influence patients' expectations?

(i) knowledge and perception of patients about the role of community pharmacists.

While the current study found that patients are aware of the basic responsibilities of community or hospital pharmacists, the role of pharmacists has changed over the years from being "product focused" to become patient-centered known as pharmaceutical care. The role of the pharmacist is evolving and will continue to change alongside the needs and expectations of patients or service users (John, 2018). It is important that patients are continuously educated about the changing role of the pharmacists to ensure that they are aware of the increased scope of community or hospital pharmacists.

Patient education can be done using different platforms such as social media, patient education in hospitals (pharmacy waiting areas), flyers can be handed out with medicines, TV/Radio during pharmacy week, etc. All these methods may be used to create awareness about the changing role of community or hospital pharmacists. Information about the role of the pharmacist should also be emphasized by pharmacist during patient counselling. The value-added services that the pharmacist can offer can be discussed during patient counselling.

5.3.2 Influence of socio-economic status on patient expectations.

The impact of socio-economic status on access to health care has been well documented (Adler and Newman, 2002). Lower socioeconomic status has been associated with higher mortality and illness rates. Socio-economic position exerts an influence on patients' expectations. Educated patients have knowledge and life-skills that allow them to gain access to information and resources that promote health (Adler and Newman, 2002). Patients' needs may differ based on their socioeconomic status. Patient counselling should be tailored to the need of each patient. Patient who are not educated may require use of visual aids to explain certain concepts which may easily understood by educated patients. Getting feedback from patients is important to ensure that instructions are well understood.

5.3.3 Factors contributing to a gap between patients' expectations and what they actually get from the pharmacist.

5.3.3.1 Communication barriers.

A study undertaken Schlemmer and Mash (2006) found that language barrier can significantly affect the effectiveness of counseling provided to patients in addition to negatively influencing the attitudes of patients and staff towards each other. The two authors further add that this may be enhanced by lack of education or training on the side of patients. Given that Johannesburg is home to people of different cultures and languages, it is recommended that health workers learn languages that are spoken by majority of the residents, such as Zulu and Sotho in addition to English and Afrikaans. Additionally, use of professional interpreters should also be considered where practical.

5.3.3.2 Lack of incentive for patient counseling.

Unlike doctors who charge for consultation, pharmacists do not charge patients when seeking health information or advice. The lack of incentive for this activity leaves this activity performed at the will of the pharmacist. Although patient counselling is regarded as a professional duty (SAPC, 2018), there is currently no quality control over the counselling provided. The inclusion of a counselling fee and requirement for patients to sign to indicate that counselling was provided may ensure that this task is performed as required. AlShayban, et al. (2020) found that patients do deem counselling as an important service, and some were willing to pay for it.

5.3.3.3 Lack of counseling areas to ensure privacy.

Lack of privacy has been cited in as an institution-centered barriers to patient counselling (Albekairy, 2014). Albekairy (2014) found that lack of privacy was the second most perceived barrier to counselling. Lack of privacy can prevent effective communication between patients and pharmacists. The lack of privacy was found to be due to interruption by other people in the healthcare team (Albekairy, 2014). The SAPC has set out minimum requirements for a pharmacy counselling area in the Good Pharmacy Practice guideline. The pharmacies are regularly inspected for adherence to the Good Pharmacy Practice requirements and graded accordingly (South African Pharmacy Council, 2018). While controls are in place to ensure compliance, the use of these facilities is left to the will of the pharmacist.

5.3.3.4 Lack of interest from the patient side.

The lack of interest was found to be the third most cited barrier to patient counselling after (1) caregiver collecting medicines on patient's behalf and (2) lack of privacy (Albekairy, 2014). Albekairy (2014) found that the lack of interest was due to several reasons include low appreciation for the value of counselling, over-confidence by patients and caregivers or low appreciation for the seriousness of the disease. Patient education about health

matters and importance of pharmaceutical intervention/drug therapy may trigger patients' interests and adherence to drug therapy. Several opportunities exist for patient education including during counselling.

5.4 Study limitations.

5.4.1 The questionnaire was only available in two languages: English and Zulu. Patients who did not understand the two languages could not participate in the study.

5.4.2 The questionnaire only had closed-ended questions, it did not provide patients with an opportunity to express their views.

5.4.3 The patients were approached when leaving the pharmacies and institutions. Some patients could not participate citing that they were rushing for transport home, etc. It is possible that a higher response rate could have been achieved if patients were approached in the waiting areas of the selected pharmacies.

5.5 Areas for future research.

Patients with the lowest socioeconomic levels in the community are associated with higher illness rates (Arpey, 2017). The World Health Organization (2006) suggests that in some areas of the Sub-Saharan Africa, community pharmacists are the most accessible health care professionals and often the sole provider of health care advice and services to most patients. Thus, the study could be extended to other provinces, and rural areas to understand if expectations of patients those areas may differ from the findings of the current study.

Furthermore, a research may be conducted to determine pharmacists' perspective as to why they provide the counselling they do as this research was focused on patients' perspective.

5.6 Conclusion

The current study has demonstrated that gaps exist between patients' expectations and what they get from the pharmacists when presenting pharmacists with prescriptions to fill. The study found that patients' knowledge and their perceptions about the role of community or hospital pharmacist influence patients' expectations. Socioeconomic status of patients was found to have an influence on patients' expectations from pharmacists. Factors influencing the counselling provided by pharmacists were identified as: lack of incentive for counselling, lack of interest from the patients, language barriers, inter alia. The study made recommendations to reduce the identified gaps and the impact of the thereof.

LIST OF REFERENCES

Adepu, R., and Nagavi, B.G. (2009). Attitudes and behaviors of practicing Community Pharmacists towards patient counselling. Indian journal of Pharmaceutical Sciences. Volume 17, Issue 3. Pages 285-289.

AlAzmi, A., AlHamdan, H., Abualess, R., Bahadig, F., Abonofal, N., and Osman, M. (2017). Patients' knowledge and attitude toward the disposal of medications. Journal of pharmaceutics. Volume 2017, Issue 1. Pages 1-9. DOI:10.1155/2017/8516741

Alberkairy, A.M. (2014). Pharmacists' perceived barriers to patient counseling. Journal of Applied Pharmaceutical Science. Volume 4, Issue 1. Pages 70-73.

AlShayban, D.M., Naqvi, A.A., Islam, M.A., Almaskeen, M., Almulla, A., Alali, M., AlQaroos, A., Raafat, M., Iqbal, M.S., and Haseeb, A. (2020). Patient satisfaction and their willingness to pay for a pharmacist counseling session in hospital and community pharmacies in Saudi health care settings. Front pharmacol. Doi: 10.3389/fphar.2020.00138. PMID: 32194400; PMCID: PMC7061856.

Amvgn, M., Jayamanne, S.F., Coombes, J. Da Silva, A., Lynch, C.B., and Wickramasinghe, N.D.D. (2017). The Impact of pharmacist counselling on glycaemic control among patients with diabetes mellitus: Data from a Sri Lankan Teaching Hospital. Indian Journal of Endocrinology and Metabolism. Volume 21, Issue 1. Page 23.

Arimbawa, P.E., and Hita, I.P.G. (2019). Patient perception on the role of a pharmacist and the understanding of the rational use of medicines. Journal of Sustainability and Management. Volume 14, Issue 6. Pages 137-144.

Arpey, N.C., Gaglioti, A.H., and Rosenbaum, M.E. (2017). How Socioeconomic Status Affects Patient Perceptions of Health Care: A Qualitative Study. J Prim Care Community Health. Volume 8, Issue 3. Pages 169-175. Doi: 10.1177/2150131917697439.

Barat, I., Andreasen, F., and Damsgaard, E.M.S. (2001). Drug Therapy in the elderly: what doctors believe, and patients actually do. British Journal of Clinical Pharmacology. Volume 51, Issue 6. Pages 615-622.

Bates, I., John, C., Bruno, A., Fu, P., and Aliabadi, S. (2016). An analysis of the global pharmacy workforce capacity. Human resource for health, Volume 14, Issue 61. Pages 1-7. https://doi.org/10.1186/s12960-016-0158-z.

Benson, H., Lucas, C., Benrimoj, S., and Williams, K.A. (2019). The development of a role description and competency map for pharmacists in an interprofessional care setting. International Journal of Clinical Pharmacy. Volume 41, Issue 2. Pages 391-407.

Borgsteede, S.D., Karapinar-Carkit, F., Hoffmann, E., and Van Den Bemt, M.L.A. (2011). Information needs about medication according to patients discharged from a general hospital. Patient education and Counseling. Volume 83, Issue 1. Pages 22-28.

Bornman, S., Truter, I., and Venter, D. (2006). Public perception of community pharmacists in South Africa: A Preliminary study. Health SA. Volume 11, Issue 3. Pages 27- 40.

Bosworth, B. 2018. Increasing disparities in mortality by socioeconomic status. Annual review of public health. Volume 39. Pages 237-251.

Buffington, D.E., Lozicki, A., Alfieri, T., and Bond, T.C. (2019). Understanding factors that contribute to the disposal of unused opioid medication. Journal of Pain Research. Volume 12, Issue Feb, Pages 725-732.

Burns, N. and Grove, S. (2001). The practice of nursing research: conduct, critique and utilization. 4th edition. W.B. Sounders: Philadelphia, Pennsylvania, USA, page 221.

De Vos, A.S., Strydom, H., Foucher, C.B., and Delport, C.S. (ed.) (2002). Research at Grass Roots. 2nd Edition, Van Schaik Publishers. Pretoria. South Africa.

Doyle, C., Lennox, L., and Bell D. (2013). A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. British Medicine Journal Open; Volume 3, Issue 1. Pages 1-17.

DiBonaventura, M., Gabriel, S., Dupclay, L., Gupta, S., and Kim, E. (2012). A patient perspective of the impact of medication side effects on adherence: results of a cross-sectional nationwide survey of patients with schizophrenia. BioMed Central Psychiatry Volume 12**,** Issue 20. Pages 1-7. .https://doi.org/10.1186/1471-244X-12-20

Farup, P.G., Blix, I., Førre, S., Johnsen, G., Lange, O., Johannessen, R., and Petersen, H. (2011). What causes treatment failure - the patient, primary care, secondary care or inadequate interaction in the health services? BioMed Central Health Service Research, Volume 11, Issue 111. Pages 1-6. https://doi.org/10.1186/1472-6963-11-111.

Gould, O., Buckley, P., and Doucette, D. (2013). What patients want: Preferences regarding Hospital Pharmacy services. Canadian Journal of Hospital Pharmacy. Volume 66, Issue 3. Pages 177-183.

Hashim, M.J. (2017). Patient-centered communication: Basic skills. American Family Physician. Volume 95, Issue 1. Pages 29-34.

Holland, R.S. (1993). Patient counselling in Australia, Thesis. University of New South Wales Library. Page 1-68.

Ingham-Broomfield, R.B. (2008). A nurses' guide to critical reading of research. Australian Journal of Advanced Nursing. 26 (1), pages 102-109.

John, C. (2018). The changing role of the pharmacist in the 21st century. The Pharmaceutical journal, Volume 300, Issue 7909. DOI:10.1211/PJ.2018.20204131.

Jin, J., Sklar, G.E., Min Sen Oh, V. and Li, S.C. (2008). Factors affecting therapeutic compliance: A review from the patient's perspective. Therapeutics and Clinical Risk Management, Issue 1, Dove Medical Press Limited, pages 269-286.

John, C. (2018). The changing role of the pharmacist in the 21st century. The Pharmaceutical journal. Volume 300, Issue 7909. Available online at http://pharmaceutical-journal.com/article/opinion/the-changing-role-of-the-pharmacist-in-the-21st-century [Accessed on the 15 Feb 2021]

Karaeren, H., Yokuşoğlu, M., Uzun, S., Baysan, O., Köz, C., Kara, B., Kirilmaz, A., Naharci, I., Pinar, M., Yilmaz, M.B., and Uzun, M. (2009). The effect of the content of the knowledge on adherence to medication in hypertensive patients. Anadolu Kardiyol Derg. Volume 9, Issue 3. Pages 183-188.

Kettledas, R. (2016). Reaching 90-90-90 in South Africa Part III: Best practices and innovations in linkage, treatment, and viral suppression. Central Chronic medicine dispensing and distribution programme. Department of health: Republic of South Africa. Available on line at <PowerPoint Presentation (usembassy.gov)>. [accessed on the 12/07/2021].

Khan, M. U., Khan, A. N., Ahmed, F. R., Feroz, Z., Rizvi, S. A., Shah, S., Hussain, R., and Adil, Z. (2013). Patients' opinion of pharmacists and their roles in health care system in Pakistan. Journal of young pharmacists: JYP, Volume 5, Issue 3. Pages 90–94.

Lim, T.O., Ngah, B.A., Rahman, R.A., Suppiah, A., Ismail, F., Chako, P., and Na, H.H. (1992). The Mentakab hypertension study project. Part V – Drug compliance in hypertensive patients. Singapore Medical Journal, Volume 33, Issue 1. Pages 63–66.

Lindemann, N. (2019). What's the average survey response rate? Available on-line at < What's the average survey response rate? [2019 benchmark] - Survey Anyplace>, [Accessed on the 20 Nov 2020]

Makholwa-Moabelo, A. (2014). Clinical and medical errors claims may pose threat to National Health Insurance Scheme. Available online at [https://www.infomedix.it/news?op=rec&id=572], Accessed on 31 July 2020.

Masud, A., Safia, N., Zaka., and Sadeega, S. (2016). Patients and Health care provider's perceptions and expectations towards Hospital pharmacist in Lahore. International Journal of Scientific and Engineering research, Volume 7, Issue 5. Pages 89-93.

Makary, M.A., and Daniel, M. (2016). Medical error-the third leading cause of death in the US. BMJ. Volume 353, Issue 2139, Doi: 10.1136/bmj.i2139. PMID: 27143499.

Malangu, N. (2014). The future of community Pharmacy Practice in South Africa in the light of the proposed new qualification for pharmacists: Implications and challenges. Global journal of health sciences. Volume 6, Issue 6. Pages 226-230.

Merks, P., Piecuch, A., Wojtasik, E., Wujec, M. and Kozlowska-Wojciechowska, M. (2012). Comparison of patients' expectations from pharmacy services in Poland and England. International Journal of pharmaceutical Science. Volume 20, Issue 2. Pages 35-36.

Miller, A. (2019). A gap between public and private healthcare in South Africa. University of the Western Cape. Available online at < A Gap Between Public and Private Healthcare in South Africa – Point of view (uwc.ac.za)> [Accessed on the 15 July 2021].

Morrison, J. (2021) Assessing questionnaire reliability. Select statistical services. Available on-line at < Assessing Questionnaire Reliability - Select Statistical Consultants (select-statistics.co.uk)> [Accessed on the 15 July 2021).

National Coordinating Council for Medication Error Reporting and Prevention. (2021). What is a medication error? Available online at < About Medication Errors | NCC MERP> [Accessed on the 11 July 2021].

Newman, L. (2018). IOL. Poor literacy levels still a concern in SA. Accessed online at <https://www.iol.co.za/dailynews/poor-literacy-levels-still-a-concern-in-sa-14601496> [Accessed on the 31 July 2020].

Nicholas, C.A., Anne, H.G., and Marcy, E.R. (2017). How socioeconomic status affects patient perception of health care: A qualitative study. Journal of Primary care and Community health. Volume 8, Issue 3. Pages 169-175.

Oshima S., Yamagishi M., Okita M., Akimoto, H., Negishi, A., Horii, N., Mutoh, M., Sannomaru, Y., Numajiri, S., Inoue, N., Ohshima, S., Wada, M., and Kobayashi, D. (2019). Discrepancies between patients' and pharmacists' perceptions of the role of community pharmacists as advisors on the use of pharmaceuticals in Japan: A comparison prior to and following revision of the Pharmacists' Act. SAGE Open Med. volume 21, Issue 7. Pages 1-8. Doi: 10.1177/2050312119838746. PMID: 30915219; PMCID: PMC6429651.

Palaian, S.P., Prabhu, M.A., and Shankar, P.R. (2006). Patient counselling by Pharmacist - A focus on chronic illness. Pakistan journal of pharmaceutical sciences, Volume 1, Issue 19. Pages 65-72.

Pannucci, C.J., and Wilkins, E.G (2010). Identifying and avoiding bias in research. Plastic and reconstructive surgery. Volume 126, Issue 2. Pages 619-625. Doi:10.1097/PRS.0b013e3181de24bc.

Pathickal, S. (2016). The importance of counselling and impact on medication adherence. Rhochi post. Volume 5, Issue 5. Pages 14-15.

Pennington Institute. (2020). Australia's Annual Overdose Report 2020. Melbourne: Pennington Institute. Available online at < Australia’s Annual Overdose Report 2020 - Penington Institute>, [Accessed on the 25 Nov 2020].

Perrault, E.K., and Beal, J.L. (2019). Patients ' knowledge about pharmacists, technicians, and physicians. American journal of Health-System Pharmacy. Volume 76, Issue 18. Pages 1420-1425.

Puvvada, R.C. and Mukhukumar, V.A. (2018). Impact of patient counselling on the knowledge, attitude, practice, and quality of life in patients with hypertension with diabetes mellitus-II. Indian journal of pharmaceutical education and research. Volume 52, Issue 2. Pages 305 to 310.

Ranchod, S., Adams, C., Burger, R., Carvounes, A., Dreyer, K., Smith, A., Stewart, J., and Van Biljon, C. (2017). South Africa's hospital sector: old divisions and new development. In Padarath, A., and Barron, P (ed). South African Health Review, 20th Edition, Durban, Health System Trust, pages 101-110.

Sabater-Galindo, M., Ruiz De Maya, S., Benrimoj, S.I., Gastelurrutia, M.A., Martinez-Martinez., and Sabater-Hernandez, D. (2016). Patients' expectations of the role of the community pharmacist: Development and testing of a conceptual model. Research in Social and administrative pharmacy. Volume 13, Issue 2. Pages 313-320.

Sahni, S., Talwar, A., Khanijo, S., and Talwar, A. (2017). Socioeconomic status and its relationship to chronic respiratory disease. Advanced Respiratory Medicine Journal, Volume 85, Issue 2. Pages 97-108.

Saqib A, Atif M, Ikram R, Riaz F, Abubakar M, Scahill S. (2018). Factors affecting patients' knowledge about dispensed medicines: A Qualitative study of healthcare professionals and patients in Pakistan. PLoS One. Volume13, Issue 6. Pages 1-19 e0197482. Doi: 10.1371/journal.pone.0197482. PMID: 29856753; PMCID: PMC5983558.

Schellack, N. Maimin, J. Malan, S.F., and Eksteen, M.J. (2020). Navigating medication errors – an overview and cautionary tales for pharmacists. South African Pharmacy Council. Pharmaciae. eVolume 17, Issue 1. Available at <Navigating medication errors –

an overview and cautionary tales for Pharmacists – Pharmaciae – SAPC>, [Accessed on the 30 august 2020].

Schlemmer, A., and Mash, B. (2006). The effects of a language barrier in a South African District Hospital. South African Medical Journal, Volume 96, Issue 10. Pages 1080-1087.

Schommer, J.C. (1997). Patients' expectations and Knowledge of patient counselling services that are available from pharmacists. American Journal of Pharmaceutical Education. Volume 61, Issue 1. Pages 402-406.

Smith, J., and Noble, H. (2014). Bias in research. Evidence based nursing. Volume 17, Issue 4. Pages 100-101.

South African Pharmacy Council (2018). Good pharmacy Practice in South Africa. Good Pharmacy practice manual and associated SAPC rules, SAPC, Pretoria. Pages 1 to 150.

Spears, T. (2010). Community pharmacists play key role in improving medication safety. Pharmacy times. Volume 76, Issue 11. Available at < Community Pharmacists Play Key Role in Improving Medication Safety (pharmacytimes.com)> [Accessed on the 12 July 2021].

Ssonko, M., Stanaway, F., Mayanja, H.K., Namuleme, T., Cumming, R., Kyalimpa, J.L., Karamagi, Y., Mukasa, B., and Naganathan, V. (2018). Polypharmacy among HIV positive older adults on anti-retrovirual therapy attending an urban clinic in Uganda. BMC Geriatrics, Article 125. https://doi.org/10.1186/s12877-018-0817-0.

Statistics SA. (2016). Community Survey, Provincial Profile: Gauteng. Report number 03-01-09. Pages 15-17.

Statistics SA. (2018a). Mortality and causes of deaths in South Africa, 2016: Findings from death notifications. Statistical release. P0309.3. Pages 20-54.

Statistics SA. (2018b). Men, women, and Children: Findings of the living conditions survey 2014/15. Report No. 03-10-02 (2014/15). Pretoria, South Africa. Pages 12-15.

Taherdoost (2016). Validity and reliability of the research instrument; Hwo to test the validation of a questionnaire/Survey in a research. International journal of academic research in management. Volume 5, Issue 3. Pages 28-36.

Thamby, S.A., and Subramani, P. (2014). Seven-star pharmacist concept by World Health Organization. Journal of young pharmacists. Volume 6, Issue 2. Pages 1-3.

The USA Food and Drug Administration (2016). Why you need to take your medication as prescribed or instructed. Available online at [https://www.fda.gov/drugs/special-features/why-you-need-take-your-medications-prescribed-or-instructed], accessed on the 30 July 2020.

Ward, K., Sanders, D., Leng, H., and Pollock, A. (2014). Assessing equity in the geographical distribution of community pharmacies in South Africa in preparation for a national health insurance scheme. Bulletin: World Health Organization. Volume 2014, Issue 92. Pages 482-489. Doi: http://dx.doi.org/10.2471/BLT.13.130005

Welman, C., Kruger, F. and Mitchell, B. (2005). Research Methodology. 3rd Ed. Oxford University Press. Cape Town. South Africa, pages 2-25.

Wilbur, K., Salam, S. E., & Mohammadi, E. (2010). Patient perceptions of pharmacist roles in guiding self-medication of over-the-counter therapy in Qatar. Patient preference and adherence. Dove Press journal. Volume 4, Issue Apr. Pages 87–93.

World Health Organization (2003). Adherence to long-term therapies. Evidence for action. World Health Organization publication. Geneva, Switzerland, pages, xii-xiv, 1-20.

World Health Organization. (2006). New tool to enhance role of pharmacists in health care. Available online at: <http:/www.who.int/mediacentre/news/new/2006/nw05/en/> [Accessed on the 25 March 2019].

World Health Organization. (2015). Raised blood pressure (SBP > 140 or DBP >90), Age -standardised (%) Estimates by country. Available online at <https://apps.who.int/gho/data/view.main.2464ESTSTANDARD?lang=en > [Accessed on the 15 June 2020].

World Health Organization. (2018). Health inequities and their causes. Available online at <Health inequities and their causes (who.int)> [Accessed on the 12 July 2021].

World Health Organization. (2019). Medication safety in polypharmacy. Technical report. WHO/UHC/SDS/2019.11. [Accessed on the 20 Nov 2020].

World Health Organization. (2020). Health workforce. Pharmaceutical personnel. The global health observatory. Available at:

<https://www.who.int/data/gho/data/themes/topics/indicator-groups/indicator-group-details/GHO/pharmaceutical-personnel> [Accessed on the 12 July 2021]

Worley MM, Schommer JC, Brown LM, Hadsall RS, Ranelli PL, Stratton TP, Uden DL. (2007). Pharmacists' and patients' roles in the pharmacist-patient relationship: are pharmacists and patients reading from the same relationship script? Res Social Adm Pharm. Volume 3, Issue 1. Pages 47-69. Doi: 10.1016/j.sapharm.2006.03.003. PMID: 17350557.

Zeind, C.S and McCloskey, W.W. (2006). Pharmacist's role in the Health Care System. Harvard Health Policy Review. USA, Volume 7, Issue 1. Pages 147 to 153.

APPENDIX 1: ETHICS CLEARANCE CERTIFICATE

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

R14/49 Mr S Rivombo

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M190829

NAME: (Principal Investigator)	Mr S Rivombo
DEPARTMENT:	School of Therapeutic Sciences Department of Pharmacy and Pharmacology Medical School University
PROJECT TITLE:	Determining what services the patient expects from a community or hospital pharmacist and what they actually get from the pharmacist
DATE CONSIDERED:	2019/08/30
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Professor M Danckwerts
APPROVED BY:	CB Penny Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	2019/10/25

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the 3rd Floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.
I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to submit details to the Committee. I **agree to submit a yearly progress report**. When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **August** and will therefore reports and re-certification will be due early in the month of **August** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

21 Nov 2019
Date

PLEASE QUOTE THE CLEARANCE CERTIFICATE NUMBER IN ALL ENQUIRIES

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Office of the Deputy Vice-Chancellor (Research & Post Graduate Affairs)

TO: Mr S Rivombo
School of Therapeutic Sciences
Department of Pharmacy and Pharmacology
Medical School
University

E-mail: rivombos@yahoo.com

CC: Supervisor: Professor M Danckwerts <Michael.Danckwerts@wits.ac.za>
and <HREC-Medical.ResearchOffice@wits.ac.za>

FROM: Iain Burns
Human Research Ethics Committee (Medical)
Tel: 011 717 1252

E-mail: Iain.Burns@wits.ac.za

DATE: 2019/10/25

REF: *R14/49*

PROTOCOL NO: **M190829** *(This is your ethics application study reference number. Please quote this reference number in all correspondence relating to this study)*

PROJECT TITLE: *Determining what services the patient expects from a community or hospital pharmacist and what they actually get from the pharmacist*

Please find attached the Clearance Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to the Government funding of the University.

MSWorks2000/Iain0007/Clearscan.wps

APPENDIX 2: STUDY INFORMATION DOCUMENT (English)

STUDY INFORMATION DOCUMENT

Determining what services, the patient expects from a community or hospital pharmacist and what they actual get from the pharmacist

Dear Sir/Madam,

My name is Sammy Rivombo, and I am a post-graduate student at Wits University. I am currently enrolled for Master of Science in Medicine (Pharmaceutical Affairs), and I am in the process of writing my research report. As a pharmacy visiting patient, I invite you to participate in the research study entitled **"Determining what services the patient expects from a community or hospital pharmacist and what they actual get from the pharmacist".**

The objective of the study is to evaluate what the patient expects from a pharmacist when presenting them with a prescription to fill and what they receive from the pharmacist when the pharmacist dispenses the prescription. The study explores the gaps between patients' expectations and what they actually get from a hospital/community pharmacist. The intent is to find ways to close these gaps and to ensure that the desired treatment outcomes are realized. The enclosed questionnaire will be used to collect information.

Your participation in this research project is completely voluntary. You may decline altogether or may stop participating at any time. This will not affect you in any way or the relationship that you have with the pharmacy. There are no known risks to participation. There is no direct benefit for taking part in this study. Your responses will remain anonymous, and confidentiality will be provided to the fullest extent possible. Data from

this research will be kept under lock and key and reported only as a collective combined total in the research report.

If you agree to participate in this project, please answer the questions on the questionnaire as best you can. It should take approximately 25 minutes to complete. Please drop the questionnaire as soon as you complete it in the box.

If you have any further questions later about this project, feel free to contact me (the researcher) at:
Mr. S Rivombo, Cell No.076 466 0091, e-mail: rivombos@yahoo.com or
Supervisor: Prof Danckwerts at 011 717 2499, e-mail: michael.dankwerts@wits.ac.za

This study has been approved by the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg ("Committee"). A principal function of this Committee is to safeguard the rights and dignity of all human subjects who agree to participate in a research project and the integrity of the research.
If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za

Thank you for reading this study information sheet.

Jan 2020

APPENDIX 3: STUDY INFORMATION DOCUMENT (ZULU)

INCWADI YOLWAZI

Ukuthola ukuthi yini isiguli esilindele ukuyithola kusokhemisi womphakathi noma wasesibhedlela nokuthi yini esiyitholayo ngempela kusokhemisi

Sawubona Mnumzane/Nkosazana

Igama lami ngingu-Sammy Rivombo futhi ngingumfundi owenza iziqu e-Wits University. Njengamanje ngibhalisele ukwenza iziqu zokufunda ngemithi (i-Master of Science ku-Medicine) futhi ngisesimweni sokubhala umbiko wami wocwaningo. Njengekhemisi elivakashela isiguli, ngiyakumema ukuba uhlanganyele ocwaningweni lokuhlola olunesihloko esithi **"Ukuthola ukuthi yini isiguli esilindele ukuyithola kusokhemisi womphakathi noma wasesibhedlela nokuthi yini esiyitholayo ngempela kusokhemisi".**

Inhloso yocwaningo ukuhlaziya lokho isiguli esikulindele kusokhemisi lapho simnikeza incwadi yemithi evela kudokotela nalokho esikutholayo kusokhemisi lapho usokhemisi ekhipha imithi. Lolu cwaningo luhlola izikhala phakathi kwalokho iziguli ezikulindele nalokho ezikutholayo ngempela kusokhemisi wasesibhedlela/womphakathi. Inhloso ukuthola izindlela zokuvala lezi zikhala nokuqinisekisa ukuthi imiphumela yokwelapha oyifunayo iyatholakala. Iphephambuzo elifakiwe lizosetshenziselwa ukuqoqa ulwazi.

Ukubamba kwakho iqhaza kule phrojekthi yocwaningo kungokokuzithandela ngokuphelele. Ungase wenqabe ngokuphelele noma ungayeka ukubamba iqhaza nganoma yisiphi isikhathi. Lokhu ngeke kukuphazamise nganoma iyiphi indlela wena noma ubuhlobo obunakho nekhemisi. Azikho izingozi ezaziwayo zokuhlanganyela. Ngeke ukhokhelwe ngokubamba iqhaza. Izimpendulo zakho zizohlala zifihlwe igama futhi

ubumfihlo buzohlinzekwa ngokugcwele kangangokunokwenzeka. Idatha etholakale kulolu cwaningo izogcinwa ikhiyelwe futhi kubikwe ngayo kuphela njengengqikithi ehlanganisiwe yombiko wocwaningo.

Uma uvuma ukubamba iqhaza kule phrojekthi, sicela uphendule imibuzo ekuphephambuzo ngokusemandleni akho. Kumele kuthathe cishe imizuzu engu-25 ukuligcwalisa. Lapho usuqedile, sicela unikeze imininingwane kumphenyi.

Uma uneminye imibuzo kamuva mayelana nale phrojekthi, zizwe ukhululekile ukuxhumana nami (umcwaningi) ku:

Mnu S Rivombo, Inombolo yocingo: 076 466 0091, i-imeyili: rivombos@yahoo.com noma

uSuphavayiza: Sol Danckwerts ku-011 717 2499, i-imeyili: michael.dankwerts@wits.ac.za

Lolu cwaningo seluvunyelwe yiKomidi ye-Human Researh Ethics (i-Medical) le-University of the Witwatersrand, eGoli. Umsembenzi waleli Komidi ukuvikela amalungelo nesithunzi sabo bonke abantu abavuma ukubamba iqhaza kuphrojekthi yocwaningo Kanye nobuqotho balolucwaningo.

Uma kukhona okukukhathazayo ngendlela lolu cwaningo olwenziwa ngayo, sicela uthinte uSihlalo waleli Komidi onguProfesa Clement Penny, inombolo yocingo: 011 717 2301, i-imeyili: Clement.Penny@wits.ac.za noma ikomidi: 011 717 2700/1234, i-imeyili: Zanele.Ndlovu@wits.ac.za noma Rhulani.Mukansi@wits.ac.za

Ngiyabonga ngokufunda leli phepha.

uMasingana 2020

Ozithobayo,

Mnu S. Rivombo (UMPHENYI)

APPENDIX 4: SURVEY QUESTIONNAIRE (ENGLISH)

SURVEY QUESTIONNAIRE

Instructions :

1. Please answer all the questions.
2. Indicate your choice by means of an X.
3. The questionnaire consists of five sections: A to E, answer all questions.

Section A: Biographical details

A1. What is your age?

Under 20 years	20 - 29 years	30 - 39 years	40 - 49 years	50 - 59 years	60 years +

A2. What is your gender?

Male	Female

A3. What is your race?

African	Indian	Coloured	White	Other

A4. What is your level of education?

No schooling completed	Primary/Secondary	Tertiary

A5. Select the type of pharmacy you were visiting.

Public Hospital Pharmacy	Private Hospital Pharmacy	Chain store retail pharmacy	Independent Pharmacy

A6. How many times did you visit a pharmacy in the past 12 months?

Never	Once	Twice	Monthly	Very frequently (more than once a month)

A7. How long have you been taking the prescribed/current medicine?

First time	One month	6 months – 1 year	More than a year

A8. How often do you have your prescription filled in this pharmacy?

First time	Seldom	Often	Always

Section B: Patients' expectations from pharmacists when having their prescription filled.

Please indicate with an "X" how important would you rate the following information when having your prescription filled by a pharmacist.

B	How important is the following when having your prescription filled by a pharmacist?	Not important	Slightly important	Reasonably important	Important	Very Important
B1	Pharmacist finding out if you are on other drugs and evaluating possible medicine interactions.					
B2	Purpose of each medicine (what your medicine is used for).					
B3	Explanation of how each medicine works.					
B4	Contra-indications (Patient's conditions with which the medicine should not be used).					
B5	Precautions, e.g., instructions not to take any other drug, alcohol, or herbal products at the same time with your medications or perform certain activities such as driving while on certain medication.					
B6	Instructions on how much, how often and how long your medicine needs to be taken.					
B7	Instructions on what to do when you miss a dose.					
B8	Potential side effects and how to deal with them.					

B	How important is the following when having your prescription filled by a pharmacist?	Not important	Slightly important	Reasonably important	Important	Very Important
B9	How to know if the medicine is working or not.					
B10	Explanation of the effects of stopping medicine.					
B11	Symptoms of overdose and particulars of its treatment.					
B12	How to safely store your medicine (storage conditions).					
B13	How long can your medicines be used for after opening (e.g., 30 days for sterile eye drops).					
B14	Demonstration of how to use certain diagnostic devices, e.g., Glucose meter, etc. dispensed with your medicine.					
B15	How to safely dispose of remaining medicine at the end of treatment.					
B16	Advice on other factors that may have influence on the success of treatment, e.g., lifestyle issues such as lack of exercise, etc.					
B17	Opportunity to ask pharmacist medicine related questions.					
B18	Pharmacist assisting patients generating solutions to some potential dispensed medicine problems.					

Section C: Level of information received from the pharmacist when having your prescription filled.

Please rate the level of information you received from the pharmacist when having your prescription filled.

C	Level of information received from the pharmacist when patient was having his/her prescription filled.	Not at all	Very little information	Some information	Substantial information	Complete information
C1	Information on possible medicine interactions.					
C2	Purpose of each medicine explained (what your medicine is used for).					
C3	Explanation of how each medicine works.					
C4	Contra-indications (Patient's conditions with which the medicine should not be taken).					
C5	Precautions, e.g., instructions not to take any other medicine, alcohol, or herbal products at the same time with your medications or perform certain activities such as driving while on certain medication.					
C6	Instructions on how much, how often and how long your medicine needs to be taken.					

C	Level of information received from the pharmacist when patient was having his/her prescription filled.	Not at all	Very little information	Some information	Substantial information	Complete information
C7	Explanation of what to do when you miss a dose.					
C8	Potential side effects and how to deal with them.					
C9	How to know if the medicine is working or not.					
C10	Explanation of the effects of stopping medicine.					
C11	Symptoms of overdose and particulars of its treatment.					
C12	How to safely store your medicine (storage conditions).					
C13	How long can your medicines be used for after opening (e.g., 30 days for sterile eye drops).					
C14	Demonstration of how to use certain diagnostic devices, e.g., Glucose meter, etc. dispensed with your medicine.					
C15	How to safely dispose of remaining medicine at the end of treatment.					
C16	Advice on other factors that may have influence on the success of treatment, e.g., lifestyle issues such as lack of exercise, etc.					
C17	Opportunity to ask pharmacist medicine related questions.					
C18	Pharmacist assisting patients generating solutions to some potential dispensed medicine problems.					

Section D: Patients' satisfaction.

Please indicate with an X how you would rate each of the following questions.

D	Patient Satisfaction	Excellent	Good	Average	Poor	Very poor
D1	How would you rate the helpfulness of Pharmacy staff?					
D2	How would you rate the attitude of pharmacy staff?					
D3	How would you rate the time taken to be served?					
D4	How would you rate the level counselling relating to the use of medicine you have received?					
D5	Overall, how would rate your level of service you have received?					

Section E: Patients' perception and knowledge of the role of community/hospital pharmacist.

Please indicate with an X how you would rate each of the following questions.

E	Patients' perception and knowledge of the role of community/hospital pharmacist	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
E1	Pharmacists are health professionals whose primary responsibility is medicine.					
E2	Pharmacists have knowledge about diseases and treatment thereof and can also provide advice on health-related matters and when necessary, refer					
E3	Pharmacists just fill prescriptions as per doctors' requests.					
E4	Pharmacists are businesspeople who interpret and dispense medicines.					
E5	Do you feel confident to discuss sensitive and confidential health related matters with community or hospital pharmacists?					

APPENDIX 5: SURVEY QUESTIONNAIRE (ZULU)

IMIBUZO YOKUHLOLA
Imilayezo :

1. Sicela uphendule yonke imibuzo.
2. Khombisa ukhetho lwakho ngokusebenzisa ‘X”.
3. Lemibuzo elandelayo inezigaba ezinhlanu: A kuya ku E, uphendule yonke imibuzo.

Isigaba A:	Imininingwane ephathelene nomuntu ngokwakhe

A1. Uneminyaka emingaki?

Ngaphansi kweminyaka engama-20	20 - 29 iminyaka	30 - 39 iminyaka	40 - 49 iminyaka	50 - 59 iminyaka	60 iminyaka +

A2. Buyini ubulili bakho?

Owesilisa	Owesifazane

A3. Luyini uhlanga lwakho**?**

Omnyama	Indiya	Ikhaladi	Omhlophe	Okunye

A4. Liyini izinga lakho lemfundo**?**

Isikole asiqediwe	Amazinga aphansi/amazinga aphezulu	Izinga lokufundela umkhakha othile

A5. Khetha uhlobo lekhemisi obelivakashele**?**

Ikhemisi Yesibhedlela Somphakathi	Ikhemisi Yesibhedlela sangasese	Ikhemisi le-Chain-shop	Ikhemisi Elizimele

A6. Uhambele izikhathi ezingaki ekhemisi ezinyangeni ezingu-12 ezidlule?

Angikaze	Kanye	Kabili	Ngenyanga	Njalo (Njalo enyangeni)

A7. Isikhathi esingakanani uthatha imithi yakho yamanje obhalelwe yona?

Okokuqala	Inyanga yokuqala	Izinyanga eziyisithupha kuyela onyakeni owodwa	Kungaphezu konyaka

A8. Kukangaki lapho ugcwaliselwe iphepha lemithi yakho egciniwe kuleli ekhemisi**?**

Okokuqala	Akujwayelekile	Kujwayelekile	Njalo

Isigaba B: Ukulangazelela kweziguli ko sokhemisi mabe gcwalisa iphepha lemithi.

Sicela ubonise ngo-"X" ukuthi kubaluleka kangakanani okulandelayo uma usokhemisi egcwalisa iphepha lemithi.

B	Kubaluleke kangakanani lokhu okulandelayo uma usokhemisi egcwalisa iphepha lemithi?	**Akubalulekile**	**Kubaluleke kancane**	**Kubaluleke ngokwanelisayo**	**kubalulekile**	**Kubaluleke kakhulu**
B1	Osokhemisi bathole ukuthi ikhona yini eminye imithi oyisebenzisayo, ukuhlola ukuthi kungenzeka yini ibe nokuthikemezisana nale ozoyithola.					
B2	Inhloso yomuthi ngamunye (ukuthi imithi yakho isetshenziselwa ini).					
B3	Incazelo yokuthi umuthi ngamunye usebenza kanjani.					
B4	Izinkomba zokungasebezisi umuthi (izimo zesiguli lapho umuthi kungamele usetshenziswe).					
B5	Ukuqaphela, okunjengalokhu: imiyalelo yokungathathi noma yimiphi imithi, utshwala noma imithi yemithi ngesikhathi esifanayo nemithi yakho noma wenze imisebenzi ethile efana nokushayela ngenkathi uthola imithi ethile.					
B6	Imiyalelo yokuthi kungakanani, imithi yakho nokuthi kudinga isikhathi eside kangakanani ukuthatha umuthi wakho.					
B7	Imiyalo yokuthi yini okufanele ukwenze uma ungathathanga umuthi ngokufanele.					
B8	Imiphumela emibi engaba khona nokuthi ungabhekana kanjani nayo.					

B	Kubaluleke kangakanani lokhu okulandelayo uma usokhemisi egcwalisa iphepha lemithi?	**Akubalulekile**	**Kubaluleke kancane**	**Kubaluleke ngokwanelisayo**	**kubalulekile**	**Kubaluleke kakhulu**
B9	Indlela yokwazi uma umuthi usebenza noma cha.					
B10	Incazelo yemiphumela yokuyeka imithi.					
B11	Izimpawu zokuphuza umuthi ngokweqile nemininingwane yokwelashwa kwazo.					
B12	Indlela yokulondoloza ngokuphephile imithi yakho (izimo zokuyigcina).					
B13	Imithi yakho ingasetshenziswa isikhathi esingakanani emva kokuvulwa (isb. Izinsuku ezingu-30 ngokuphathelene namaconsi athelwa emehlweni).					
B14	Ukubonisa ukuthi ungasebenzisa kanjani amadivaysi athile okuhlola, isb. Imitha ye-glucose, njengalena enikezwe nemithi yakho.					
B15	Indlela yokugcina ngokuphepha imithi esale ekupheleni kokwelashwa.					
B16	Iseluleko kwezinye izici ezingase zibe nethonya empumelelweni yokwelashwa, isb. izinto zokuphila ezifana nokuntuleka kokuzivocavoca, njll.					
B17	Ilungelo lokubuza usokhemisi imibuzo ephathelene nemithi.					
B18	Osokhemisi basize iziguli ukuxazulula izinkinga zemithi ezinikezwa yona.					

Isigaba C: Izinga lolwazi olusuka ko sokhemisi lapho begcwalisa iphepha lemithi abayinika iziguli.

Sicela ulinganise izinga lemininingwane oyitholile kumakhemisi lapho ugcwalisa imithi yakho.

C	Izinga lolwazi/imininingwane olutholakala kusokhemisi lapho isiguli sinikezwa imithi ebhaliwe.	**Ulwazi alukho**	**Ulwazi oluncane**	**Ulwazi Olungaphelele**	**Ulwazi olugculisayo**	**Ulwazi oluphelele**
C1	Ulwazi mayelana nokusebenzisana kwemithi okungenzeka.					
C2	Inhloso yomuthi ngamunye ichaze (ukuthi imithi yakho isetshenziselwa ini).					
C3	Incazelo yokuthi umuthi ngamunye usebenza kanjani.					
C4	Izinkomba zokungafani (izimo zomguli lapho umuthi akufanele uthathwe).					
C5	Ukuqapha, isb. imiyalelo yokungathathi noma yimiphi imithi, utshwala noma imithi yemithi ngesikhathi esifanayo nemithi yakho noma wenze imisebenzi ethile efana nokushayela ngenkathi uthola imithi ethile.					
C6	Imiyalelo yokuthi ungathatha imithi yakho kangakani, izikhathi ezingaki nobude bezinsuku.					

C	Izinga lolwazi/imininingwane olutholakala kusokhemisi lapho isiguli sinikezwa imithi ebhaliwe.	Ulwazi alukho	Ulwazi oluncane	Ulwazi Olungaphelele	Ulwazi olugculisayo	Ulwazi oluphelele
C7	Incazelo yalokho okufanele ukwenze uma ulahlekelwa umthamo.					
C8	Imiphumela emibi engaba khona nokuthi ungabhekana kanjani nayo.					
C9	Indlela yokwazi uma umuthi usebenza noma cha.					
C10	Incazelo yemiphumela yokuyeka imithi.					
C11	Izimpawu zokudlula ngokweqile nemininingwane yokwelashwa kwayo.					
C12	Indlela yokulondoloza ngokuphepha imithi yakho (izimo zokugcina).					
C13	Imithi yakho ingasetshenziswa isikhathi esingakanani emva kokuvula (isb. Izinsuku ezingu-30 ngokuphathelene namaconsi athelwa emehlweni).					
C14	Ukubonisa ukuthi ungasebenzisa kanjani amadivaysi athile okuhlola, isb. Imitha ye-glucose, njll enikezwe ngemithi yakho.					
C15	Indlela yokulondoloza ngokuphepha imithi esele ekupheleni kokwelashwa.					
C16	Iseluleko kwezinye izici ezingase zibe nethonya empumelelweni yokwelashwa, isb. izinto zokuphila ezifana nokuntuleka kokuzivocavoca, njll.					
C17	Ilungelo lokubuza imibuzo ephathelene nemithi ephathelene nemithi.					
C18	Uchwepheshe wezokwelapha usiza iziguli ezenza izixazululo kwezinye izinkinga zemithi ezikhona.					

Isigaba D: Ukwaneliseka ngesineke

Sicela ubonise nge X ukuthi ungayilinganisa kanjani le mibuzo elandelayo.

D	Ukwaneliseka ngesineke	Kuhle kakhulu	Kuhle	kuncono	Kubi	Kubi kakhulu
D1	Ungalulinganisa kanjani usizo lwabasebenzi bekhemisi?					
D2	Ungasilinganisa kanjani isimo semphatho sabasebenzi bekhemisi?					
D3	Ungalinganisa kanjani isikhathi esithathiwe usizwa?					
D4	Ungalinganisa kanjani izinga lokwelulekwa eliphathelene nokusetshenziswa kwemithi oyitholile?					
D5	Ngokubanzi, ungalilinganisa kanjani izinga lenkonzo oyitholile?					

Isigaba E: Imibono yeziguli nolwazi ngendima yosokhemisi emphakathini/nosokhemisi esibhedlela.

Sicela ubonise nge X ukuthi ungayilinganisa kanjani le mibuzo elandelayo.

E	**Imibono yeziguli nolwazi ngendima yosokhemisi emphakathini/nosokhemisi esibhedlela.**	**Ngiyavuma kakhulu**	**Ngiyavuma**	**engiqiniseki**	**Angivumi**	**Angivumelani kakhulu**
E1	Osokhemisi bangabasebenzi bezempilo abaqeqeshiwe ngemithi.					
E2	Osokhemisi banolwazi ngezifo namakhambi okwenza banike izeluleko eziphathelene nempilo futhi bakuyalele ukuyothola olunye usizo uma kudingekile					
E3	Osokhemisi banikeza imithi ngokweziyalezo zikadokotela.					
E4	Osokhemisi bangabantu bebhizinisi abanikeza incazelo futhi bakhiphe imithi.					
E5	Ingabe uzizwa unesiqiniseko sokuxoxa ngezinto ezithinta ezempilo nezimfihlo eziphathelene nezempilo yosokhemisi emphakathini/nosokhemisi esibhedlela?					