HEALTH AND MEDICINE INFORMATION SEEKING BEHAVIOUR
AND NEEDS OF RESIDENTS RECEIVING CHRONIC MEDICATION
AT ROTARUS OLD AGE HOME IN MAFIKENG

A mini-dissertation submitted by

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DECLARATION

I declare that the mini-dissertation hereby submitted to the Sefako Makgatho Health Sciences University, for the degree of Master of Pharmacy, in the School of Pharmacy, has not previously been submitted by me for a degree at this or any other university; that it is my work in design and execution, and that all material contained herein has been duly acknowledged.

__________________________  ________________________
Rumhuma, N (Ms)             Date
DEDICATION

I would like to thank the Lord Almighty for guiding me through this research study.
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# ABBREVIATIONS AND ACRONYMS

<table>
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>GPP</td>
<td>Good Pharmacy Practice</td>
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<tr>
<td>HISB</td>
<td>Health Information Seeking Behaviour</td>
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<td>MISB</td>
<td>Medicine Information Seeking Behaviour</td>
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<tr>
<td>SA</td>
<td>South Africa</td>
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<tr>
<td>SAPC</td>
<td>South African Pharmacy Council</td>
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<tr>
<td>SMUREC</td>
<td>Sefako Makgatho Health Sciences University Research and Ethics Committee</td>
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<tr>
<td>TVs</td>
<td>Televisions</td>
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<td>WHO</td>
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ABSTRACT

Introduction: Little research has been conducted on the health and medicine information seeking behaviour of older adults in developing countries. Much research exists on younger literate generations in developed countries. Health care today has shifted its focus from patients playing a minor and exclusive role in their medication use process to them playing a more active and inclusive role. The normal instructive transfer of information to patients from health care workers is no longer favourable. Increased patient safety must be promoted. This can be done through ensuring that patients, particularly the elderly, understand that the rights to knowledge of their health, their medication and the expectations they have of health care workers are being met.

Objectives: The objectives of the study were to establish the health and medicine information needs of old age home residents; to establish why, how, where and from whom they seek health and medicine information; to identify the challenges encountered by old age home residents in seeking and accessing health and medicine information and to determine the role of health care providers in addressing their health and medicine information needs.

Method: A descriptive study including quantitative and qualitative data was conducted. All inclusive sampling was used to recruit 32 residents and five health care workers. Individual interviews were conducted with residents using a structured questionnaire to determine their health and medicine information needs and health and medicine information seeking behaviour. Quantitative data were entered on Microsoft Excel™ spread sheets and categorical data were summarised as frequency counts and percentages whilst continuous variables were summarised as means with standard deviations or medians. Data were presented in tabular format or displayed as figures. An interview guide was used to conduct individual in-depth interviews with the health care workers to explore themes related to health and medicine information needs and health and medicine information seeking behaviour of the residents. Interviews were voice recorded using a digital voice recorder and then transcribed verbatim. Nvivo11™ was used for initial coding of transcripts. Data were coded and categories were developed into a framework of themes. Residents’ responses were compared with the findings from the in-depth staff interviews for final interpretation of the data.

Results: The results of this study reflect a passive patient who has accepted and adapted to his/her health status due to patient related and systemic factors. Poor knowledge of information sources, health and medicine related knowledge contributed to a lack of information seeking practices. Residents did not actively seek health and medicine information
and challenges they faced in accessing and seeking health and medicine information resulted in poor understanding of the medicine taking processes.

**Conclusion:** There was an inability of residents to actively seek health and medicine information exhibited which was underpinned by their passivity and disempowerment. Unmet health and medicine information needs were also reported. The study confirmed that pharmacists in public health can assist in educating the elderly and those who care for them on matters relating to their chronic conditions, chronic medication and health care needs. This study served to ignite interest and awareness into the health and medicine information needs and the health and medicine information seeking behaviour of the elderly who now constitute a big part of today’s population as they are living longer.

**Recommendations:** Further studies should be conducted on the health and medicine information seeking behaviour and needs of old age home residents in South Africa. Pharmacists can play different roles in an old age home setting such as educating medical practitioners, nurses and other nursing home staff about medication use, reviewing medication prescribed by medical practitioners and being a part of a multi-disciplinary team. Public health pharmacists would be essential in conducting in service training for both the residents and health care workers on the health and medicine information needs of the residents which could assist with resolving unmet needs of the residents and facilitate communication between the pharmacy and the old age home. Better communication and collaboration will facilitate better patient care within the multi-disciplinary team handling old age residents, their needs and lacks.
CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION

This introductory chapter provides a description of the background and the rationale for the study. The research questions, aim and objectives of the study are then outlined. This chapter concludes with an overview of the importance of the study and an outline of the dissertation.

1.2 BACKGROUND AND RATIONALE FOR THE STUDY

Rational medicine use stipulates that "patients receive medications appropriate to their clinical needs, in doses that meet their individual requirements, for an adequate period of time, and at the lowest cost to them and their community" (WHO, 1985). Irrational medicine use is still an unsolved and global health problem, not only in all health care settings and all countries, but also in communities (WHO, 2012).

Part of the services rendered by the pharmacy at Mafikeng Provincial Hospital include the monthly dispensing of chronic medication for residents of Rotarus Old Age Home, as prescribed by a volunteering private practice medical practitioner. Dispensed prescriptions are individually packaged by the pharmacy and dispatched to the home. Once at the home, the staff nurse there ensures that all the chronic medication has been received upon delivery from the hospital pharmacy. This chronic medication is then administered by the staff nurse and caregivers to the residents as per the prescribed time intervals. As a result, the dispensing pharmacists from Mafikeng Provincial Hospital are unable to monitor medication outcomes in terms of signs of effectiveness, compliance and safety of therapy as required by Good Pharmacy Practice (GPP) guidelines of the South African Pharmacy Council (SAPC) (SAPC, 2010). However, all this is essential in order for the benefits of medicine taking to be enjoyed by patients, which will in turn yield rational medicine use.

Elderly people normally have much different and often more prevalent and chronic health care needs and challenges compared to younger adults (Chaudhuri, Le, White, Thompson & Demiris, 2013). An understanding of patients' information seeking behaviour is important in the development of strategies targeted at improving and promoting medication safety (Carter, Moles, White & Chen, 2013). It is imperative that health care providers have a thorough understanding of the health and medicine information seeking behaviour and the health and
medicine information needs of older adults. This will enable healthcare providers to gain insight into the challenges that older people experience when accessing health and medicine information, and the implications, whether positive or negative, on their medicine-taking behaviour. In addition, healthcare providers ought to gain understanding of these information-seeking patterns and needs of elderly patients as this will assist in improving compliance to treatment, health promotion strategies as well as rational medicine management (Dominic, Shashidhara & Nayak, 2013). Furthermore, an understanding of the health and medicine information needs of older adults and the role health and medicine information seeking plays will assist in ensuring that older adults enjoy health as a human right (Manafo & Wong, 2012).

Considering the importance of health and medicine information amongst the elderly, this study aimed to investigate the health and medicine information needs as well as the health and medicine information-seeking behaviour of older adults. Furthermore, it aimed to determine the role that healthcare professionals (nurses, medical practitioners, pharmacists and other health care workers) play, in understanding their health and medicine information needs.

1.3 RESEARCH QUESTIONS

What are the health and medicine information needs and the health and medicine information seeking behaviour of residents at Rotarus Old Age Home in Mafikeng?

What role can healthcare providers at Rotarus Old Age Home play in residents’ health and medicine information needs?

1.4 AIM OF THE STUDY

The primary aim of this study was to investigate the health and medicine information needs and the health and medicine information-seeking behaviour exhibited by Rotarus Old Age Home residents.

The secondary aim was to determine the role of healthcare providers at Rotarus Old Age Home in residents’ health and medicine information needs.
1.5 OBJECTIVES OF THE STUDY

The objectives of the study were as follows:

- To establish the health and medicine information needs of old age home residents
- To establish why, how, where and from whom old age home residents seek health and medicine information
- To identify the challenges encountered by old age home residents in seeking and accessing health and medicine information
- To determine the role of health care providers in addressing the health and medicine information needs of old age home residents

1.6 IMPORTANCE OF THE STUDY

An ideal and functional health care system is one in which patients receive care from a multidisciplinary team of health care professionals. The medical practitioner’s purpose would be to consult with patients and prescribe medication appropriate for their disease states, with the assistance of a nurse as needed. The pharmacist’s role would then be to dispense medication to the patients after verifying the prescription for correctness and to counsel the patients to ensure that they thoroughly understand what medication they are taking, why they are taking the medicine, how the medication must be taken, what side effects they can expect and what to do about them (Manafio & Wong, 2012). This way, patients will be able to enjoy maximum benefits from the medicine use process.

Unfortunately, more often than not, medication is dispensed for some patients in their absence as is the case for most old age home settings. Role substitution then occurs, when for example, nurses and caregivers play the part of the medical practitioner or pharmacist in counselling patients on the medication use process.

Determining the health and medicine information seeking behaviour and needs of old age home residents and the role played by health care workers was thus essential as there is limited data available in South Africa. Much data currently exists on the health and medicine information seeking behaviour in settings other than old age homes. As such, the findings of this study provide a baseline that may inform future research.
1.7 OUTLINE OF THE DISSERTATION

The dissertation begins with an introductory chapter, providing the rationale for the study, the aim of the study and the objectives to be achieved from the study. This is followed by the literature review of the study topic in Chapter 2. The method of the study is described in detail in Chapter 3. Chapter 4 presents a manuscript which will be submitted to a peer-reviewed journal, containing the results of the study and discussion thereof. Chapter 5 concludes the dissertation with the limitations of the study, recommendations for future practice studies and the final conclusion.
CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter the literature pertaining to the study topic is reviewed. The chapter begins with an overview of what health and medicine information is. This is followed by a description of what the sources of health or medicine information are, as well as health or medicine information seeking behaviour and models of health and medicine information seeking behaviour. Factors that influence health or medicine information seeking behaviour and health literacy are discussed. The chapter concludes with a discussion of the role of health care providers in adult health.

2.2 HEALTH AND MEDICINE INFORMATION

Health has been defined as a human right as well as a central input to socio-economic development and poverty reduction (WHO, 2012). Medicines on the other hand have been defined as an important element of health systems and an essential and cost-effective tool to health care. A good health system is one in which quality services are delivered to all people where and when they need them (WHO, 2012).

Over the years, older adults have become more health conscious and active participants in issues regarding their health e.g. obtaining information on preventative health. In order to maintain their independence, health and well-being, the correct use and understanding of medicine taking are crucial considerations (Manafio & Wong, 2012). According to Patel and Dowse (2013), medicine information is essential as it empowers the medicine taking practices of patients. When the information needs of patients are matched by the information they receive, increased adherence to medicine, self-management and self-care will result (Patel & Dowse, 2013; Longo, 2005).

2.3 SOURCES OF HEALTH OR MEDICINE INFORMATION

South Africa (SA) is currently facing a heavy and increasing chronic disease burden and an understanding of how individuals seek medical care has therefore become a large priority (Patel & Dowse, 2013; Case, Menendez & Ardington, 2005). Access to health or medicine information is important to most people, especially when their health deteriorates (Yang & Beatty, 2015). These people may be dissatisfied with the health information they receive
through traditional avenues such as from a medical practitioner or nurse and as such may seek further information (Fox & Rainie, 2002).

Health information is often obtained by patients from a mixture of sources although medical practitioners have been classified as one of the most reliable and favoured sources (Mayer, Terrin, Kreps, Menon, McCance, Parsons & Mooney, 2007; Narhi, 2007). Despite medical practitioners being the most preferred, they are not necessarily the most frequently used source as evidenced by some studies. Other sources of health information have been named to be information leaflets, internet, pharmacists, nurses, books, newsletters, televisions (TVs), magazines and newspapers as well as friends and family (Narhi, 2007; Rutten, Arora, Bakos, Aziz & Rowland, 2005; Sleath, Wurst & Lowrey, 2003; Mills & Davidson, 2002; Huber & Cruz, 2000).

It is essential for health care providers to understand that social relationships may influence behaviour. Social scientists involved in health care have placed emphasis on the behaviour exhibited by patients that is based on medical decisions they make. Two perspectives in this area have highlighted that i) patients make their decisions whilst in isolation and ii) patients consult with others, that is health and non-health professionals, who form a social network that by definition are the relationships amongst people. This interaction resultanty often has an impact on the decisions they make regarding their health (Kjos, Worley & Schommer, 2011).

Studies conducted previously have indicated that individuals place trust in social ties as well as derive assurance from them. Communication regarding health is now occurring outside formal institutions such as the pharmacy counter or medical practitioner’s room. Health researchers have classed social networks as ‘inside’ e.g. medical practitioners, nurses or pharmacists (professional ties) or ‘outside’ e.g. family, friends, acquaintances (lay ties) of the health care system (Kjos, Worley & Schommer, 2011).

Patel and Dowse (2013) stated some of the variety of potential sources of medicines information in their study. They mentioned that there was an almost complete lack of awareness of how to access these sources and that most patients did not look for any additional information other than that routinely provided to them. These sources of information are the following;

- Posters
- Patient information leaflets
- Package inserts
- Radios
2.4 HEALTH OR MEDICINE INFORMATION SEEKING BEHAVIOUR

Health information seeking behaviour (HISB) refers to “the behaviour displayed by a person in a conscious effort to promote own optimum wellness, or seek medical treatment for an ailment or illness and rehabilitation” (Wentzel & Voce, 2012). Lambert and Loiselle (2007) described it as the behaviour exhibited by individuals as they try to garner information about risks to health, health promotion, as well as illness and health. It has been studied in a variety of contexts that include medication use (Kjos, Worley & Schommer, 2011).

Most of the literature available on HISB portrays patients from developed high-income countries that are educated and literate. These patients are well versed with their medication and disease states and are consequently able to actively participate in the process of seeking information and making decisions regarding their medication and health (Patel & Dowse, 2013; Hamrosi, Aslani & Raynor, 2012). However, the patients of limited literacy skills from these same developed countries struggle as they try to obtain and comprehend information (Patel & Dowse, 2013; El Samman, Chaar, McLachlan & Aslani, 2013). In low- to middle-income developing countries, factors such as limited education, limited health literacy, poverty, stigma and lack of access to health care and technology may further worsen this (Dutta, 2009). A few studies from developing countries have specifically aimed to investigate HISB. Two Iranian studies, one in patients and the other in library users, described the HISB process as a passive one, with the most common source of information being family and friends, followed by TVs for the library users (Gavgani, Qeisari & Asghari Jafarabadi, 2013; Gavgani, 2010).

Medicine information seeking behaviour (MISB) which falls under the umbrella term HISB describes “the behaviour exhibited by an individual in obtaining information regarding medications, for instance, medication dosages or alternatives, in order to make decisions regarding health care and understand the medication use experience” (Kjos, Worley & Schommer, 2011). Comprehension of MISB is essential in developing strategies aimed at assisting patients with information beyond facts, which will improve therapeutic outcomes and promote medication safety (Carter, Moles, White & Chen, 2013; Kjos, Worley & Schommer, 2011).
2.5 HEALTH AND MEDICINE INFORMATION SEEKING BEHAVIOUR MODELS

Models that describe HISB have been developed and some of these describe the stages involved in HISB and the factors that may influence information seeking (Patel & Dowse, 2013; Anker, Reinhart & Feeley, 2011; Lambert & Loiselle, 2007; Johnson, Spitzer & Williams, 2001; Freimuth, Stein & Kean, 1989). The Expanded Longo Model places emphasis on patients experiencing improved health outcomes, feeling satisfied and being empowered. This model describes consumers/patients who actively look for information regarding their health or medication or those that passively encounter this information as they go about their daily activities (Patel & Dowse, 2013; Longo, 2005). The model also places emphasis on the ability of patients to comprehend and utilise information obtained, which translates to positive outcomes namely improved satisfaction, locus of control, health outcomes and empowerment (Patel & Dowse, 2013; Longo, 2005). The findings of a review of studies on HISB were integrated by Anker et al., (2011) into a framework that demonstrates the information seeking process as a linear one and considers the association of patient characteristics with engagement in health information seeking and related health outcomes.

2.6 FACTORS THAT INFLUENCE HEALTH OR MEDICINE INFORMATION SEEKING BEHAVIOUR

It is evident that patients partake in HISB in order to cope with and adjust to their illnesses, manage and understand their on-going chronic conditions and promote their well-being (Ellis, Mullan, Worsley & Pai, 2012; Lambert & Loiselle, 2007). Studies from samples of cancer patients assessing general rather than medication specific information seeking behaviours have highlighted gender, race, education, the phase of one’s illness and age as factors affecting information seeking behaviour. Those with higher levels of education and those who are of a younger age have been identified as seeking more information than their less educated and older counterparts. In the early stages of diseases, patients prefer written materials as a source of health information whilst family and friends become the ideal source with disease progression (Mayer et al., 2007; Rutten et al., 2005). The effect of race has however been inconsistent (Williams, Anstrom, Friedman & Schulman, 2007).

Health literacy has been proven to be essential in aiding patients to understand the available treatment options for their chronic conditions. Clinicians must be aware of the link between health literacy and the HISB, since an individual’s interest and ability to seek out health information may be affected by an individual’s health literacy (Ellis et al., 2012). Many developing countries have reported widespread limited literacy which consequently affects
one’s ability to both seek and understand health information (Patel & Dowse, 2013; Cramm & Nieboer, 2011).

Studies have shown that adults over the age of 65 years have the lowest health literacy levels, with a rapid decline that begins from age 55 (Manafo & Wong, 2012). A study conducted into the information needs and information seeking behaviour of cancer patients showed that in the ‘patient-centred’ era some patients, especially older patients and men still adopt a non-participatory role in the management of their illness (Leydon, Boulton, Moynihan, Jones, Mossman, Boudioni & McPherson, 2000). A study by Patel and Dowse (2013) found that many patients with limited literacy skills experienced powerlessness when they had encounters with health care professionals and lacked control in maintaining their health.

Chronic disease management models in Australia are patient focused in that they ensure that there is a degree of health literacy that enables the patient to comprehend factors that may ‘aggravate’ symptoms and the treatment options available for this symptom management. Low patient health literacy is directly linked with little understanding of the medication taken for chronic conditions. This poses the risk of increasing the incorrect use of medication which is linked with the risk of poor health outcomes (Ellis et al., 2012).

Health care providers are responsible for ensuring that they have an understanding of the beliefs and behaviours of their patients. This encompasses their use of complementary alternative medicines to meet their needs as well as preferences together with switching between different caregivers, which may pose a threatening effect on appropriate treatment (Hjelm & Atwine, 2011). With older adults living longer and living a better life, they have become active information seekers in a bid to prioritise their health (Manafo & Wong, 2012). A study conducted by Gladden (2000) in the United States of America on hospitalised patients concluded that older adults looked for communication directly from their medical practitioners, excluding support workers. When this communication was not found from their medical practitioners, they felt isolated and that decisions were being made for them. It is thus important for older adults to adopt a participatory role in matters of their health and become less like victims of their disease states and treatment options offered to them (Gladden, 2000).

South African research on cultural, socio-economic and organisation contexts influencing the patient-provider relationship indicates a probable compromised quality of patient-provider communication due to barriers including language, socio-economic standing and the use of medical jargon (Penn, Watermeyer & Evans, 2011; Levin, 2008). Some papers have reported the authoritarian approach that is used by nurses in the public sector which comes about as a
result of the difference in power between the health care provider and the patient as a downfall in maintaining healthy patient-provider relationships (Patel & Dowse, 2013).

2.7 HEALTH LITERACY

Health literacy is an issue of importance in both the health care setting and the public sphere (Pleasant & Kuruvilla, 2008). Nutbeam (1998) defined health literacy as “represent(ing) the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health.” In later years, the WHO (2012) defined health literacy as “an individual’s ability to access, understand and use basic health information and services in order to make appropriate health decisions.”

The evaluation of health literacy can be done using a health literacy test, which has however been criticised as not being adequate enough to capture all elements of health literacy and better suited for use in generally developed and high income countries (Manafo & Wong, 2012). A compromised ability to look for and understand health information links with low literacy levels (Patel & Dowse, 2013). Older adults are among the subset of the population that are at greater risk for lower levels of health literacy. According to Manafo & Wong (2012), health literacy has been identified as a critical empowerment strategy that could be used to improve control over one’s health amongst vulnerable groups. In addition, health literacy is aimed at increasing the ability of people to take responsibility of their health as well as seek out information regarding their health (Pleasant & Kuruvilla, 2008).

The Health Literacy Skills framework has been developed to show the functioning of health literacy in individuals, highlighting how health literacy and health outcomes speak to one another (Squiers, Peinado, Berkman, Boudewyns & McCormack, 2012). This framework is classified into the following five categories:

- Health promotion – actions taken to increase control over one’s health
- Health protection – actions taken to prevent and protect health
- Disease prevention – actions taken to prevent the onset of illness or disease
- Health care – actions taken to seek care
- Navigations – actions taken to utilise programs, services and care
It is essential to note that this framework also reflects how external factors may influence the constructs and relations represented in the framework. These external factors include but are not limited to culture, community, media, setting and family (Squiers et al., 2012).

2.8 THE ROLE OF HEALTH CARE PROVIDERS IN ADULT HEALTH

For older adults support from health care providers can only come, if and only if, health care providers are familiar with the health and medicine information challenges they encounter on a day to day basis. These challenges include the existence of barriers to accessing and processing health and medicine information obtained. Literature has revealed the relevance of seeking health and medicine information as individual people age and the effect health literacy has on this (Manafo & Wong, 2012).

2.8.1 Medical Practitioners

Studies have shown that on average, 50% of patients take their prescribed medicines erratically, erroneously or not at all. Reasons for this have been cited as cessation of symptoms, the medicine being perceived as ineffective, occurrence of side effects and complicated dosage regimes for patients, especially the elderly. Ensuring enhanced adherence to treatment by patients is part of the medical practitioner’s responsibility and this can be achieved through prescribing well-chosen medicine treatments; empowering patients with the necessary information, warnings and instructions and establishing a good medical practitioner-patient relationship. Providing patients with information, warnings and instructions is critical in that it enables them to accept and follow their treatment aptly with the necessary skills. It is the medical practitioner’s prime task to ascertain that patients know their treatment and this cannot be shifted to the package insert or the pharmacist (de Vries, Henning, Hogerzeil & Fresle, 2000).

2.8.2 Pharmacists

Pharmacists play the role of counselling and educating patients about their medication which will in turn empower them to make well-informed decisions in their medicine-taking practices (Lee, Armour & Krass, 2007). There are minimum standards that pharmacists must thus follow when they dispense medicines or scheduled medicines. The process of dispensing consists of the following three phases:
Chapter 2: Literature Review

Phase 1: Interpretation and evaluation of the prescription

This entails receiving prescriptions and confirming their integrity and the pharmacist or pharmacist intern under the direct personal supervision of the pharmacist conducts this phase (SAPC, 2010). In accordance with Section 2.9 of the GPP guidelines, (SAPC, 2010), it is required that a pharmacist has access to as much medical or clinical record information of patients as needed. This will assist in ensuring that individual patient needs are met.

Phase 2: Preparation and labelling of the prescribed medicine

This includes selecting the correct patient-ready packs/pre-packed medicines, preparation of extemporaneous preparations and labelling these in a clear, legible and indelible manner.

Phase 3: Provision of information and instructions to the patient to ensure the safe and effective use of medicine

This step involves the supply of medication to patients or their agents/caregivers (physical presence preferred) and monitoring patient outcomes.

In accordance with the WHO requirements there is minimum information that must be given to patients by pharmacists (de Vries, Henning, Hogerzeil & Fresle, 2000). This includes the following:

- Effects of the medicine such as why the medicine is needed, what will happen if the medicine dose is missed or taken incorrectly, symptoms that will disappear, those that will not and when the effect of the drug is expected to be noted
- Side effects of the medicine that may occur, how to recognise them, what action to take when they are experienced, their seriousness and for how long they may continue
- Instructions on when and how to take the medicine, how the medicine should be stored, how long the treatment should continue and what must be done with left over medicines
- Warning instructions on for instance, the maximum medicine dosage that can be taken, the times the medicine must be taken and why the medicine course must be completed
- Future consultations for example when to come back or not, the information the medical practitioner may need at the next appointment and in what situations to come for an earlier consultation
- Asking if everything has been understood, if there are any questions and for the most crucial information to be repeated
The above points constitute pharmaceutical care which has been defined as, "the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve or maintain a patient's quality of life" (Wiedenmayer, Summers, Mackie, Gous, Everard & Tromp, 2006).

Additionally, pharmacists can play different roles in a nursing home setting such as educating medical practitioners, nurses and other nursing home staff about medication use, reviewing medication prescribed by medical practitioners and being a part of a multi-disciplinary team. Furthermore, studies have shown that pharmacist participation increases nurses' and medical practitioners' awareness, understanding and insight about medication (Verrue, Petrovic, Mehuys, Remon & Vander Stichele, 2009). A study by Penn, Watermeyer and Ewans (2011) on Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome, reinforced the importance of pharmacists adopting a patient-centred approach in their everyday practice and training to ensure that patients adhere to their treatment. In addition, pharmacists are responsible for educating patients with the aim of producing better treatment outcomes through increased adherence to treatment (Horvat & Kos, 2015; van Hulten, Blom, Mattheusens, Wolters & Bouvy, 2011).

Pharmacists are a fundamental source of patient information as they are ordinarily supposed to be the last point of contact before patients commence treatment. When they partake of good patient counselling, patient's use and knowledge of medicine will be improved. The GPP guidelines (SAPC, 2010) also reinforce the role of pharmacists in providing information to patients so as to improve the communication between patients and health care providers, combat therapy failure that results from a misunderstanding and a lack of information and results in wasteful use of resources which thereby add to costs of care.

The role of the pharmacist is to educate and counsel patients on issues regarding their chronic diseases and chronic disease management. In addition, the pharmacist must provide patients with information on the correct directions for use of their medicine, how their medicine relates to their diseases, what their medicine has been prescribed for, expected side effects and contra indications as well as storage (Palaian, Prabhu & Shankar, 2006).

According to Palaian, Prabhu and Shankar (2006), patient counselling forms a crucial part of pharmaceutical care. In practice, medicines are often used inappropriately by patients due to a lack of patient education and counselling.
2.8.3 Nurses

Already back in 1894, Nightingale stated that across all settings, particularly geriatrics, nurses must do more to prepare for the future. Today, it is still evident that nurses must still make active and influential decisions regarding their patients as innovators who help to shape quality and safety of their patients. The focus of nurses is on disease prevention; provision of chronic care management to an aging, sicker, and more diverse population; and offer end-of-life care that emphasises comfort and compassion. Additionally, nurses play the role of co-ordinators in the provision of holistic care to patients so as to meet them at their point of need. Their role is to aid in teaching patients to become experts in self-management and their diseases as well as assessing patient beliefs and behaviours (Hjelm & Atwine, 2011; Hjelm & Nambozi, 2008).

2.9 SUMMARY

In this chapter important aspects related to health and medicine information seeking behaviour were discussed. HISB and MISB which falls under HISB were defined in detail and the sources of health and medicine information were identified. These sources include medical practitioners, who have been classified as one of the most reliable and favoured sources, information leaflets, internet, pharmacists, nurses, books, newsletters, television, magazines and newspapers as well as friends and family.

Models that describe HISB that have been developed and some of these describe the stages involved in HISB and the factors that may influence information seeking. The Expanded Longo Model places emphasis on patients experiencing improved health outcomes, feeling satisfied and being empowered. This model describes consumers/patients who actively look for information regarding their health or medication or those that passively encounter this information as they go about their daily activities. The model also places emphasis on the ability of patients to comprehend and utilise information obtained, which translates to positive outcomes namely improved satisfaction, locus of control, health outcomes and empowerment.

HISB and MISB and the factors that affect it such as age, health literacy, education and the stage of disease were discussed in detail.

In the next chapter, the methodology of the study will be described in detail.
3.1 INTRODUCTION

This chapter presents the methodology used to investigate the health and medicine information seeking behaviour and needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng. It begins with a description of the study site and the study design followed by a description of the study population and sample selection. The data collection process is discussed in great detail, along with the data capture and analysis process. Measures used to prevent bias to ensure the reliability and validity of the study and the trustworthiness of qualitative data are described. The chapter is concluded with a discussion of the ethical considerations for the study.

3.2 STUDY SITE

The study was carried out at Rotarus Old Age Home, which is situated in Mafikeng in the North West Province of SA. Rotarus Old Age Home is a non-governmental organisation, supported by the Department of Health through the supply of medicines for the residents, by Mafikeng Provincial Hospital pharmacy.

Residents with varying chronic medical conditions, from different cultures and socio-economic backgrounds, are housed at the old age home. The majority of the residents are able bodied and can take care of themselves. At the time of the study, only two of the 34 residents were receiving 100% care. According to the manager of the home, standard practice requires all medication to be handled and administered by the health care workers. The staff complement at the home during the time the study was conducted consisted of a staff nurse as well as two day and two night duty caregivers. A volunteering medical practitioner from a nearby practice consulted with the residents at no charge, when necessary, or by appointment, and provided them with their chronic medication prescriptions.

3.3 STUDY DESIGN

A descriptive study, including quantitative and qualitative data was conducted. Residents’ health and medicine information needs and their health and medicine information seeking behaviour were determined through an interview-administered questionnaire. A semi-
structured interview was conducted with the staff members who provide care to the residents at the home.

3.4 STUDY POPULATION AND SAMPLE

The study population consisted of all the residents, and the staff members who provided care to the residents at Rotarus Old Age Home.

An all-inclusive sample was used, as all the old age home residents and health care workers were approached and invited to participate in the study. The final sample was therefore determined by the number of residents and health care workers at the home during the time of data collection and those who provided consent to participate in the study.

At the time of the study, Rotarus Old Age Home accommodated 34 residents, males and females, from different racial groups (black, white, indian and coloured).

The following inclusion criteria were applied:

- All the residents on chronic medication at Rotarus Old Age Home
- All the health care workers employed at Rotarus Old Age Home
- Participants who were willing to participate and who provided written consent

The following exclusion criteria were applied:

- Residents who were unable to communicate with the data collector, due to their medical condition

Of the 34 residents at Rotarus Old Age Home, 32 met the inclusion criterion, of whom 31 (96.9%) participated in the interviews. One male declined participation, stating his disinterest to assist those (researcher), who were unable to also assist him. All five health care workers participated in the individual, semi-structured, in-depth interviews.
Chapter 3: Methodology

3.5 DATA COLLECTION PROCESS

The data collection process is described in this section.

3.5.1 Data collection period

Data collection took place over a period of three months. Participants were enrolled over four cycles i.e. the old age home was visited 12 times during the study period.

3.5.2 Data collectors and training

Data were collected by the researcher with the assistance of a learner post-basic pharmacist assistant from Mafikeng Provincial Hospital, who was fluent in Setswana and Afrikaans to allow residents to be interviewed in their language of preference. Data collection training was aimed at equipping the data collectors with the required and necessary skills to accurately collect the data and standardising the data collection procedures. Before commencing with data collection, the researcher was trained in data collection techniques by the supervisors with experience in descriptive quantitative and qualitative research that involves structured questionnaires and in-depth interviews. The researcher was trained on how to complete the structured questionnaires and conduct in-depth interviews. The researcher in turn then trained the learner post-basic pharmacist assistant on how to complete the Setswana and Afrikaans structured questionnaires.

During the process of data collection training, the data collection tools were reviewed and practiced question for question. Different ways of interpreting the questions were exhausted until consensus was reached. The aim of this was to improve the data collector’s interview skills and to enhance the ease of understanding of the questions by the participants.

3.5.3 Participant enrolment

All the participants (residents and health care workers) who met the inclusion criteria were approached and had the purpose of the study verbally explained to them. Potential participants were provided with an information leaflet concerning the study (Appendix 1a for the residents and Appendix 1b for the health care workers). The information leaflets were available in English, Afrikaans and Setswana for the residents and in English for the health care workers. On agreement to participate in the study, the participants were requested to provide written informed consent (Appendix 2). The consent forms were available in English, Afrikaans and Setswana.
Confidentiality was maintained throughout the study. The participant's names i.e. the residents, were not written on the structured questionnaires. A unique number was used for each resident to ensure easy identification.

### 3.6 DATA COLLECTION INSTRUMENTS

The data collection instruments used were a structured questionnaire which was administered to the residents, followed by the semi-structured interviews which were conducted with the health care workers using an interview guide.

#### 3.6.1 Structured questionnaire for residents

A structured questionnaire (Appendix 3) was administered during individual interviews which were conducted with the residents in the privacy of their rooms, at the home and in their preferred language of communication. The aim of these interviews was to determine the health and medicine information needs and assess the health and medicine information seeking behaviour of the residents. All English interviews were conducted by the researcher herself while the Setswana and Afrikaans interviews were conducted by the learner post-basic pharmacist assistant. A brief introduction marked the start of the session to ensure that residents understood the purpose of the study and to clarify any outstanding issues. Residents' responses were recorded as accurately as possible on the questionnaire by the data collectors.

#### 3.6.2 Interview guide for health care workers

An interview guide was used by the researcher for individual in-depth interviews with the staff nurse and the other health care workers at the home (Appendix 4). The aim of the in-depth interviews was to gain insight into the health and medicine information seeking behaviour and the health and medicine information needs of the residents, from a health care worker's perspective. Interviews were conducted in a private room and were voice recorded using a digital voice recorder.

The interview guide (Appendix 4) was only available in English, as this was the official language of communication in the work place. The interview guide consisted of open-ended questions, which were followed-up by necessary prompts pertaining to the topic. Participants were allowed to elaborate on topics or discuss additional relevant topics during the interviews. An introduction marked the start of each of the in-depth interviews, participants were informed...
that the in-depth interviews would be recorded and any questions they might have had were answered.

3.7 PILOT STUDY

In order to test the suitability and feasibility of the structured questionnaire, a pilot study was conducted amongst three elderly patients and three staff members at the out-patient department pharmacy of Mafikeng Provincial Hospital prior to the commencement of the actual study. The purpose of the pilot study was to verify the layout and length of the structured questionnaire, the time it would take to complete and to establish whether questions were logical and understandable. The pilot study also provided the data collector an opportunity to practice her interview skills. Based on the results of the pilot study, minor changes were made to some of the questions in the structured questionnaire.

3.8 DATA ENTRY AND ANALYSIS

Quantitative data from the structured questionnaire were entered by the researcher on Microsoft Excel™ spread sheets and verified for accuracy. Categorical data were summarised as frequency counts and percentages. Continuous variables were summarised as means with standard deviations or medians. Data were presented in tabular format or displayed as figures.

Voice recorded data from each in-depth interview were transcribed verbatim and stored as a MS Office Word™ document. Transcripts were checked for accuracy by the researcher and data from these imported into Nvivo11™, a software programme used for qualitative data analysis. Responses were coded into categories and sub-categories by the researcher. Co-coding was done by a second person and the categories and sub-categories identified were compared and discussed with the supervisors until consensus was reached. Connections within and between categories and patterns were identified. Key themes were developed from the categories and these were interpreted overall through a descriptive narrative approach. Residents’ responses were compared with the findings from the in-depth staff interviews for final interpretation of the data.

3.9 RELIABILITY AND VALIDITY

Reliability has been described as the extent to which a tool or instrument used in assessing an entity provides consistent and stable findings whilst validity has been defined as how well a tool or instrument measures what it is designed to measure (Leedy & Ormrod, 2001). The purpose of conducting a pilot study is to improve the reliability during a research study
(Neuman, 2003). Through conducting the pilot study, the researcher became familiar with various processes and materials that were useful in the study. Based on the pilot study results, changes were made to the data collection instruments as was required. Although the pilot study was conducted in a hospital setting different from the actual study setting, where patients interact differently with the medical practitioners, nurses and pharmacists compared to the old age home residents. The aim of the pilot study was to verify the suitability of the data collection instruments and not to obtain reliable information from pilot study participants. The credibility of the results was ensured through discussions of the research process and findings between the researcher and the supervisors who have experience in qualitative data capture and analysis. There are certain threats to external and internal validity, which were considered in this study (Table 3.1).

### Table 3.1: Threats to external and internal validity

<table>
<thead>
<tr>
<th>Threats to external validity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order bias: questions ordered in a manner aimed at influencing outcomes</td>
<td>This was overcome by using standard questionnaires and minimum number of questions.</td>
</tr>
<tr>
<td>Researcher bias: the researcher tampers with results to portray a certain outcomes</td>
<td>This was overcome by interpreting answers as needed and noting responses in their order.</td>
</tr>
<tr>
<td>Population validity: can research study findings be generalised?</td>
<td>Results of this research study cannot be generalised as they were a representation of this specific population. The sample size was small and no comparison will be made to bigger populations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Threats to internal validity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality: loss of participants over time</td>
<td>Participants may have decided to leave the study and the researcher acknowledged that it was inevitable. Participants were thus informed thoroughly of what the study entailed.</td>
</tr>
<tr>
<td>Maturation: change that could occur over time</td>
<td>The participants may have become ill. The researcher acknowledged that this was unavoidable.</td>
</tr>
</tbody>
</table>

#### 3.10 TRUSTWORTHINESS OF THE QUALITATIVE DATA

Nvivo11™ provided an audit trail, which served as evidence that trustworthy interpretations were made (Richards, 2005). In order to increase the dependability of the results, code-recode procedures were used.

Transferability was demonstrated by the possibility of implementation of the recommendations in different old age home settings. This shows that the conclusions drawn from this study can be applied in a different setting.
Confirmability was ensured by ensuring that the researcher did not interfere with the day to day functioning of Rotarus Old Age Home, except the aspects covered in the research (Lincoln & Guba, 1985).

The in-depth interviews with the staff nurse and caregivers provided a platform to discuss the same topics covered in the structured questionnaire or in-depth interviews with the residents, thereby increasing the trustworthiness of the results (triangulation of data). The supervisors checked the categories developed from the qualitative data. Continuous discussion between the researcher and the supervisors, who have experience in qualitative data analysis regarding the categories and sub-categories identified from the code-recode procedures, ensured the credibility (truth value) of the in-depth interviews.

### 3.11 BIAS

All efforts were made by the researcher to minimise bias in this study. Interviewer bias was minimised through the training which the researcher received prior to data collection. The interviewer further ensured to remain neutral during all interviews and to not give any of her own opinions. Questions were non-leading but relevant to the study.

Voice-recording of interviews further minimised interviewer bias, as it was not necessary for the interviewer to manually transcribe the responses during the interview. Manual transcription during the interview process can result in paraphrasing of responses and prevent an objective analysis (Davey Smith & Ebrahim, 2002).

Sampling bias was avoided by including all residents and health care workers in the study.

### 3.12 ETHICAL CONSIDERATIONS

Ethical clearance was obtained from the Sefako Makgatho University Research Ethics Committee (SMUREC/H/50/2015: PG) (see Appendix 5). A letter of intent to conduct the study at Rotarus Old Age Home was submitted to the manager of this facility and signed (Appendix 6). Written informed participant consent was obtained from all participants (Appendix 2). Permission to conduct the pilot study at Mafikeng Provincial Hospital pharmacy was obtained in writing from the hospital CEO (see Appendix 7). All documentation relating to the study is secured and participants’ anonymity and confidentiality are ensured.
3.13 SUMMARY

This chapter described the methodology used for data collection in this study. This was a descriptive study, including quantitative and qualitative data which was conducted into the health and medicine information needs and health and medicine information seeking behaviour of the residents of Rotarus Old Age Home in Mafikeng. A final sample of 31 residents and five health care workers participated in the study.

The quantitative part of the study entailed the administration of a structured questionnaire during private individual interviews which were conducted with the residents. The qualitative part of this study involved the use of an interview guide by the researcher to conduct individual in-depth interviews with the staff nurse and the other health care workers who provide care to the residents at the home in English in a private room.

Quantitative data were entered by the researcher on Microsoft Excel™ spread sheets and verified for accuracy and analysed descriptively. Voice recorded data from the in-depth interviews were transferred from the digital voice recorder to a computer and stored as Windows Media Audio files. Each interview was transcribed verbatim and saved as a MS Office Word™ document and data from these were imported into Nvivo11™. Responses were coded into categories, grouped into themes and compared with the findings from the in-depth staff interviews for final interpretation of the data.

Ethical clearance was obtained from the Sefako Makgatho University Research Ethics Committee (SMUREC) (SMUREC/H/50/2015: PG), prior to commencement of the study. A letter of intent to conduct the study at Rotarus Old Age Home was submitted to the manager of this facility and signed.

Chapter 4 includes the results of the study and discussion thereof, presented in manuscript format.
4.1 INTRODUCTION

The results of this study and discussion thereof are presented in this chapter in manuscript format.

The manuscript will be submitted to the African Health Sciences journal under the title, ‘Health and medicine information seeking behaviour and needs of residents receiving chronic medication at an old age home in South Africa.’ The manuscript is formatted according to the author guidelines which are attached in Appendix 8 and they can be accessed at: https://www.ajol.info/index.php/ahs/about/submissions
4.2 MANUSCRIPT

This section contains the manuscript formatted according to the journal's requirements.

Article title: Health and Medicine Information Seeking Behaviour and Needs of Residents Receiving Chronic Medication at an Old Age Home in South Africa

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**Article type:** Original research

**Keywords:** health and medicine information seeking, behaviour, needs, old age home, chronic medication

**Contributions:**

NR, JCM and EH designed the research strategy. NR collected data under the supervision of JCM and EH, and wrote the first draft of the manuscript. All authors participated in the interpretation of the data, revised the manuscript and approved the final version.

**Summary:**

**Number of words:** 4917 (excluding abstract/references/tables/figures)

**Number of pages:** 26

**Number of figures and tables:** 6
Health and Medicine Information Seeking Behaviour and Needs of Residents Receiving Chronic Medication at an Old Age Home in South Africa

Abstract

**Background** Health and medicine information seeking behaviour research has been reported in younger patients in developed countries. Little is known about this behaviour in old age home patients served by under-resourced health care systems.

**Objectives** The objectives of the study were to establish the health and medicine information seeking behaviour and needs of old age home residents.

**Methods** All inclusive sampling was used to recruit 32 residents and five health care workers into a descriptive study including quantitative and qualitative data. Data were collected with a structured questionnaire and voice recorded in-depth interviews from residents and health care workers respectively. Quantitative data were analysed descriptively. Qualitative data were coded, categories identified and grouped into themes. The two data sets were combined for the overall interpretation of the data.

**Results** The results of this study reflected a passive patient who has accepted and adapted to his health status due to patient related factors. Poor knowledge of information sources, health and medicine related knowledge contributed to a lack of information seeking practices. Residents did not actively seek health and medicine information and challenges they faced in accessing and seeking health and medicine information resulted in poor understanding of medicine taking processes.

**Conclusion** The inability of residents to actively seek health and medicine information is underpinned by their passivity. Unmet information needs were also reported.
Chapter 4: Results and Discussion

Introduction

Older people use more medication compared to younger adults. In addition, they have different needs and preferences for health and medicine information. Knowledge of these differences is essential in the design and delivery of better support services and information. The level of knowledge about, and the perception of, chronic diseases are an important predictor of treatment seeking or non-seeking behaviours exhibited by patients. Patients may not discuss their health problems with their medical practitioners because of a sense of believing that some chronic diseases are a normal consequence of age or because of a lack of understanding of their chronic conditions.

Health education has been associated with increased quality of life. Previous research has shown that patients who are informed, will seek medical interventions such as treatment at early stages, adhere to their prescribed treatment regimens and participate in the process of making decisions regarding their health. Hence, health and medicine information both empower patients in their medicine taking practices and reduce the dependency of patients on health services. This is a patient-centred approach that ensures that patients are engaged and become active participants, who are well-informed and involved in their care; are respected and establish partnerships with medical practitioners.

In patients with chronic diseases, adherence to their treatment is critical for the management of their conditions. Adherence to chronic treatment in developed countries is estimated at an average of 50% whilst in developing countries it is estimated at an even lower percentage.

Life expectancy in South Africa (SA) is on the increase and the population is progressively ageing. The elderly population, aged 60 years and older, has increased from 7.3% of the total SA population in 2001, to 8.1% in 2015, and is expected to double to 15.4% of the country’s total population over the next 35 years.
disability increases with age, hence, an increase in the likelihood of experiencing chronic illness and disability with subsequent greater needs for care.\(^\text{17}\)

Old age homes in SA came into existence due to various social problems such as loneliness, housing and economic problems, a lack of family and other support systems and deteriorating mobility of older persons.\(^\text{18}\) These old age homes are mostly managed and controlled by welfare services. Lay health care workers are utilised to a large extent, and more often than not, medication is dispensed for some patients at hospital pharmacies in their absence, as is the case for most old age home settings.\(^\text{18}\) Role substitution then occurs, for example when nurses and care workers play the part of the medical practitioner or pharmacist in counselling patients on the medication use process.

There has been a reduction in illiteracy amongst the elderly population, across all provinces in SA and subsequently older patients are now keen to know more and participate in the decision making processes related to their health and treatment plans.\(^\text{18}\) Currently, there is abundant data available on the health and medicine information seeking behaviour and needs of patients in various settings, other than old age homes.\(^\text{18}\) There is however a paucity of information regarding the health and medicine information seeking behaviour and needs of residents receiving chronic medication in an old age home setting. The study therefore aimed to investigate the health and medicine information needs and the health and medicine information seeking behaviour exhibited by residents of an old age home, as well as the role of health care providers in residents’ health and medicine information needs. This is important because the results of the study can be used as a baseline for undertaking future studies among old age homes in SA.
Methods

Study design and setting

A descriptive study, including quantitative and qualitative data, was conducted at Rotarus Old Age Home in the Ngaka Modiri Molema District of the North West Province of SA. Rotarus Old Age Home is a non-governmental organisation supported by the Department of Health through the supply of medicines for the residents, by Mafikeng Provincial Hospital pharmacy. Residents with varying controlled chronic medical conditions, from different cultures and socio-economic backgrounds, are housed at the old age home. The majority of the residents are able bodied and can take care of themselves. The languages of communication by residents and health care workers include English, Afrikaans and Setswana. A volunteering medical practitioner from a nearby practice consults with the residents at no charge when necessary or by appointment, and provides them with their chronic medication prescriptions.

Study population and sample

At the time of the study, Rotarus Old Age Home accommodated 34 residents with health care services being delivered by five health care workers. Of the 34 residents at Rotarus Old Age Home, 32 met the inclusion criterion, of whom 31 (96.9%) participated in the interviews. One male declined participation, stating his disinterest to assist those (researcher), who were unable to also assist him. All five health care workers participated in the individual, semi-structured, in-depth interviews.

The only exclusion criterion was residents who were unable to communicate with the data collector due to their medical condition. Only those who met the inclusion criteria, were willing to participate in the study, and who provided written informed consent were included.
Chapter 4: Results and Discussion

Data collection procedures and data collection instruments

Data were collected over a 3-month period, between June and August 2016 by two trained data collectors, a pharmacist and a learner post-basic pharmacist assistant, who were fluent in English, Afrikaans and Setswana. A structured questionnaire was administered in a face-to-face interview with the residents and responses recorded by the data collectors on the questionnaire. The questionnaire was initially developed in English and thereafter translated back-to-back to Afrikaans and Setswana, to accommodate those residents who preferred to be interviewed in their native language. An interview guide was used to conduct individual, semi-structured, in-depth interviews with the health care workers. Interviews were conducted in English and voice recorded using a digital voice recorder.

A pilot study was conducted at a hospital out-patient department pharmacy amongst three elderly patients with characteristics similar to the study population, prior to the commencement of the study. The pilot study aimed to ascertain the feasibility and suitability of the questionnaire for the specific study population. Based on the respondent’s interpretation and understanding of the questions, a few amendments were made to the questionnaire, as a result, enhancing the validity and robustness of the questionnaire.

Data analysis

Quantitative data were captured on Microsoft Excel™ spread sheets, verified for accuracy, and discrepancies rectified prior to data analysis. Categorical data were summarised as frequency counts and percentages, and continuous variables as means with standard deviations or medians. Voice recorded data from the in-depth interviews were transcribed verbatim and verified for accuracy. Transcripts were imported into Nvivo11™ for analysis. Data were coded by the first author and recoded by the second author. Codes were compared and discussed until consensus was reached. Codes were grouped into categories and sub-categories. Patterns and connections within and between categories were identified, and key
themes developed. Residents’ responses were compared with the findings from the in-depth staff interviews for final interpretation of the data.

Results

The findings of the study are structured according to six main themes which emerged from the semi-structured, in-depth interviews with the health care workers and the face-to-face interviews with the residents. The results are supported with verbatim quotations from the health care workers. All quotations were edited for punctuation to enhance readability. Any words that were added to correct defective grammar appear in square brackets. Phrases or words removed from a quotation were replaced by three dots. Health worker’s designations follow in round brackets after the quotations.

Characteristics of study population

Of the 34 residents at Rotarus Old Age Home, 32 met the inclusion criteria, of whom 31 (96.9%) participated in the interviews. One male declined participation, stating his disinterest to assist those (researcher), who were unable to also assist him. All five health care workers participated in the individual, semi-structured, in-depth interviews.

Demographic characteristics of the study population are summarised in Table 1. Amongst the residents, females (22; 71.0%) and whites (18; 58.1%) predominated and the mean age was 76.8 (SD: 9.8) years. All five health care workers were female, with one being a staff nurse.
Table 1: Demographic characteristics of study population

<table>
<thead>
<tr>
<th>Residents (n=31)</th>
<th>Characteristics</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>23 (74.2)</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>8 (25.8)</td>
</tr>
<tr>
<td>Age group (years)</td>
<td>≤70</td>
<td>8 (25.8)</td>
</tr>
<tr>
<td></td>
<td>&gt;70 – ≤79</td>
<td>9 (29.0)</td>
</tr>
<tr>
<td></td>
<td>&gt;80 – ≤89</td>
<td>11 (35.5)</td>
</tr>
<tr>
<td></td>
<td>&gt;90 – ≤99</td>
<td>3 (9.7)</td>
</tr>
<tr>
<td>Ethnic origin</td>
<td>White</td>
<td>18 (58.1)</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>11 (35.5)</td>
</tr>
<tr>
<td></td>
<td>Coloured</td>
<td>1 (3.2)</td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>1 (3.2)</td>
</tr>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>23 (74.2)</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>6 (19.3)</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>2 (6.5)</td>
</tr>
<tr>
<td>Health care workers (n = 5)</td>
<td>Characteristics</td>
<td>Number (%)</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>5 (100)</td>
</tr>
<tr>
<td>Age group (years)</td>
<td>≤40</td>
<td>1 (20)</td>
</tr>
<tr>
<td></td>
<td>&gt;40 – ≤49</td>
<td>2 (40)</td>
</tr>
<tr>
<td></td>
<td>&gt;50 – ≤59</td>
<td>1 (20)</td>
</tr>
<tr>
<td></td>
<td>&gt;60 – ≤69</td>
<td>1 (20)</td>
</tr>
<tr>
<td>Ethnic origin</td>
<td>Black</td>
<td>4 (80)</td>
</tr>
<tr>
<td></td>
<td>Coloured</td>
<td>1 (20)</td>
</tr>
<tr>
<td>Education</td>
<td>Grade 12</td>
<td>4 (80)</td>
</tr>
<tr>
<td></td>
<td>Nursing Diploma</td>
<td>1 (20)</td>
</tr>
<tr>
<td>Position</td>
<td>Caregiver</td>
<td>4 (80)</td>
</tr>
<tr>
<td></td>
<td>Staff nurse</td>
<td>1 (20)</td>
</tr>
</tbody>
</table>
Knowledge of disease states

**Chronic conditions and medicines**

Most residents were able to identify the chronic conditions they suffered from which included hypertension, arthritis, hay fever, heart disease, diabetes (hyper-and hypoglycaemia), ulcers, high cholesterol, thyroid disease, asthma, bronchitis, back problems (orthopaedic), prostate cancer, stomach pain, headache and depression. Figure 1 illustrates that more than 60% of residents experienced some frustration and/or discouragement with their health in the past six months, which may have resulted from a lack of understanding or knowledge of their chronic diseases and medicines.

It was evident from the health care worker interviews that some of the residents lacked knowledge regarding their medicines and the benefit of taking these medicines. This situation was described as follows:

‘... those that do not know, it is not like they are many, just a few of them, the ones whose minds are not so sharp, like the ones that are confused every time and the bedridden [residents]. They are the ones that do not know. They just drink and take the medication just because you are giving them.’ (Caregiver 3)

However it appeared as though this lack of knowledge was not consistent. Some health care workers acknowledged that some residents understood and knew exactly what medication was prescribed for them. This is described below:

‘... if you give them medication, they want to know this tablet is for this, this one is for this. Some [of them] they even know, but even the time that you give them the tablets, [let us] say she used to get five tablets the time that you bring four, she will want to know where the fifth one is. She thinks if she does not get this [fifth] one she is going to die. They think of death, they will want that tablet, until you come and explain where the tablet is.’ (Caregiver 2)
Chapter 4: Results and Discussion

‘Most of them they are clever, they know but when something changes to another tablet, that is when they would like to know why [they are taking] this one now. Sometimes they forget that [they] went to see the [medical practitioner and] maybe he added an antibiotic for a certain period, maybe for two weeks or for a month.’

(Caregiver 1)

![Figure 1: Residents’ frustration by health problems or discouragement by health (n=31)](image)

**Health status**

The results of the resident’s self-rated health status indicated that only a third of the residents rated their health as either good or very good, while the rest considered their health as fair or poor. The exact figures for the ratings were; very good (3; 9.7%), good (8; 25.8%), fair (16; 51.6%) and poor (4; 12.9%).

From the health care worker interviews, it emerged that residents either accepted or adapted to their state of health. Their medicine taking behaviour as reported by the health care workers was also evident of this.
Chapter 4: Results and Discussion

Acceptance of health status

It was apparent that some residents recognised their disease states and made no effort to change or improve them but instead decided to live with them. One of the health care workers described the situation as follows:

‘They give up easily when you know; when you do not want to come out of the situation therefore you accept it to stay like that [in that situation]. It is a challenge [and] it [will] influence him or her to think that I am okay like this therefore I can die like this.’ (Caregiver 3)

Another health care worker highlighted that some residents tolerated their disease and health states as normal consequences of ageing. This caused some residents to decide to play a non-participatory role in issues regarding their health and medicine.

‘Like I said they are old, some of them already have Alzheimer's, they just accept it. Now and then they ask a question and they are answered.’ (Staff nurse)

Adaptation to health status

In order to allow themselves to better survive in an old age home environment with their various chronic diseases, residents made certain adjustments and developed certain behavioural characteristics. This kind of attitude was illustrated by the following narrative from one of the health care workers:

‘Most of the elderly have got high blood pressure, diabetes and they know that these are elderly sicknesses so they just adapted, so that they know about the medication and their illness.’ (Caregiver 3)
Sources of health and medicine information

The health and medicine information seeking of the residents in the past six months is outlined in Table 2.

Table 2: Health and medicine information seeking of residents (n=31)

<table>
<thead>
<tr>
<th>Source of medicine information</th>
<th>Number of times information was sought over the past 6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5-6 times</td>
</tr>
<tr>
<td>Medical practitioner visits</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Emergency room visits</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Hospitalisation</td>
<td>2 (6.5)</td>
</tr>
<tr>
<td>Asked a medical practitioner, nurse, pharmacist or care worker...</td>
<td>1 (3.2)</td>
</tr>
<tr>
<td>Asked a friend, family member or colleague about medicine or health</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

Table 3 shows the type of health or medicine information sought by the residents from the health care workers, friend, family member or colleague. The most common health problem they sought information for was abdominal conditions such as constipation and diarrhoea. Nearly a quarter (7, 22.6%) of the residents indicated that they did not seek any health related information.
Table 3: Type of health and medicine information sought by residents (n=31)

<table>
<thead>
<tr>
<th>Health information sought</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal conditions e.g. low appetite, vomiting, severe pain, diarrhoea, constipation, bloating and gas</td>
<td>8 (25.8)</td>
</tr>
<tr>
<td>None</td>
<td>7 (22.6)</td>
</tr>
<tr>
<td>Mobility e.g. fall, swollen legs, leg injuries and difficulties walking</td>
<td>5 (16.1)</td>
</tr>
<tr>
<td>Review</td>
<td>3 (9.7)</td>
</tr>
<tr>
<td>Urology e.g. bladder, incontinence</td>
<td>2 (6.5)</td>
</tr>
<tr>
<td>Neurological e.g. chronic headache, terrible headache</td>
<td>2 (6.5)</td>
</tr>
<tr>
<td>Allergies e.g. hay fever</td>
<td>1 (3.2)</td>
</tr>
<tr>
<td>Prevention e.g. flu vaccine</td>
<td>1 (3.2)</td>
</tr>
<tr>
<td>Fatigue e.g. tiredness after bypass surgery</td>
<td>1 (3.2)</td>
</tr>
<tr>
<td>Upper Respiratory Tract Infection e.g. chest infection</td>
<td>1 (3.2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medicine information sought (n= 31)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>12 (36.4)</td>
</tr>
<tr>
<td>Medication for pain that works e.g. headache and arthritis</td>
<td>6 (18.2)</td>
</tr>
<tr>
<td>Incorrect medicine or short supply e.g. treatment taken at breakfast short, ulcer and other medication not received for three months</td>
<td>5 (15.2)</td>
</tr>
<tr>
<td>Medication side effects e.g. pain medication causing stomach problems, multivitamin causing legs to swell, side effects from antihypertensive</td>
<td>3 (9.1)</td>
</tr>
<tr>
<td>Medication for stomach problems e.g. diarrhoea, cramps</td>
<td>2 (6.1)</td>
</tr>
<tr>
<td>Medication for cardiovascular diseases e.g. hypertension and cholesterol</td>
<td>2 (6.1)</td>
</tr>
<tr>
<td>Medication not working e.g. antihistamine not working, asthma chronic medication review</td>
<td>2 (6.1)</td>
</tr>
<tr>
<td>Medication for incontinence</td>
<td>1 (3.0)</td>
</tr>
</tbody>
</table>
The most common medicine information they sought was related to medication that works for headaches and arthritis. More than a third (36.4%) of the residents indicated that they never asked anyone about their medicines.

Of the 31 residents interviewed two thirds (21, 67.7%) confirmed that they were able to receive the health or medicine information that they sought, whilst only three of them (9.7%) indicated that they were not able to obtain the health or medicine information that they sought.

From the health worker interviews it was evident that residents engaged in selective information seeking.

‘That is why if the medication is not like it is supposed to be [if the medication changes in colour, form or quantity], they ask you.’ (Caregiver 2)

‘Well some of them are just curious. They want to know why they are taking this and for what it is.’ (Staff nurse)

‘They want to know more about the medication. Like for instance maybe as I said, [they] used to get two tablets and it becomes one tablet, [they] will ask why [they are] getting only one tablet, or maybe today they get three tablets, they will want to know if they are very sick.’ (Caregiver 3)

Another health care worker highlighted the fact that residents generally did not seek health or medicine information (Table 3). This was what she had to say:

‘These are old people, they do not know about looking for information. They just accept it.’ (Staff nurse)
Health and medicine information seeking behaviour

The behaviour exhibited by residents in an attempt to obtain information about their health and medicines when they interact with the medical practitioner, pharmacist, staff nurse and the caregivers is summarised in Table 4.

Table 4: Health and medicine information seeking behaviour of residents

<table>
<thead>
<tr>
<th>Health and medicine information seeking behaviour</th>
<th>Never/ Almost never</th>
<th>Sometimes/ fairly often</th>
<th>Very often/ Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical practitioner visits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare a list of questions to ask the medical practitioner</td>
<td>28 (74.2)</td>
<td>7 (22.6)</td>
<td>1 (3.2)</td>
</tr>
<tr>
<td>Ask questions about medication (knowledge and understanding)</td>
<td>16 (51.6)</td>
<td>13 (41.9)</td>
<td>2 (6.5)</td>
</tr>
<tr>
<td>Discuss any personal problems that may be related to illness</td>
<td>14 (45.2)</td>
<td>13 (41.9)</td>
<td>4 (12.9)</td>
</tr>
<tr>
<td>Pharmacist visits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare a list of questions to ask the pharmacist</td>
<td>28 (90.3)</td>
<td>3 (9.7)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Ask questions about medication (knowledge and understanding)</td>
<td>23 (74.2)</td>
<td>7 (22.6)</td>
<td>1 (3.2)</td>
</tr>
<tr>
<td>Discuss any personal problems that may be related to illness</td>
<td>23 (74.2)</td>
<td>6 (19.4)</td>
<td>2 (6.4)</td>
</tr>
<tr>
<td>Interaction with staff nurse and caregivers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask questions about medication (knowledge and understanding)</td>
<td>14 (45.1)</td>
<td>11 (35.5)</td>
<td>6 (19.3)</td>
</tr>
<tr>
<td>Discuss any personal problems that may be related to illness</td>
<td>12 (38.7)</td>
<td>11 (35.5)</td>
<td>8 (25.8)</td>
</tr>
</tbody>
</table>

Needs of residents

The needs of the residents were established from the pattern of their health and medicine information seeking behaviour (Table 4) and interviews conducted with the staff nurse and the caregivers caring for the residents.
Chapter 4: Results and Discussion

Patience and love

Residents will ask questions and be open about their health and discuss any personal problems related to their illnesses from individuals whom they know will attend to their needs.

‘Working with these old people needs patience and love … you have to have that love of taking care of them.’ (Caregiver 2)

Access to medical care

Residents never/almost never prepare a list of questions to ask the medical practitioner or other health care workers such as a pharmacist when they independently visit the hospital or community pharmacy. This may be a result of these health care professionals being inaccessible.

‘Once every three months a general check-up for all. I do not know if it is allowed but that is how I feel. You know once in every three months a medical practitioner can just come and give each and everybody a check-up. You know not just when you are sick you go and see a medical practitioner.’ (Staff nurse)

Through regular check-ups, residents will be able to ask questions and clarify all the issues they may have about their health and medicine thereby minimising situations such as the one described below:

‘… the [medical practitioner] prescribed a certain medication [multivitamin] that was different to the one she had been taking, she then started complaining and saying the tablet was making her feet swell and she was so sick. Someone then explained to her that no, the tablet was a multivitamin tablet, and later she called me and told me that she now understood that it was not the tablet, but the warm water causing her feet to swell, and that she must only wash them with cold water.’ (Caregiver 1)
Chapter 4: Results and Discussion

**Medicine knowledge**

Residents generally did not go out of their way to seek health and medicine information. Consequences to residents not asking health care workers questions related to their medicines and health will include poor knowledge of one’s health status and medicine.

‘Residents must be taught … that medication may change colour, size and maybe sometimes time [administered] …’ (Caregiver 3)

**Sources of health and medicine information**

In most cases, residents would normally seek information regarding their health and medicine from the medical practitioner (21; 39.6%). Only two (3.8%) residents indicated that they obtained information from the caregivers. None of the residents obtained information from their partners or other sources (Figure 2).

![Figure 2: Percentage of residents seeking health and medicine information from different sources (n=31)](image-url)
According to the health care workers, residents obtain information from a variety of sources based on whom they can trust. Secondary analysis of these sources produced subcategories below:

**Availability of literature**

Residents do not have access to literature about health and medicines for example in the form of books. The staff nurse described this as follows:

‘You know some of them just come and ask the nurse because some cannot read now, they are old and for those who can read, there is no literature for them.’ (Staff nurse)

**Medical practitioner**

Health care workers confirmed that the most trusted source of information for residents was the medical practitioner, staff nurse and caregivers. Two of the caregivers explained this as follows:

‘If the [medical practitioner] says to her you must do this and this, she will stick to that thing and you cannot change it.’ (Caregiver 2)

‘Most of them get information from the [medical practitioner] and from us [staff nurse and caregivers].’ (Caregiver 3)

**Privacy**

Privacy was an important need for residents when it came to seeking health and medicine information. Some residents valued the importance of excluding themselves and information about their health. This perhaps made them feel empowered and allowed them to express themselves selectively to those they were not comfortable with.

‘Two residents that I once took to the [medical practitioner], when we got there, wanted themselves only [in the consulting room].’ (Caregiver 2)
‘Maybe sometimes it is a personal thing to that person that she is feeling a certain way and she cannot go to the manager … Like for instance, maybe it is an older grandfather; and he feels something in his private part, we do not have a male nurse or caregiver here.’ (Caregiver 3)

Trust

Trust was a valuable need for residents when it came to seeking health and medicine information. The majority of the health care workers emphasised that trust is an important determinant of the source of health and medicine information that the residents preferred. One of the caregivers explained it as follows:

‘You know for some it is all about trust. If she trusts you she is going to ask you.’

(Caregiver 1)

Challenges in seeking and accessing health and medicine information

From the interviews with the residents and health care workers, some of the challenges that emerged were language (residents), insufficient time for interaction (residents), communication (health care workers) and lack of understanding (residents). In the category of other challenges, ‘an impatient nurse’ was brought up by one of the residents and one health care worker. Fifteen residents said that they experienced no challenges.

Access to medical practitioner

Health care workers mentioned that the medical practitioner was no readily available to the residents because they consult the medical practitioner only when they are sick, for which an appointment must be sought or for their six monthly reviews. The residents also alluded to insufficient time for interaction during consultation.
Chapter 4: Results and Discussion

‘They just ask us but they know that they do not get all the information … in order to go to the [medical practitioner] you have to make an appointment. So they have to wait for the manager to call to seek for the appointment.’ (Caregiver 3)

Communication barriers

Language barrier was identified by some black residents as a challenge. Health care workers also alluded to this.

‘… some of them we have to think and look at them and tell the [medical practitioner] what the problem is.’ (Caregiver 4)

Secretiveness

Secretiveness was highlighted by health care workers as a challenge that hinders residents when they seek and access health and medicine information. One of the caregivers explained it as follows:

‘… some of our people [black], like one day another lady brought her father here yet the father was supposed to be at the psychiatric hospital and she did not say [anything] to us.’ (Caregiver 4)

Discussion

Although most of the residents were able to identify their chronic conditions and were familiar with what medication they take for these, the results of this study reflect a passive patient who has accepted and adapted to his/her health status due to patient-related and systemic factors. The majority of the residents rated their health as being either fair or poor and experienced frustration or discouragement with their health. This was supported by information obtained from the interviews conducted with the staff nurse and the caregivers where they identified the residents as having accepted their diseases as a normal consequence of age, gave-up easily and asked questions pertaining to their health and medicine now and then.
Many people get involved in health information seeking in order to improve their health. Different people groups have different goals for their search for health information. Health information seeking behaviour (HISB) includes activities such as searching, finding and using information related to diseases and medicine information seeking behaviour (MISB), health threatening factors and health related activities done by a person. MISB falls under the term HISB and as such these two terms go hand in hand with one another. Poor health and medicine information seeking behaviours were reported for the majority of residents. These were characterised by low to no medical practitioner and ER visits as well as hospitalisations; not asking the medical practitioners, nurses, pharmacists or caregivers, friends, family members or colleagues questions regarding their health and medication; not discussing any personal problems related to their illnesses with health care workers or social ties. All these elements describe the ‘non-empowered’ patient who has actively and deliberately made a choice not to seek information but relies on health care workers as the sources of information and devolves all the decision-making responsibility to these health care workers.

There is evidence showing that some form of positive relationship exists between one’s knowledge of personal health and the HISB they will exhibit. Those that seek health or medical related information are more likely to consult medical practitioners for minor problems and participate in more medical examinations than those who do not. From the results of the interviews conducted with both the residents and the health care workers, it was evident that most residents asked questions about their medication and/or health and discussed any personal problems that may be related to their illnesses when they interacted on a daily basis with the staff nurse and caregivers. Another source of health and medicine information identified by the residents was the volunteering medical practitioner and this source was endorsed by the health care workers who highlighted that the residents trusted the medical practitioner above all other sources and had a healthy relationship with him. It was also clear from the health care workers and residents that residents would also ask those individuals within the old age home setting that they trusted, such as the home manager, kitchen
manager, staff nurse and caregivers questions about their health and medication. Overall, most patients made no attempt to seek additional health and medicine information outside the consultation room from other alternative sources and in fact the staff nurse alluded to the fact that there was no literature available for those residents that could still read.

Counselling and educating patients about their medicines empowers informed decisions in medicine-taking practices.\textsuperscript{25,26} The staff nurse and the caregivers acknowledged that whilst the majority of the residents knew their chronic conditions and the medication thereof, they lacked medicines-related knowledge. This opinion emerged when all the health care workers mentioned in the interviews that residents ‘memorised’ the colour, shape, the number of tablets they took and the times they took them. However, when medication changed in colour and strength, residents became confused even after they tried to explain to them that the active ingredients were still the same. Health care workers also highlighted that they were certain that some of the information they gave the residents in response to their questions regarding their health and medication was often inadequate compared to what they could get from the medical practitioner for example as they were only female caregivers and a staff nurse. This led to a discussion by the health care workers where most mentioned that some of the residents’ needs included those of health care whereby they could have regular check-ups by the medical practitioner and not only have access to him when they are sick or going for their six monthly reviews. In addition, the other need of information about their medication was mentioned. Residents ought to be educated about their medication to avoid them being rigid in their expectations; that it can change in colour, shape, strength or time given to avoid confusion.

The ability to access and use health information effectively is critical in empowering patients.\textsuperscript{16,27} Some of the challenges encountered by the residents in seeking and accessing health and medicine information were alluded to by both participating groups. Residents highlighted that there was insufficient time for interaction with the medical practitioner during consultation whilst health care workers mentioned that the residents only saw the medical
practitioner when they were sick and for this they needed to book an appointment and wait. Residents also did not have access to regular check-ups given the volunteering nature of the medical practitioner. Other problems or issues mentioned by both residents and health care workers were a lack of understanding and difficulties communicating with the medical practitioner or communicating their health problems to the medical practitioner during consultation. It is evident that individuals who do not actively seek health and medicine information will face challenges when trying to understand certain medicine instructions.

Limitations of this study include the fact that the results of this study were representative specifically of the health and medicine information seeking behaviour and needs of residents receiving chronic medication at Rotaru Old Age Home in Mafikeng. The study population was of a targeted and restricted nature with the residents taking long-term treatment. These results may not necessarily represent the resident and health care worker population in other old age homes in South Africa.

It is evident that the health care workers (staff nurse and caregivers) were not equipped with sufficient knowledge required by the residents regarding their health, medicine and information needs. Focused interventions implemented by pharmacists in public health are thus vital in ensuring that this gap is closed. Previous studies have shown that pharmacist participation increases nurses’ and medical practitioners’ awareness, understanding and insight about medication.¹ Public health pharmacists can play specific roles in an old age home setting such as conducting in-service training of the staff nurses and caregivers about medication use, reviewing medication prescribed by medical practitioners and being a part of a multi-disciplinary team. Residents can also benefit from monthly pharmacist visits targeted at health education and promotion in order to ensure that residents enjoy the best outcomes from their medicine use experience.
References


Chapter 4: Results and Discussion


Chapter 4: Results and Discussion


26. Raynor DK, Savage I, Knapp P, Henley J. We are the experts: people with asthma talk about their medicine information needs. Patient Education and Counselling 2004; 53: 167–174


Acknowledgements

All the participants are gratefully acknowledged for their willingness to participate. The post basic pharmacist assistant who interviewed residents in Afrikaans and Setswana is acknowledged for her enthusiastic participation and contribution to the study.
4.3 LETTER TO THE EDITOR

The letter to the editor of African Health Sciences which will accompany the manuscript appears below.

The Editor in Chief
African Health Sciences
Makerekere University School of Medicine, College of Health Sciences
P.O. Box 7072, Kampala, Uganda

Dear Sir

Subject: SUBMISSION OF A MANUSCRIPT FOR PUBLICATION

I am pleased to submit an original research article entitled, “Health and Information Seeking Behaviour and Needs of Residents Receiving Chronic Medication at an Old Age Home in South Africa,” for consideration of publication in the African Health Sciences journal.

With the submission of this manuscript I would like to declare that the above-mentioned manuscript has not been published elsewhere, accepted for publication elsewhere or under editorial review for publication elsewhere.
I further declare that all the authors have seen and approved the content of the manuscript and have contributed significantly to the work. The authors have no conflict of interest to disclose and no sponsorship was received for the study.

Thank you for your consideration of our manuscript.

_______________________

Nyaradzo Rumhuma (corresponding author)

Cell: +27-76-315-5991; Email: terryrumhuma@gmail.com

12 January 2018

CC: JC Meyer; E Helberg

4.4 SUMMARY

In this chapter the results of the study and discussion thereof were presented in manuscript format.

Chapter 5 presents the limitations of the study, recommendations and the final conclusion of the study.
5.1 INTRODUCTION

Limitations that were encountered during the course of this study are discussed in this chapter followed by recommendations for this type of study on the health and medicine information seeking behaviour and needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng. In the final section, the final conclusion of the study is provided.

5.2 LIMITATIONS OF THE STUDY

The results of this study were representative specifically of the health and medicine information seeking behaviour and needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng. The study population was of a targeted and restricted nature with the residents taking long-term treatment. These results may not necessarily represent other old age homes in South Africa.

5.3 RECOMMENDATIONS

Further studies should be conducted on the health and medicine information seeking behaviour and needs of old age home residents in South Africa. Pharmacists can play different roles in an old age home setting such as educating medical practitioners, nurses and other nursing home staff about medication use, reviewing medication prescribed by medical practitioners and being a part of a multi-disciplinary team. Public health pharmacists would be essential in conducting in service training for both the residents and health care workers on the health and medicine information needs of the residents which could assist with resolving unmet needs of the residents and facilitate communication between the pharmacy and the old age home. Better communication and collaboration will facilitate better patient care within the multi-disciplinary team handling the needs and lacks of old home residents.

5.4 CONCLUSIONS

Overall, the primary aim of this study was to investigate the health and medicine information needs and the health and medicine information seeking behaviour exhibited by Rotarus Old
Age Home residents. The secondary aim was to determine the role of health care providers at Rotarus Old Age Home in residents’ health and medicine information needs.

The study confirmed that pharmacists in public health can assist in educating the elderly and those who care for them on matters relating to their chronic conditions, chronic medication and health care needs.

This study served to ignite interest and awareness into the health and medicine information needs and the health and medicine information seeking behaviour of the elderly who now constitute a big part of today’s population as they are living longer.
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Dear Participant

**RE: PARTICIPATION IN A RESEARCH PROJECT**

My name is Nyaradzo Rumhuma, a Master's student registered with the Department of Pharmacy, at Sefako Makgatho Health Sciences University. I am conducting a study entitled, ‘Health and medicine information seeking behaviour and needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng.’

The aim of this study will be to investigate the role that can be played by health care professionals in understanding the health and medication information needs as well as the health and medicine information seeking behaviour of older adult patients. In addition, it will also focus on understanding the communication that currently exists between patients and clinicians.

Your participation in this study will entail the completion of questionnaires which will be administered by data collectors in an interview with the residents. A brief introduction will mark the start of the session to ensure that you comprehend the purpose of the study. Your responses will be recorded on the questionnaire. They will remain anonymous and your name will not be recorded. Furthermore, a semi-structured in-depth interview will be conducted with the staff nurse and care workers using an interview guide, by the researcher.

Your participation will be greatly appreciated. You are welcome to contact me on 018 383 2005 or 076 315 5991, if you have any further questions regarding this study.

Thank you in advance for your participation and assistance in this study.

Yours sincerely

Miss Nyaradzo Rumhuma (Researcher)

Date: .................................
Beste Deelnemer

RE: DEELNAME IN 'N NAVORSINGSPROJEK

My naam is Nyaradzo Rumhuma, 'n Meestersgraadse student geregistreerd by die Departement van Farmasie te, Sefako Makgatho Health Sciences University. Ek voer n studie uit getiteld, “Gesondheid en mediese inligting op soek na gedrag en benodighede op inwoners wat chroniese medikasie ontvang te Rotarus Old Age Home in Mafikeng.”

Die doel van die studie is om ondersoek in te stel oor die rol wat deur gesondheidswerkers onderneem kan word om die gesondheids en mediese benodighede sowel as die gesondheid en mediese inligting rondom die gedrag van volwasse pasiënte te verstaan. Bykomend, sal dit focus op die begrip van kommunikasie tussen die pasiënte en klinikus.

U deelname in hierdie studi sal meedoen in 'n semi-strukturele in diepte onderhouds proses wat met die staf verpleegster en haar hulpverleners toegepas sal word in 'n onderhouds gids deur die navorser.

U deelname sal hartlik waarder word. U is welkom om my te kontak op 018 383 2005 of 076 315 5991 indien u verdere vra het met betrekking tot die studie.

Byvoorbaat dankie met u deelname en bystand in dié studie.

Die Uwe

Mej Nyaradzo Rumhuma (Navorser)

Datum: ..................................
Ithuta bukana ya dintlha

Lefapha laKantoro ya melemo
P O Box 218, Medunsa Campus, 0204
Tel: 012 521 4649; fax: 012 521 4751

Go modiredi wa tsa boitekanelo

**RE: GO TSAYA KAROLO MO POROJEKENG YA GO DIRA DIPATLISISO**

Leina la me ke Nyaradzo Rumhuma, ke moithutiwa Masters, ke ikwadisitse le Lefapha la tsa melemo kwa Yunibesithing ya Sefako Makgatho. Kitsiso ya pholo le melemo go batlisisa maitsholo le ditlhokego tsa baagi baba tsayang melemo ya malwetsi a a sa foleng ko legaeng la bagdi la Rotaru ko Mafikeng.

Maikaelelomagolo a patlisiso e, ke go sekaseka karolo e e tshamekiwang ke badiri ba tsa boitekanelo, go thaloganya kitso e e thokagalang mabapi le boitekanelo le melemo. Maitlhomo a patlisiso e, ke go batlisisa maikemisetso a baitsanape ba Tsa botsogo mo go thaloganyeng tsa botsogo le dikitsiso tsa melemo go lebeletswe bagodi. Batlisiso e tla lebelela gape tsa dipuisano tse di dirisiwang mo gompienong magareng ga balwetse le badiredi ba tsa botsogo. Go tsaya karolo ga gago go tilee go thoka gore o arabe dipotso tsothle tse odi boditsweng ke mmatlisisi mo puisanong ya lona.

Dipuisano tsothle di tla simolola ka go go itsise ka ga patlisiso, go netefatsa fa o thaloganya lebaka la patlisiso e. Dikarabo tsa gago di tla kwalwa mo pampitshaneng ya dipotso. Go tsaya karolo ga gago, go tla intumedisa thata. O ka igkologanya le nna mo mogaleng: 018 383 2005 kgotsa 076 315 5991; fa o nale dipotso mabapi le patlisiso.

Ke go lebogela thuso le go tsaya karolo ga gago mo patlisisong e.

Wa gago ka boikobobetso

Mme N Rumhuma (Mmatlisisi)

Letlha: ....................................
Appendices

Appendix 1b: Study information leaflet for health care workers

School of Pharmacy
P O Box 218, Medunsa, 0204
Tel: 012 521 4649; fax: 012 521 4751

Dear Health Care Worker

RE: PARTICIPATION IN A RESEARCH PROJECT

My name is Nyaradzo Rumhuma, a Master’s student registered with the Department of Pharmacy, at Sefako Makgatho Health Sciences University. I am conducting a study entitled, ‘Health and medicine information seeking behaviour and needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng.’

The aim of this study will be to investigate the role that can be played by health care professionals in understanding the health and medication information needs as well as the health and medicine information seeking behaviour of older adult patients. In addition, it will also focus on understanding the communication that currently exists between patients and clinicians.

Your participation in this study will entail a semi-structured in-depth interview which will be conducted with the staff nurse and care workers using an interview guide, by the researcher.

Your participation will be greatly appreciated. You are welcome to contact me on 018 383 2005 or 076 315 5991, if you have any further questions regarding this study.

Thank you in advance for your participation and assistance in this study.

Yours sincerely

Miss Nyaradzo Rumhuma (Researcher)

Date: .................................
Appendices

Appendix 2: Consent forms

SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY  ENGLISH CONSENT FORM

Statement concerning participation in a Research Project.

Name of Project: Health and Medicine information seeking behavior and needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng.

I have read the information on /heard the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurised to participate in any way.

I know that sound recordings will be taken of me. I am aware that this material may be used in scientific publications which will be electronically available throughout the world. I consent to this provided that my name /and hospital number are not revealed.

I understand that participation in this Project is completely voluntary and that I may withdraw from it at any time and without supplying reasons. This will have no influence on the regular treatment that holds for my condition neither will it influence the care that I receive from my regular medical practitioner.

I know that this Project has been approved by the Sefako Makgatho Health Sciences University Research and Ethics Committee. I am fully aware that the results of this Project will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this Project.

..................................................................................................................................................  .................................................................
Name of patient/volunteer  Signature of patient or guardian.
..................................................................................................................................................  ........................................................................
Place.  Date.  Witness

Statement by the Researcher

I provided verbal and/or written information regarding this Project.

I agree to answer any future questions concerning the Project as best as I am able.

I will adhere to the approved protocol.

..................................................................................................................................................  ........................................................................
Name of Researcher  Signature  Date  Place
SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY AFRIKAANS CONSENT FORM

Verklaring mer betrekking tot deelname in 'n Navorsingsprojek

Naam van die Projek: Gesondheid en mediese inligting op soek na gedrag en benodighede op inwoners wat chroniese medikasie ontvang te Rotarus Old Age Home in Mafikeng

Ek het die doelstellings en uitkomstes van die bogenoemde projek gelees/gehoor en het die geleentheid gekry om vrae te vra sowel as genoeg tyd gegeeis om die projek te herdink. Die doelstellings en uitkomstes is duidelik gemaak aan my en ek verstaan dit ten volle. Ek was onder geen druk geplaas om deel te neem nie.

Ek weet dat klankopnames van my geneem gaan word. Ek is bewus daarvan dat die navorsingsmateriaal gebruik kan word in wetenskaplike publikasies wat wereldwyd elektronies beskikbaar gaan wees. Ek is bereid om deel te neem op die voorwaarde dat my identiteit en hospital nommer konfidentsiëel gehou word.

Ek verstaan dat deelname in hierdie projek heeltemal vrywillig is en dat ek enige tyd mag ontrek sonder om 'n geldige rede te gee. Dit sal glad nie my gereelde behandelings van my toestand of die sorg van my doctor beinvloed nie.

Ek weet dat hierdie projek goedgekeur is deur die Sefako Makgatho Health Sciences University Research and Ethics Committee. Ek is bewus dat die resultate van hierdie projek gebruik gaan word vir wetenskaplike redes en dat dit moontlik gepubliseer kan word. Ek is bereid om deel te neem op die voorwaarde dat my identiteit en persoonlike inligting konfidentsiëel gehou word.

Hiermee gee ek toestemming om deel te neem aan hierdie Projek.

Naam van pasiënt/vrywilliger: .......................................................... Handtekening van pasiënt/voog: ..........................................................

Plek: .......................................................... Datum: ..........................................................

Getuie: ........................................................................................................

Verklaringdeur Navorser

Ek het verbal en/of geskrewé inligting gee van hierdie Projek.

Ooreenkomstig is ek bereid om alle vrae te beantwoord tot die beste van my vermoë.

Ek bevestig my deelname aan die goedgekeurdeprotokol.

Naam van Navorser: .......................................................... Handtekening: ..........................................................

Datum: .......................................................... Plek: ..........................................................
Seteitemente se ke sago tsyakarolomo Teko Patlisiso / Porojeke keya Patlisiso*.

Leina la Porojeke: *Health and medicine information seeking behaviour and needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng*

Kebuisitse tshe dimosetsomo / keutwileng maithhomo le maikemisetso a patlisiso e etshintsweng mme kefilwetšhonoya go botsadipotso le go fiwanako e elekanengya go akanya gape kantlha e. Maitlhomo le maikemisetso a patlisiso e a tlhaloganye gasentle. Ga ke a pateledi wakeopekatsela epe go tsyakarolo.

Kethloganya gore go tsyakarolomo Patlisiso / Porojeke e keboithaopo le gore nkaikgogelamoragomo go yonakanakonngwe le ngwekwantlega go neelamabaka. Se ga se kitla se nna le sebabesepekalafonya mya ya go le gale yabowlwetsijokenang le jona e bile ga se kitla se nna le tilhoteletsoepe mothokomelong e ke e amogelangmongakengya mya ya go le gale.

Keaitse gore Teko Patlisiso / Porojeke e re botsweng ke Patlisiso le Molaowa Maitholotsa Khampaseya Sefako Makgatho Health Sciences University Research and Ethics Committee. (SMUREC).

Keaitsekabotlalo gore dipholotsa Patlisiso / Porojeke di tladirisetswamabaka a saentifikasi e bile di kannatsaphasaladiwa. Ke dumalana le seno, fa fela go netefadiwa gore se tlannakhupamarama.

Fano keneela tumalano go tsyakarolo mo Patlisiso / Porojeke e.

.................................................. ..........................................................

Leina ka molwetse/moithaopi Tshaeno yamolwetse kgotsa motlamedi.

.................................................. ..........................................................

Lefelo. Letlha. Paki

**Seteitemente ka Mmatlisisi**

Ketla ka tshedimosetso kamolomo le/kgotsa e ekwadiwengmalebana le Patlisiso / Porojeke e.

Kedumela go araba dipotsodingwe le dingwemonakong e etlangtse di manang la Patlisiso / Porojeke ka moo nkakgonangkateng.

Ke tlatshhego tsaporotokolo e erebotsweng.

.................................................. .................................................. ..................................................

Leina la Mmatlisisi Tshaeno Letlha Lefelo
Appendices

Appendix 3: Structured questionnaire

Structured questionnaire for residents (English)

Resident study identification number: __________  Date: ______________

Data collector: _____________________________

- Greet the resident
- Introduce yourself
- Explain the purpose of the study, establish willingness to participate in the study and give the resident the information leaflet
- Request the resident to sign the informed consent form
- Thank the resident
- Tick the appropriate box or write the necessary information in the space provided

<table>
<thead>
<tr>
<th>Background Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are you currently (please tick one box)</td>
</tr>
<tr>
<td>2. Age</td>
</tr>
<tr>
<td>3. Gender</td>
</tr>
<tr>
<td>4. Ethnic origin (please tick one box)</td>
</tr>
<tr>
<td>5. What chronic condition/s do you have?</td>
</tr>
<tr>
<td>6. How would you rate your health?</td>
</tr>
<tr>
<td>7. How often in the past 6 months did you experience the following:</td>
</tr>
<tr>
<td>Were you frustrated by your health problems?</td>
</tr>
<tr>
<td>Were you discouraged by your health?</td>
</tr>
</tbody>
</table>

**Health and medicine information seeking**

8. In the past 6 months, how often have you visited the medical practitioner? (do not include visits while in the hospital or the hospital emergency department)

9. In the past 6 months, how many times did you go to the hospital emergency department?

10. In the past 6 months how many times were you hospitalised?

11. In the past 6 months how many times have you asked a medical practitioner, nurse, pharmacist or care worker about your medicine or health?
12. In the past 6 months how many times have you asked a friend, family member or colleague about your medicine or health?

13. What kind of health information were you looking for in the above instances?

14. What kind of medicine information were you looking for in the above instances?

15. Were you able to get all the information you were looking for? Please explain your answer.

16. When you visit the medical practitioner, how often do you do the following:

<table>
<thead>
<tr>
<th>Action</th>
<th>Never</th>
<th>Almost</th>
<th>Sometimes</th>
<th>Fairly often</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare a list of questions to ask the medical practitioner?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask questions about what you want to know and understand about your medication?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss any personal problems that may be related to your illness?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. When you visit the pharmacist, how often do you do the following:

<table>
<thead>
<tr>
<th>Action</th>
<th>Never</th>
<th>Almost</th>
<th>Sometimes</th>
<th>Fairly often</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare a list of questions to ask the pharmacist?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask questions about what you want to know and understand about your medication?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss any personal problems that may be related to your illness?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. When you interact with the nurse and care workers at the home, how often do you do the following:

<table>
<thead>
<tr>
<th>Action</th>
<th>Never</th>
<th>Almost</th>
<th>Sometimes</th>
<th>Fairly often</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask questions about what you want to know and understand about your medication?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss any personal problems that may be related to your illness?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
19. From whom do you normally seek information regarding your health and medicine? (please tick)

<table>
<thead>
<tr>
<th>Nurse</th>
<th>Medical practitioner</th>
<th>Pharmacist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family member</td>
<td>Partner</td>
<td>Other (please specify)</td>
</tr>
</tbody>
</table>

20. What challenges do you face when accessing and obtaining health and medicine information?

<table>
<thead>
<tr>
<th>Language barrier</th>
<th>Financial</th>
<th>Insufficient time for interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading barrier</td>
<td>Understanding</td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Gestrukturate Vraelys Vir Inwoners (Afrikaans)

**Inwoner studie identifikasie nommer:** __________  **Datum:** ________________

**Data versamelaar:** ______________________________

- Groet die inwoner
- Stel jouself voor
- Verduidelik die doel van die navorsing, bevestig die bereidwilligheid om deel te neem aan die studie en gee die inwoner die inligtingstuk
- Versoek die inwoner om die toestemmings brief te teken
- Bedank die inwoner
- Merk die toepaslike blokkie of skryf die nodige inligting in die ruimte wat voorsien word

### Agtergond informasie

<table>
<thead>
<tr>
<th></th>
<th>Is u huidiglik?</th>
<th>Getroud</th>
<th>Enkelloop end</th>
<th>Weduwee/ wewenaar</th>
<th>Geskei</th>
<th>Ander</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Ouderdom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Geslag</td>
<td>Blank</td>
<td>Swart</td>
<td>Kleurling</td>
<td>Indiese</td>
<td>Ander</td>
</tr>
<tr>
<td>4.</td>
<td>Etniese oorsprong</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Watse chroniese toestande het u?</td>
<td>Swak</td>
<td>Billike</td>
<td>Goeie</td>
<td>Baie goeie</td>
<td>Uitstekend</td>
</tr>
<tr>
<td>6.</td>
<td>Hoe sal jy jou gesondheid evalueer?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Hoe gereeld het u die volgende ervaar in die afgelope 6 maande?</td>
<td>Nooit</td>
<td>Soms</td>
<td>Gereeld</td>
<td>Meeste van die tyd</td>
<td>Altyd</td>
</tr>
<tr>
<td></td>
<td>Frustrasie met u gesondheids probleme?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Was u teneurgedruk deur u gesondheid?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Gesondheid en mediese agtergrond

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>Hoe gereeld het u die laaste 6 maande ’n geneesheer besoek? (sluit nie besoekte aan hospitale of noodafdelings by hospitale in nie)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Hoeveel keer in die laaste 6 maande was u by ongevalle?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>In die afgelope 6 maande, hoeveel keer was u gehospitaliseer?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>In die afgelope 6 maande, hoeveel keer het u ’n geneesheer, suster, apteekster of gesondheidswerker oor u medisyne of gesondheid gevra?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>In die afgelope 6 maande, hoeveel keer het u ’n vriend, familielid of kollega oor u medisyne of gesondheid gevra?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13. Watter gesondheids inligting wou u bekom in die bogenoemde omstandighede?

14. Watter tipe medisinale inligting wou u bekom in die bogenoemde omstandighede?

15. Het u al die inligting bekom wat u soek? Motiveer asb u antwoord

<table>
<thead>
<tr>
<th>Wanneer u, u geneesheer besoek, hoe gereeld doen u die volgende:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nooit</td>
</tr>
<tr>
<td>Berei 'n lys met vrae voor om u geneesheer te vra?</td>
</tr>
<tr>
<td>Vra vrae oor wat u wil weet en verstaan oor u medikasie?</td>
</tr>
<tr>
<td>Bespreek enige persoonlike probleme wat dalk aanleiding gee tot u siekte?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wanneer u, u apteker besoek, hoe gereeld doen u die volgende:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nooit</td>
</tr>
<tr>
<td>Berei 'n lys met vrae voor om u geneesheer te vra?</td>
</tr>
<tr>
<td>Vra vrae oor wat u wil weet en verstaan oor u medikasie?</td>
</tr>
<tr>
<td>Bespreek enige persoonlike probleme wat dalk aanlyding gee tot u siekte?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wanneer u in kontak tree met die suster en gesondheidswerker by die tehuis, hoe gereeld doen u die volgende:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nooit</td>
</tr>
<tr>
<td>Vra vrae oor wat u wil weet en verstaan oor u medikasie?</td>
</tr>
<tr>
<td>Bespreek enige persoonlike probleme wat dalk aanlyding gee tot u siekte?</td>
</tr>
</tbody>
</table>

19. Van wie bekom u gewoonlik informasie oor u gesondheid en medisyne:

<table>
<thead>
<tr>
<th>Verpleegster</th>
<th>Dokter</th>
<th>Apteker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familielid</td>
<td>Lewensmaat</td>
<td>Ander (spesifiseer asseblief)</td>
</tr>
</tbody>
</table>
20. **Watter uitdaging staar u die gesig waneer u toegang en verkryging wil bekom van u gasondheid en medisinale inligting?**

<table>
<thead>
<tr>
<th>Taalgrens</th>
<th>Finansiële</th>
<th>Onvoldoende tyd vir interaksie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lees versperring</td>
<td>Begrip</td>
<td></td>
</tr>
<tr>
<td>Ander (spesifieer asseblief)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Appendices

### Dipotsotsedirulagantsweng

### Dipotso go baagi (Setswana)

Nomoroyamoagi: ________

Letlia: ________________

Leina la Mmatlisisi: ______________________

- Dumedisamoagi
- Ikitsise
- Tlhalosetsamoagi gore lebaka la patlisiso e o e dirangkeeng, mmotsefa a ka rata go nnakaroloyapatiisiso ono, o be o mofebukanayakitso
- Kopamoagi gore a saenelekwalal ga bontshafa a dumetse go nnakaroloyapatiisiso ono edirang
- Lebogamoagi
- Tshwayalebokoso le letshwanetseng kgotsakalakitsiso e tlhekegangmo go tshwanetseng

### Lemorago la tshedimosetso

<table>
<thead>
<tr>
<th></th>
<th>Nyetse</th>
<th>Nosi</th>
<th>Motholagadi/ Moswagadi</th>
<th>Kgaogane le mokapelo</th>
<th>Tlhadiwe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A o Nyetse</td>
<td>A o Nosi</td>
<td>A o Motholagadi/Moswagadi</td>
<td>A o Kgaogane le mokapelo</td>
<td>A o Tlhadiwe</td>
</tr>
<tr>
<td>2.</td>
<td>Dingwaga</td>
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<tr>
<td>3.</td>
<td>Bong</td>
<td></td>
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</tr>
<tr>
<td>4.</td>
<td>Letso la gagokelefe</td>
<td>Mosweu</td>
<td>Mo Aforika</td>
<td>Morwa</td>
<td>Mo India</td>
</tr>
<tr>
<td>5.</td>
<td>O na le malwetse a feng a asaalafeseng</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6.</td>
<td>O itekanetse go le go kae</td>
<td>Gake a itekanela</td>
<td>Go le go nnye</td>
<td>Keitekanetse</td>
<td>Keitekane tse that</td>
</tr>
<tr>
<td>7.</td>
<td>Kegakae, modikgwedingtse di fitileng o itemogelamatshwao a bolwetse</td>
<td>Lefela</td>
<td>Nakonngwe</td>
<td>Nako e telele</td>
<td>Nako e telele go gais</td>
</tr>
</tbody>
</table>

- A boitekanelo jwagaobo a go tlhorontsha?

- A o kilewakogobegamarapo kaboitekanelo bag ago?

### Kitsokaboitekanelo le melema

<table>
<thead>
<tr>
<th></th>
<th>Mo dikgwedingtsethatarotse di fitileng, o bone ngakagakae? (O sekawaakaretso go yangakeng o le bookelong, kgotsathusopotlakoyaboookelo.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td></td>
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</tbody>
</table>
9. Mo dikgwedingtsethatarotse di fetileng, o newa bona thuso-potlakogakaemobookeleng?

10. O newarobadiwamobookelonggakae, modikgwedingtsethatarotse di fetileng?

11. Modikgwedingtsethatarotse di fetileng, o newabotsangaka, mookikgotsaramelemo/mmamelemogakaekamelemokgotsaboitekanelojwagago?

12. Mo dikgweding di le thatarotse di fetileng, o newabotsatsala, walosikakgotsamodirikwenagakae, kamelemoyagagokgotsakaboitekanelo?

13. O ne o batlisaengkagamelemokgots aboitekanelojwagago go tswamobathongbabaumakiliw eng?

14. Kekitso e feng e o tlhokangkamelemoyagago?

15. A o kgonne go bona thusoyotlhe e ne o e tlhoka? Tlhalosakaraboyagago.

16. Ga o ilekongakeng, kegakae o diradilotse dilateland?

<table>
<thead>
<tr>
<th>Ganke nkedira jalo</th>
<th>Ga se gantsiked irajalo</th>
<th>Nakont ngwe</th>
<th>Gantsi</th>
<th>Gantsi thata</th>
<th>Nakots otlhe</th>
</tr>
</thead>
<tbody>
<tr>
<td>A o baakanyadipotsotse o tla di botsangngaka</td>
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<tr>
<td>A o botsadipotsoka se o batlang go se itse le go thlaloganyamabapi le melemoyagago</td>
<td></td>
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<tr>
<td>A o sekasekamathata a o itemogelang one kabolwetsejwagago</td>
<td></td>
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</tr>
</tbody>
</table>

17. Ga o bona mmamelemo/rramelemo, kegakae o diratse di kailwengfatlase?

<table>
<thead>
<tr>
<th>Ganke nkedira jalo</th>
<th>Ga se gantsiked irajalo</th>
<th>Nakont ngwe</th>
<th>Gantsi</th>
<th>Gantsi thata</th>
<th>Nakots otlhe</th>
</tr>
</thead>
<tbody>
<tr>
<td>A obaakanyadipotsotse o tla di botsangmmamelemo/ rramelemo</td>
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<tr>
<td>A o botsadipotsoka se o sa se thhaloganyengmabapi le melemoyagago</td>
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</tr>
<tr>
<td>18.</td>
<td>Ga o bua le mookikgotsamotlhokomedikwalegaeng, kegakae o diratse di latelang?</td>
<td></td>
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<tr>
<td></td>
<td>Ganke kediraj alo</td>
<td>Ga se gantsiked irajalo</td>
<td>Nakongwe</td>
<td>Gantsi</td>
<td>Gantsi thata</td>
</tr>
<tr>
<td>A o botsadipotsoka se o sa se thaloganyengmabapi le melemoyagago</td>
<td></td>
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<tr>
<td>A o sekasekamathata a o itemogelang one kobolwetsejwagago</td>
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</table>

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<thead>
<tr>
<th>19.</th>
<th>O bona kaekitsokaboitekanelokgotsamelemoyagago?</th>
</tr>
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<tbody>
<tr>
<td>Mooki</td>
<td>Ngaka</td>
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<tr>
<td>Molekane</td>
<td>Walosika</td>
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</tbody>
</table>

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<thead>
<tr>
<th>20.</th>
<th>Kemathata a fenga o itemogelang one fa o leka go batlisisakitsomabapi le boitekanelokgotsamelemoyagago?</th>
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</thead>
<tbody>
<tr>
<td>Puotsa o sa di thaloganyeng</td>
<td>Madi</td>
</tr>
<tr>
<td>Go thokanako e elekaneng go bua le ngaka, rramelemo/mmmele mokgotsamoeki.</td>
<td>Understanding</td>
</tr>
<tr>
<td>Tse dingwe</td>
<td></td>
</tr>
</tbody>
</table>

Appendices

Appendix 4: Health care worker interview guide

A. Demographic data of the health care workers

<table>
<thead>
<tr>
<th>Respondent number</th>
<th>Interview date</th>
<th>Age</th>
<th>Gender</th>
<th>Race</th>
<th>Highest educational qualification</th>
</tr>
</thead>
<tbody>
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</table>

B. Introduction to the interview

- Welcome the participant to the interview and thank him/her for his/her willingness to participate.

Thank you very much for your willingness to be interviewed. My name is Nyaradzo Rumhuma and I am a Master's degree student registered with the Department of Pharmacy, Sefako Makgatho Health Sciences University. The topic of the study is "Health and medicine information seeking behaviour, health and medicine needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng."

- Explain the purpose of the study and obtain written consent to take part in the study.

Would you mind if your responses were recorded as it would be difficult to write down all of them? All your personal details e.g. name, gender will be kept confidential.

- Encourage the participant to feel free and comfortable, as there is no right or wrong answer.
Appendices

- Make use of prompts and rephrase questions in order for additional information to be obtained. Examples of probes to be used during the interview to ensure that the interviewee’s views are obtained on all aspects:
  - “Please explain your answer”
  - “What do you mean?’
  - “Anything else?”
  - “Are you saying/ did you say/ did you mean?”
  - “Would you expand on that/ explain it in more detail?’
  - Start the recorder to record the interview.

C. Interview questions

- Describe in detail your experience within your work environment.
- Describe in detail your understanding of why the residents partake in medicine and health information seeking.
- Tell me about the experience you have had with residents regarding their medication and its use.
- From your interaction with the residents, why do they seek health and medication information?
- From your interaction with the residents, how and from whom do you perceive they obtain health and medication information?
- Describe in detail the interaction between the residents and the volunteering medical practitioner regarding their health and medication.
- From your experience, do you feel the residents are adequately equipped with knowledge regarding their medication and chronic conditions?
- What challenges do you perceive the residents face accessing and processing medicine and health information?
- What do you perceive are the implications of these challenges in accessing and processing medicine and health information? For instance on their medicine taking behaviour?
- From your experience what are the unmet information needs of the residents regarding their general health and medicine?
Appendix 5: SMUREC clearance certificate

Sefako Makgatho Health Sciences University
Research & Postgraduate Studies Directorate
Sefako Makgatho University Research Ethics Committee
(SMUREC)

Motlolegi Street, Ga-Rankuwa 0208
Tel: (012) 521 5617/3698 | fax: (012) 521 3749
Email: lorato.phiri@smu.ac.za
P.O. Box 163 Medunsa 0204

APPROVAL NOTICE - NEW APPLICATION

05 March 2015
Ms N Rumhuma
Department of Pharmacy
P.O Box 218
MEDUNSA, 0204

MEETING: 02/2015
SMUREC Ethics Reference Number: SMUREC/H50/2015: PG

The New Application received on 18 February 2015, was reviewed by members of Sefako Makgatho University Research Ethics Committee on 05 March 2015 and was approved on 05 March 2015.

Title: Health and medicine information seeking behavior and needs of residents receiving chronic medication at Rotarua Old Age Home in Mafikeng
Researcher: Ms N Rumhuma
Supervisor: Dr JC Meyer
Co-supervisor: Ms EA Helberg
Department: Pharmacy
Hospital Superintendent: Mr Marcelino (Rotarua Old Age Home)
School: Health Care Sciences
Degree: Master of Pharmacy

Please note the following information about your approved research protocol:

Protocol Approval Period: 05 March 2015 – 05 March 2016

Please remember to use your protocol number (SMUREC/H50/2015: PG) on any documents or correspondance with the REC concerning your research protocol. Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modification, or monitor the conduct of your research and the consent process.

After Ethical Review: Please note a template of the progress report is obtainable in the Research Office and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit. Translation of the consent document in the language applicable to the study participants should be submitted.

International Organisation (IORG0004319), Institutional Review Board (IRB00005122), Federal Wide Assurance (FWA00009419)
Expiry date: 11 October 2016 and NHREC No: REC 210408-003

Sincerely

PROF DA GUNBANJO
CHAIRPERSON SMUREC

Members of the Interim Council:
Prof O Shisana (Chairperson), Ms SA Mchunu, Mr P Slack, Dr N Simelela, Prof AM Segone, Dr E van Staden

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Appendix 6: Letter to Rotarus Old Age Home management

Department of Pharmacy
P O Box 218, Medunsa Campus, 0204
Tel: 012 521 3699; fax 012 521 3992

Date

RE: REQUEST TO CONDUCT RESEARCH

Dear Mr Marcelino

I am a Master’s degree student registered with the Department of Pharmacy, Sefako Makgatho Health Sciences University writing to seek permission to conduct my research at your facility. The study is entitled, ‘Health and medicine information seeking behaviour and needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng.’ This research study is being conducted under the supervision of Prof. J.C. Meyer and Mrs. E. Helberg from Sefako Makgatho Health Sciences University. In order for the study to go forward, it must first be approved by the Research and Ethics Committee of Sefako Makgatho Health Sciences University so as to make sure that the rights of the participants will be protected and that the research study is conducted in an ethical and professional manner.

The research study’s aim will be to establish the health and medicine information seeking behaviour of residents on chronic medication as well as the role that health care providers can play in the information needs of these residents of Rotarus Old Age Home. Participants’ consent will be obtained in writing before inclusion in the study. Participant confidentiality will be maintained throughout the research study. The protocol for the research study will be made available to you as and when requested.

Kind regards

Miss Nyaradzo Rumhuma (Researcher)

I ........................................hereby give consent for this study to be conducted at Rotarus Old Age Home.

........................................  ........................................

Mr. Marcelino  Miss. N. Rumhuma
Rotarus Old Age Home manager  (Researcher)
Appendix 7: Letter to Mafikeng Provincial Hospital’s CEO

Department of Pharmacy
P O Box 218, Medunsa Campus, 0204
Tel: 012 521 3699; fax 012 521 3992

Date

RE: REQUEST TO CONDUCT PILOT STUDY

To the CEO, Mafikeng Provincial Hospital

I am a Master’s student registered with the Department of Pharmacy, Sefako Makgatho Health Sciences University. The study entitled, ‘Health and medicine information seeking behaviour and needs of residents receiving chronic medication at Rotarus Old Age Home in Mafikeng.’ Part of the requirement of my Master’s degree in Pharmacy Public Health and Management is that a research study must be conducted. This research study is being conducted under the supervision of Prof. J.C. Meyer and Mrs. E. Helberg from Sefako Makgatho Health Sciences University.

The research study’s aim will be to establish the health and medicine information seeking behaviour of residents on chronic medication as well as the role that health care providers can play in the information needs of these residents of Rotarus Old Age Home. Once ethical clearance is obtained, a pilot study must be conducted before commencing the research study. I would thus like to seek permission to conduct the pilot study on adult chronic medication patients at your hospital (pharmacy). This pilot study will be conducted in an ethical and professional manner and patient confidentiality will be maintained at all times.

Your consent regarding this matter would be greatly appreciated.

Kind regards

Miss Nyaradzo Rumhuma (Researcher)

I .......................................................................................................................... hereby give consent for this study’s pilot study to be conducted at Mafikeng Provincial Hospital.

..............................................................................................................

CEO Miss. N. Rumhuma
(Mafikeng Provincial Hospital) (Researcher)
Appendices

Appendix 8: African Health Sciences Journal Author Guidelines

Author Guidelines

This journal does not accept author submission via the AJOL website. Please follow the author guidelines below.

Instructions to authors

Introduction

African Health Sciences is an internationally refereed, free access, journal publishing original articles on research, clinical practice, public health, policy, planning, implementation and evaluation, in the health and related sciences relevant to Africa and the tropics. It is published 4 times a year in March, June, September and December. African Health Sciences is indexed in MEDLINE/PUBMED.

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The manuscript should be submitted online on Manuscript Central on the following website:

http://mc.manuscriptcentral.com/mums-ahs

Any enquiries should be sent by email to:

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African Health Sciences,
Makerere University School of Medicine, College of Health Sciences
P. O. Box 7072, Kampala, Uganda.
Fax: +256-41-530022,
Email: pic@infocom.co.ug,
..........kabaleimc@gmail.com;
..........h_nambooze@yahoo.com;
..........kedgart@gmail.com;
..........editor@africanhealthsciences.com

Tel +256-41-530020/1; +256 772 494120

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• Letters to the Editor and Book reviews should be less than 1500 words and do not need an abstract.

Formatting

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• Research articles should include the following, each beginning on a fresh page: title, abstract, introduction, methods, results, discussion, references, acknowledgements, tables and figures.

Title page
This should contain an informative title, the first name, initial and last name of each author. The page should also include the name of institution(s) and departments to which the work should be attributed, and the name, address, email, fax, and telephone numbers (s) of the author responsible for correspondence about the manuscript. We also require the email addresses of ALL authors.

Abstract
The abstract must not exceed 250 words and must be structured as follows: Background, Objectives, Methods, Results, and Conclusions.

Acknowledgements
This should be on a separate page and not be more than ten printed lines (about 500 bytes).

Figures and Tables and scientific measurements
• Figures and tables should be of reproducible quality, include comprehensive captions and not duplicate material presented in the text. All illustrations (tables and figures) must be cited consecutively in the text. Avoid internal vertical or horizontal lines in tables.
• Any figures should be professionally designed and submitted as original copies.

All scientific measurements except blood pressure (mm Hg) should be expressed in SI units.
REFERENCES: (Vancouver style).

- References should be numbered in the order in which they appear in the text and listed in order in the reference list (Vancouver style).
- The references must be in the following form: author (s), title of journal article, full name or Index Medicus or Medline abbreviation of journal, year of publication, volume number, and page numbers in full.

When there are six or fewer authors, list all of them. If there are seven or more, then list the first six followed by et al. Examples of references:

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Book reference:

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1. Covering (submission) letter
2. Corresponding author's name, complete address, degrees, institution, title, telephone number, fax number, and e-mail.
Appendices

3. Complete address, degrees, institution, title, telephone number, fax number, and e-mail for each author
4. Manuscript in Microsoft Word
5. Conflict of interest disclosure
6. Proposed list of potential reviewers

7. Submit your manuscripts on:

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1. The submission has not been previously published, nor is it before another journal for consideration (or an explanation has been provided in Comments to the Editor).
2. The submission file is in Microsoft Word, RTF, or WordPerfect document file format.
3. Where available, URLs for the references have been provided.
4. The text is single-spaced; uses a 12-point font; employs italics, rather than underlining (except with URL addresses); and all illustrations, figures, and tables are placed within the text at the appropriate points, rather than at the end.
5. The text adheres to the stylistic and bibliographic requirements outlined in the Author Guidelines, which is found in About the Journal.
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