

**HEALTH LITERACY OF SESOTHO-SPEAKING PATIENTS  
DIAGNOSED WITH CHRONIC CONDITIONS: SETSOTO, FREE  
STATE PROVINCE**

By

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## DECLARATION

I, Mita Sarah Mofokeng, declare that the Master's degree research dissertation or interrelated, publishable manuscripts/published articles, or coursework Master's degree mini-dissertation that I herewith submit for the Master of Nursing from the University of the Free State is my own, independent work, and that I have not previously submitted it for a qualification at another institution of higher education.



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MS Mofokeng

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## SUMMARY

Health literacy plays an integral role in ensuring positive patient outcomes, because it makes the processing and understanding of health information possible. Assessing the health literacy of patients diagnosed with chronic conditions in their home language is essential for improving their health outcomes. This study was conducted in Setsoto, Free State province, and the Sesotho Health Literacy Test (SHLT) was used to measure the health literacy level of Sesotho home-language speakers.

The study aimed to assess the health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free-State province. The objective was to establish the associations between the socio-demographics of chronic patients attending public health facilities in Setsoto subdistrict, and items on the SHLT that reflect appraisal and understanding.

The research design applied in the study was a quantitative descriptive cross-sectional design. The population consisted of patients diagnosed with a chronic condition and attending a primary healthcare (PHC) facility (n=12) in the Setsoto subdistrict. The respondents (n=264) were conveniently sampled from the PHC facilities in the subdistrict. Data was collected using a structured questionnaire, namely the 10-item SHLT questionnaire. Descriptive statistics, namely frequencies and percentages for categorical data, and medians and percentiles for numerical data, were calculated per group. The groups were compared by means of the Chi-square test for categorical data and Kruskal-Wallis test for numerical data.

The researcher studied 264 respondents from 12 public health facilities, of whom more were female respondents (82.6%) than were male respondents (17.4%). The median age of the respondents was 43 years. The majority (56.8%) of the respondents indicated Grades 9–12 as the highest grade passed, and 53.4% of the respondents indicated they had a problem reading due to poor eyesight. Human immunodeficiency virus (HIV) was the most common chronic condition (62.1%) the respondents had been diagnosed with.

The findings indicate that 35,6% (n=94) of respondents could be classified as possessing a high health literacy level; 43.6% (n=115) achieved moderate health literacy scores, and 20.8% (n=55) had low health literacy scores on the SHLT.

No association ( $p=0.143$ ) was found between health literacy level and gender distribution, or between health literacy levels and the respondents' inability to read due to poor eyesight ( $p=0.209$ ). Associations ( $p=0.001$ ) were established between a high health literacy level and age; a high health literacy level and respondents with Grades 9–12 ( $p=0.001$ ), and between a high health literacy level and items in the SHLT reflecting appraisal and understanding of health information.

The implementation of the SHLT and developing a guideline for PHC facilities will assist healthcare providers to develop a comprehensive treatment management plan for patients diagnosed with chronic conditions. This will also assist the Free State Department of Health to alleviate pressure on the healthcare system.

**Key terms:**

chronic conditions; health literacy; primary healthcare, Sesotho-speaking patients

## CLARIFICATION AND OPERATIONALISING OF CONCEPTS

*Assessment:* Assessment refers to setting a standard and measuring accordingly (Bruce & Klopper, 2017:371). In this study, assessment refers to measuring Sesotho home-language speaking patients' health literacy levels, using the Sesotho health literacy test (SHLT).

*Chronic patient:* A chronic patient is a person diagnosed with a long-lasting condition that can be improved by recurrent monitoring, support and treatment (Yigitalp, Surucu, Gumus *et al.*, 2017:1168). In this study, chronic patients were patients diagnosed with any of the following lasting conditions, namely, cardiovascular, respiratory, gastrointestinal, immunologic, skin, endocrine, reproductive, musculoskeletal, urological, neurological, and mental health conditions who require treatment and making frequent visits to a public health facility in order to maintain good health.

*Healthcare provider:* A healthcare provider is referred to as a lawfully licensed and trained professional who provides healthcare, in terms of the Allied Health Professions Act No. 63 of 1982, Health Professions Act No. 56 of 1974, Nursing Act No. 50 of 1978, Pharmacy Act No. 53 of 1974 and Dental Technicians Act No. 19 of 1979 (Republic of South Africa, 2004:10). In this study, a healthcare provider will refer to as all categories of nurses registered at the South African Nursing Council and providing healthcare at a primary healthcare (PHC) facility.

*Health literacy:* According to Dodson, Good and Osborne (2015: online),

*Health literacy refers to the personal characteristics and social resources needed for individuals and communities to access, understand, appraise and use information and services to make decisions about health. Health literacy includes the capacity to communicate, assert and enact these decisions.*

In this study, health literacy refers to a patients' ability to access, understand, appraise and apply health information to everyday life decisions, and it will be measured using the SHLT.

*Health literacy test:* A health literacy test assesses a patient's capability to process and understand health information (Aldoory, 2017:212; Apolinario, Mansur, Carthery-Goulart *et al.*, 2014:2; Jansen, Rademakers, Waverijn *et al.*, 2018:2; Mogobe, Shaibu, Matshidiso *et al.*, 2016:1; Niemelä, Ek, Eriksson-Backa *et al.*, 2012:126; Wasserman, Wright & Maja, 2010a:78). In this study, health literacy will be assessed by using the SHLT.

*Primary healthcare:* Primary healthcare refers to care provided at centres, and that benefits the community by providing preventive and curative services (Alhassan, Nketiah-Amponsah *et al.*, 2015:2; Heller, Heller & Pattison, 2003:64; Republic of South Africa 2017:11). In this study, a primary healthcare facility refers to all the public healthcare clinics and community healthcare centres rendering healthcare to patients with chronic conditions.

*Sesotho-speaking:* Sesotho is a language spoken by 64,2% of people in the Free State (South Africa Gateway, 2018: online). In this study, Sesotho-speaking patient is a patient whose home language is Sesotho.

## CONTEXT OF THE STUDY



**Figure 1: Map of Thabo Mofutsanyane, a district of the Free State province, South Africa**

Source: Municipalities of South Africa (2019: online)

Figure 1 is a map showing the six subdistricts that make up the Thabo Mofutsanyane district of the Free State province of South Africa (Municipalities of South Africa, 2019: online). Setsoto is one of six subdistricts and comprises of four towns: Senekal has three public healthcare facilities with an estimated population of 25542 residents, Marquard has three with an estimated population of 15502 residents, Clocolan has two public healthcare



facilities with an estimated population of 16253 and Ficksburg has four public healthcare facilities with an estimated population of 41248 residents.

### **Background information related to the development of Sesotho Health Literacy Test**

The SHLT was developed for Sesotho home-language patients who attend public healthcare facilities in the Free State. The 10-item SHLT originates from the developed 40-item SHLT (Reid, Nel & Janse van Rensburg-Bonthuyzen, 2018):

*Item response analysis was done to calibrate the scale, where on the basis of the estimated discrimination and difficulty, 30 of the 40 items appeared to provide redundant information in terms of discrimination and difficulty. Two factors, declaring 60.3% of the variance, were identified by means of factor analysis namely: Appraising information and Understanding information. The ten-item scale indicated good internal reliability with a Cronbach alpha value of 0.77 (Reid & Nel, in press).*

It is this 10-item SHLT that was used in this study.

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

DoE	Department of Education
DoH	Department of Health
HCP	Healthcare provider
HIV	Human immunodeficiency virus
HSREC	Health Science Research Ethics Committee
NVS	Newest Vital Test Short
PHC	Primary healthcare
REALM	Rapid Estimate of Adult Literacy in Medicine
SHLT	Sesotho Health Literacy Test
TB	Tuberculosis
WHO	World Health Organization

# CHAPTER 1: OVERVIEW OF THE STUDY

## 1.1 INTRODUCTION

Treating chronic conditions weighs heavily on the world's healthcare systems (Liddy, Johnston, Irvin *et al.*, 2013:539) – this is also the case in South Africa. According to a report released by Statistics SA (2016:29) there has been an increase in deaths from communicable and non-communicable disorders, which, per implication, include chronic conditions. There has also been a noted increase in hospitalisations, frequent visits to emergency rooms, and a high mortality rate of patients diagnosed with chronic conditions (Parker, Stocks, Nutbeam *et al.*, 2018:2). Between the years 1997 and 2016, the mortality rate of non-communicable conditions (chronic respiratory and cardiovascular diseases and diabetes) rose by 4,1% in South Africa (Statistics SA, 2016:29).

Various models and assessment tools have, consequently, been designed on an international platform and used to improve health outcomes of patients diagnosed with chronic conditions. The integrated care model (Woods, 2001) has had results in terms of improving these patients' health outcomes. This success was achieved by dispatching a multidisciplinary team of clinicians, hypertension coordinators and educators to selected rural areas in China, where hypertension treatment and continuous blood pressure monitoring was conducted (Zhang, Tang, Zhang *et al.*, 2017:4). The results showed an improvement in the patients' quality of life, a decrease in blood pressure and fewer hospitalisations (Zhang *et al.*, 2017:8).

Another model that is community-based is that of the Community Antiretroviral Treatment Group, known as the CAG model. This model also requires a multidisciplinary team that consists of counsellors and clinicians. Health monitoring and treatment is done in communities in Mozambique, and has led to an improvement in adherence, self-efficiency and communication between the patient and the healthcare provider (HCP) (Rasschaert, Decroo, Remartinez *et al.*, 2014:13). Researchers suggest that, by utilising assessment tools and measuring patients' health literacy levels, the patients' quality of life and health

outcomes will improve (Frosch & Elwyn, 2014:11; Nachegea, Morroni, Zuniga *et al.*, 2012:132).

Health literacy is a neglected component of the management of patients diagnosed with chronic conditions. Health literacy refers to a patients' ability to access, understand, appraise and apply health information to everyday life decisions (Apolinario *et al.*, 2014:1; Mogobe *et al.*, 2016;1 Niemelä *et al.*, 2012:126).

Health literacy has proven to be a challenge for HCPs, as they fail to recognise or have an interest in probing the patient regarding this matter (Dennison, Himmelfarb & Hughes, 2011:177). This failure is detrimental to the patients' health outcomes and widens the communication gap between the patient and the HCP (Wasserman, Wright & Maja, 2010b:93).

Patients with low health literacy may feel embarrassed or ashamed to voice misunderstandings with regard to health education or instructions communicated by the HCP (Dennison *et al.*, 2011:177). Frosch and Elwyn (2014:11) believe that determining the health literacy level of patients with chronic conditions will improve their health outcomes, decrease mortality rates and reduce the financial burden on the healthcare system.

In a South African context, patients diagnosed with chronic conditions are mostly consulted by HCPs at a primary healthcare (PHC) facility, where the majority (84%) of patients receive preventive and curative care (Liddy *et al.*, 2013:539; Republic of South Africa, 2017:11). The inability of HCPs to recognise, or the absence of an assessment instrument to help determine patients' health literacy levels, prevents HCPs from providing proper management to improve patients' health outcomes.

## **1.2 PROBLEM STATEMENT**

Using a health literacy assessment instrument may enable HCPs to identify patients with poor health literacy. This may help HCPs to improve their management approach and patient health outcomes (Mogobe *et al.*, 2016:8). Health literacy assessment should be conducted in the language of the particular person being assessed (Dowse, 2016:4).

According to Statistics SA (2016: online), the Free State province houses about 71.9% of Sesotho home-language speaking patients. Krige and Reid (2017:114) allude to the importance of assessing the health literacy of this population.

In an attempt to improve health outcomes, various health literacy measuring instruments have been developed to determine patients' health literacy. These instruments include the Rapid Estimate of Adult Literacy in Medicine Revised (REALM-R); Newest Vital Test (NVS) and the Short Test of Functional Health Literacy in Adults (S-TOFHLA) (Apolinario *et al.*, 2014:3; Curtis, Revelle, Waite *et al.*, 2015:189; Dowse, 2016:4; Kang, Lee, Paasche-Orlow *et al.*, 2014:255). These tests were originally compiled in English, and one of the challenges that was identified is that translating the tests made it difficult to maintain validity and reliability of the results (Dowse, 2016:4).

When creating a health literacy measuring instrument, certain factors need to be noted, for instance, culture and language, as translating a health literacy test from one language to another is not always successful (Dowse, 2016:4; Kang *et al.*, 2014:255). Fortunately, a validated health literacy test for Sesotho home-language speakers has been developed, the SHLT (Reid *et al.*, 2018; Reid, Nel & Janse van Rensburg-Bonthuysen, 2019:2; Reid & Nel, 2021: online). Assessing a patients' health literacy in the Free State using the SHLT will help identify patients' health literacy level. Knowing patients' health literacy level could empower patients and equip HCPs to manage patients according to their health literacy level, and thereby improve their health outcomes.

### **1.3 RESEARCH QUESTION**

What is the health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free State province?

### **1.4 AIM**

The aim of the study was to assess the health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free-State province.

## **1.5 OBJECTIVES**

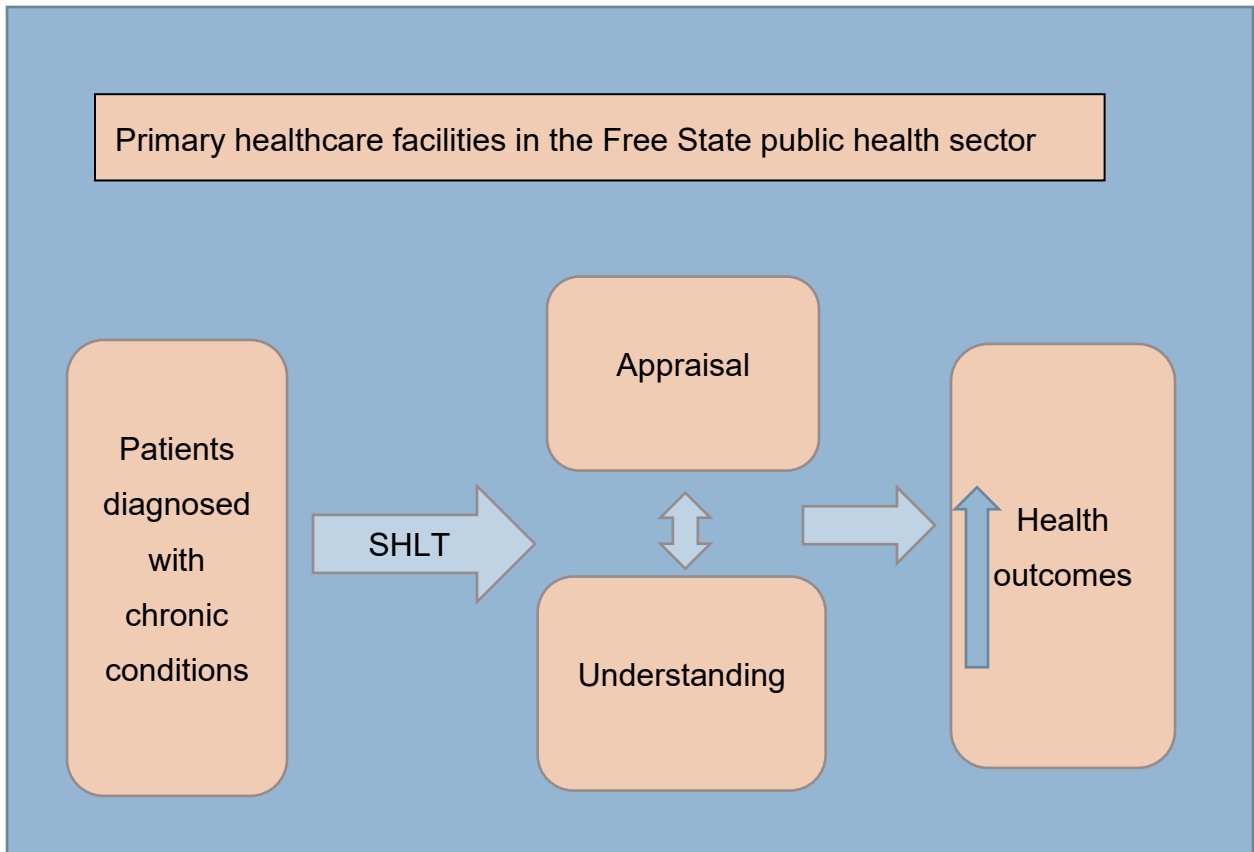
The objective of the study was to establish associations between demographic factors of chronic patients attending public health facilities in Setsoto subdistrict, and items of the SHLT that reflect appraisal and understanding.

## **1.6 CONCEPTUAL FRAMEWORK**

Polit and Beck (2017:119) define a conceptual framework as a description of the relationship between concepts, and a systematic explanation of the study in the form of a figure. Figure 1.1 illustrates how the researcher will proceed to unpack these concepts in a systematic manner.

In this study, the SHLT formed the basis of the study, and acted as the source document to assess the health literacy of patients diagnosed with chronic conditions. The SHLT was developed with a strong theoretical foundation, thus, enabling it to assess different elements of health literacy, namely, appraisal and understanding of information (Reid *et al.*, 2018).

Health literacy will be assessed within the context of the Free State public health sector. Figure 1.1 provides the conceptual framework of the reported study. It was envisaged to assess the health literacy of patients diagnosed with chronic conditions and attending PHC facilities in the public health sector of the Free State Department of Health. The assessment was conducted using the SHLT. Knowing the health literacy of patients may assist in improving patients' health outcomes.



**Figure 1.1: Conceptual framework of this study**

## **1.7 RESEARCH DESIGN**

This study utilised a quantitative descriptive cross-sectional design. A quantitative research design can be used to investigate the relationship between variables (Kauda, 2012:103). This design enabled the researcher to describe patients diagnosed with chronic conditions in Setsoto by mode of surveillance, namely the SHLT. Data was collected over a fixed period of two weeks.

## **1.8 RESEARCH METHOD**

For this study, a structured questionnaire served as a data collection instrument. The SHLT is a 10-item multiple choice questionnaire that assesses the health literacy of

Sesotho-speaking patients diagnosed with chronic conditions. The SHLT is attached as Addendum A.

## **1.9 POPULATION**

The population for this study consisted of patients diagnosed with chronic conditions and attending PHC facilities (n=12) in Setsoto subdistrict. It was estimated by the Patient Health Registration System that 6 390 patients diagnosed with chronic conditions attended the facilities monthly (Republic of South Africa, 2017:75) . The population will be discussed in detail in Chapter 3.

### **1.9.1 Sampling**

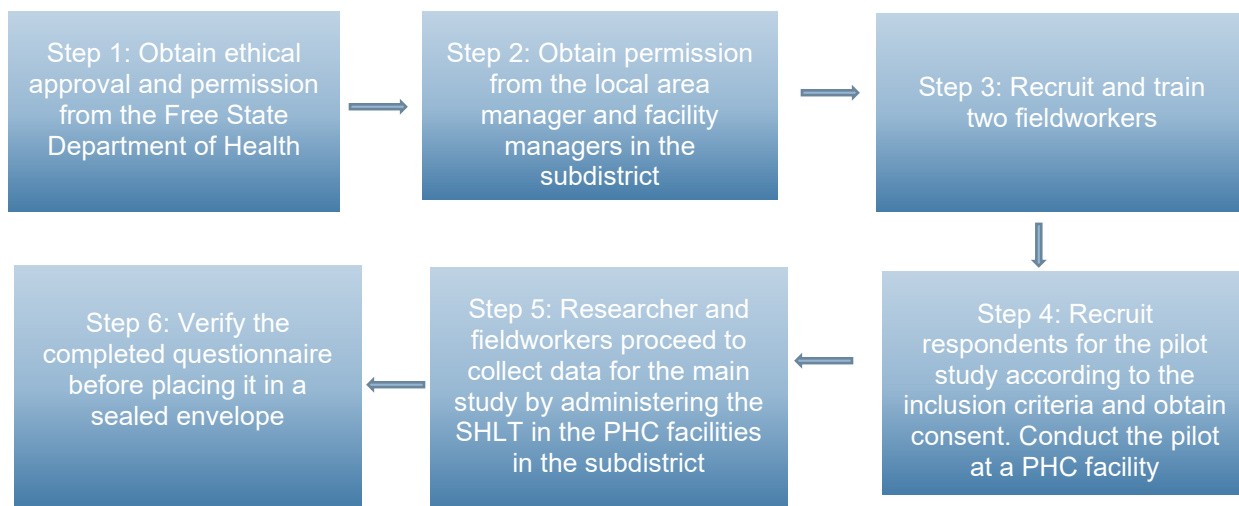
Sampling is referred to as a process of selecting a portion of the population that shares the same characteristics (El-Masri, 2017:20; Polit & Beck, 2017:250). For this study, all the PHC facilities (n=12) were included, while proportional sampling was done of all the patients diagnosed with chronic conditions, and convenient sampling was done for respondents (n=264) in the facilities. Sampling will be discussed in greater detail in Chapter 3.

### **1.10 PILOT STUDY**

A pilot study was conducted at a PHC facility, where the researcher and two fieldworkers each completed the SHLT independently with five respondents. The purpose of the pilot was to clarify and interpret the SHLT. A detailed description of the pilot study will be provided in Chapter 3.

### **1.11 DATA COLLECTION**

In order to achieve the purpose of the study, data collection must be accurate and consistent (Botma, Greeff, Mulaudzi *et al.*, 2010:131). Data collection will be discussed as a stepwise process (Figure 1.2) that was followed by the researcher, and which will be discussed further in Chapter 3.



**Figure 1.2: Data collection steps**

## **1.12 VALIDITY AND RELIABILITY**

Content and face validity were applied to the study. Reliability was enhanced and a detailed description of both validity and reliability will be provided in Chapter 3.

## **1.13 MEASUREMENT AND METHODOLOGICAL ERRORS**

Possible methodological errors of elements were identified, and precautions to limit these errors will be provided in Chapter 3.

## **1.14 ETHICAL CONSIDERATIONS**

During this study, the four Singapore Principles of honesty, accountability, good stewardship and professional courtesy were upheld (Dopita, 2012:1). A detailed description of the principles will be provided in Chapter 3.

## **1.15 DATA ANALYSIS**

Descriptive statistics, namely frequencies and percentages for categorical data and medians and percentiles for numerical data, were calculated per group. The groups were



compared by means of Chi-square test for categorical data and Kruskal-Wallis test for numerical data. The analysis of data was done by the Department of Biostatistics at the University of the Free State. A detailed discussion of data analysis will be provided in Chapter 4.

## **1.16 CONCLUSION**

This chapter provided an overview of the study. The rest of the chapters will be presented as follows:

Chapter 2: Literature review

Chapter 3: Methodology

Chapter 4: Data analysis

Chapter 5: Summary of research findings, recommendations, limitations, value and conclusion of the study.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 INTRODUCTION

Chapter 1 gave a brief introduction to the study. In this chapter, an in-depth discussion of health literacy will be provided. The chapter will start by providing a description of the public healthcare system in the province, and also the primary healthcare setting, since this is the setting where the SHLT was developed to be used. A detailed discussion of health literacy, as the focus of the study, will be explored. Health literacy consists of different elements, and one of those elements is measuring health literacy. Different classifications used by health literacy measuring instruments will be explored and a detailed description of general health literacy instruments will be provided. As this study aimed to assess health literacy of Sesotho-speaking patients who had been diagnosed with chronic conditions, the influence of health literacy on chronic conditions will also be discussed.

### 2.2 HEALTH SYSTEM IN THE FREE STATE

The Free State has an estimated population of 2,87 million, of whom 80% is dependent on public health services (Malakoane, Heunis, Chikobvu *et al.*, 2020:3). This 80% of the residents in the Free State who are dependent on public health services are predominantly African, and 71.9% are Sesotho speakers (Malakoane *et al.*, 2020:3; Reid *et al.*, 2019:2). The Free State's public health system can be assessed according to the health system strengthening building blocks identified by the World Health Organization (WHO). Health system strengthening building blocks describe a country's ability to perform essential roles with the aim of improving the public health system (Malakoane *et al.*, 2020:11). One of the building blocks that has proven to be a challenge for the Free State Department of Health, is financing (Malakoane *et al.*, 2020:11). This challenge has a negative effect on human resource availability, as well as delivery of critical supplies, such as medication. Patients diagnosed with chronic conditions are directly affected by this challenge, as a shortage of medication could lead to poor health outcomes. It is

imperative to identify challenges within the WHO health system strengthening building blocks in order to improve systems that affect patient health outcomes, and to refine and sustain the South African National Health Act's (63 of 2003) (Republic of South Africa, 2004) objectives.

The National Health Act (63 of 2003) provides structure and consistency within health services, and considers the constitution and other laws of national, provincial and local governments (Republic of South Africa, 2004:2). One of the objectives of the Act is to ensure that the people of South Africa exercise their constitutional right by accessing and receiving the best possible healthcare services (Republic of South Africa, 2004:18). The Act also stipulates the need for unity between the various components of the national health system, to improve and promote the national health system in South Africa (Republic of South Africa, 2004:2). The National Health Act also functions as a blueprint that sets out the responsibilities of provincial governments relating to providing effective, integrated and comprehensive services (Republic of South Africa, 2004:34). In this study, comprehensive and integrated services refer to offering the patient diagnosed with chronic conditions a holistic approach when the patient attends the public health service.

Patients attend a PHC facility to seek preventive, curative and rehabilitation services (Republic of South Africa, 2017:6). These services are provided through an interprofessional approach by primary HCPs, such as professional nurses and other allied HCPs (Republic of South Africa, 2017:6). In terms of the Nursing Act (33 of 2005), the HCP consulting the patient is expected to manage the patient holistically, which includes providing treatment and empowerment to improve health outcomes. Patients diagnosed with chronic conditions who frequently utilise healthcare services due to poor self-management, may have inadequate health literacy, which could, ultimately, compromise their health outcomes (Biasio, Lorini, Abbattista *et al.*, 2018:214).

### **2.3 SESOTHO**

Sesotho is a Bantu language that is included in the 11 official South African languages. The origins of the language can be traced as early as the 1300s (South African history

2021: online). The Sesotho clans are mostly represented by mystic symbols, animals or natural objects and Sesotho is the one the first Bantu languages in South Africa to be presented in written format (South African history 2021: online). The language is predominantly spoken in the Free State province where 79% of the population in the Thabo Mofutsayane district are Sesotho speakers. The majority (87%) of the residents in the Setsoto sub district are Sesotho speakers highlighting the importance of measuring health literacy of this population using the SHLT (Municipalities of South Africa, 2019: online).

## **2.4 HEALTH LITERACY**

Health literacy is a concept that is not interpreted analogously and, therefore, researchers define it in different ways. Health literacy is described by some as an individual's social and logical ability to acquire and comprehend health knowledge and to apply it to make informed decisions to improve their health outcomes (Lambert, Mullan, Mansfield *et al.*, 2015:16; Sanders, Schnepel, Smotherman *et al.*, 2014:1; Uzel, Karadağ, Önür *et al.*, 2018:118). Similarly, Zhang, Wu, Zhang *et al.* (2015:1) define health literacy as an individual's capacity to apply health information to improve health outcomes. Warren-Findlow, Hutchison, Patel *et al.* (2014:1834) explain health literacy as a linkage of different domains in a patient's health outcomes, such as treatment adherence, accessing healthcare facilities, good communication skills and the ability to understand health-related documentation.

The WHO endorses the explanation of health literacy by Dodson and colleagues (2015: online):

*Health literacy refers to the personal characteristics and social resources needed for individuals and communities to access, understand, appraise and use information and services to make decisions about health. Health literacy includes the capacity to communicate, assert and enact these decisions.*

The various definitions discussed originate from authors who understand or focus on various dimensions of health literacy.

## **2.4.1 Dimensions of health literacy**

Health literacy comprises the following dimensions: functional, critical and interactive health literacy (Zakaria, Alfarkhry, Matbuli *et al.*, 2018:322).

### **2.4.1.1 Functional health literacy**

Functional health literacy has become the focal point in defining health literacy (Jansen *et al.*, 2018:2). Emtækær Hæsum, Ehlers and Hejlesen (2015:574) define functional health literacy as the patient's ability to function effectively in relation to their health by possessing fundamental skills, that is, reading, writing and numeracy. Possessing functional health literacy will enable patients to navigate through the healthcare system and use the information acquired to improve their health outcomes.

### **2.4.1.2 Critical health literacy**

Critical health literacy is the cultivated cognitive and social skill that gives patients the ability to process and scrutinise health information acquired from different sources and to apply it to improve health outcomes (Dwinger *et al.*, 2014:2777; Emtækær Hæsum *et al.*, 2015:574; Nutbeam, 2000:264). Another important factor regarding this dimension of health literacy is the ability of patients to engage in a variety of tasks and make decisions regarding healthcare matters (De Wit, Fenenga, Giammarchi *et al.*, 2018:2).

Lastly, critical health literacy also refers to the structural components that play a secondary role in the health and well-being of a patient. Those components are the various healthcare systems and healthcare policies that empower patients to take control of their healthcare and management (De Wit *et al.*, 2018:2).

### 2.4.1.3 Interactive health literacy

Interactive health literacy is an observational and social skill that allows the patient to have a conversation with the HCP through the acquired health information (Emtekær Hæsum *et al.*, 2015:574).

Dwinger *et al.* (2014:2777) explain further that interactive health literacy is an advanced personal skill for acquiring health information from different sources and creating new meaning with the aim of improving the health situation. This is a beneficial skill for patients diagnosed with chronic conditions, as it will improve their health outcomes by enabling them to be more inquisitive regarding the provided health information and the management of their healthcare (Bellander & Karlsson, 2019:13). Various factors have been associated with levels of health literacy.

### 2.4.2 Factors affecting health literacy

Certain factors may affect a patient diagnosed with chronic condition's health literacy, such as age, poor socio-economic status and educational attainment (Hickey *et al.*, 2015:429). The older a patient becomes the higher the chances may be of a patient developing memory loss and poor cognitive skills which may affect the patients reading ability (Zhang *et al.*, 2015:7). This may affect the patient's adherence to treatment as they won't be able to read and interpret the treatment instructions. Patients who come from an established socio-economic status and have a good educational background have proven to have a better health literacy level than patients with poor or no educational attainment (Jansen *et al.*, 2018:5). Patients with a good educational background have better literacy skills and are able to navigate the healthcare system and make healthy decision that may improve their health outcomes (Jansen *et al.*, 2018:5).

## 2.5 HEALTH LITERACY MEASURING INSTRUMENTS

Health literacy is measured using various instruments, due to the complexity and variety of dimensions that are being measured. Over the past two decades, different measuring instruments have been developed – some have been used as screening tools and others

as measuring tools (Haun, Valerio, McCormack *et al.*, 2014:303). Health literacy tests have been placed into different categories, namely, the disease-or condition-specific, population/language-specific and general-health literacy tests (Haun *et al.*, 2014:305). In this study, the health literacy test that was used, the SHLT, falls in the general health literacy test category, whilst also being population/language specific (Reid *et al.*, 2019:5). Researchers generally acknowledge the REALM, Test of Functional Health Literacy for Adults (TOFHLA) and NVS as General health literacy tests that measure important dimensions of health literacy. These three health literacy tests and the SHLT, which was used in this study, are discussed in detail in Table 2.1 (Möttus, Johnson, Murray *et al.*, 2014:164).

There are currently 202 general health literacy tests available, and they measure various dimension of health literacy (Health Literacy Tool Shed, 2020: online). Table 2.2 lists and explains other general health literacy tests alphabetically. Each test measures one or more dimensions of health literacy.

**Table 2.1: General health literacy measuring instruments: REALM, TOFHLA, NVS and SHLT**

Name of the instrument (language)	Aim	Structure	Interpretation of results
<b>REALM</b> (Arabic, English, Brazilian Portuguese, Sestwana)	The REALM assesses an individual's ability to scrutinise and enunciate common medical terms (Davis, Crouch, Long <i>et al.</i> , 1991; Zhang <i>et al.</i> , 2015:2). The test measures the patient's ability to recognise medical terms while reading a medical passage (Biasio <i>et al.</i> , 2018:214).	According to Möttus <i>et al.</i> (2014:164), the self-administered test requires the patient to recognise and read out loud 66 medical terms (Fadda, Kanj, Kabakian-Khasholian <i>et al.</i> , 2018:261).	Every correctly pronounced word scores the patient one point, points are converted to grades (Möttus <i>et al.</i> , 2014:164). The grades are converted to four levels: Grade 9 or higher; Grades 7–8; Grades 4–6 and Grade 3 or lower (Haun <i>et al.</i> , 2014:306).
<b>TOFHLA</b> (English, Spanish)	The TOFHLA measures numeracy and basic comprehension skills that are applied in the healthcare setting and which form the basis of health literacy (Dwinger <i>et al.</i> , 2014:2777; Emtækær Hæsum <i>et al.</i> , 2015:574; Fadda <i>et al.</i> , 2018:261; Parker, Baker, Williams <i>et al.</i> , 1995). The TOFHLA measures an individual's understanding of health information (Zhang <i>et al.</i> , 2015:2).	The English version consists of two sections. The first section measures the patient's ability to use and apply basic mathematics skills and requires patients to answer questions about a prescription label, financial information and their appointment cards (Hickey, Sciacca, Gonzalez <i>et al.</i> , 2015:429). The second section measures the patient's ability to read a health-related paragraph and replace the missing words (Möttus <i>et al.</i> , 2014:164).	A correct answer to every question in both sections scores the patient one point. The points are translated into a grading system, namely, inadequate (0–59), marginal (60–74) and adequate (75–100) health literacy (Alidosti, Tavassoli, Heydarabadi <i>et al.</i> , 2019:10-11; Emtækær Hæsum <i>et al.</i> , 2015:575; Todorovic, Jovic-Vranes, Djikanovic <i>et al.</i> , 2019: 34; Zhang <i>et al.</i> , 2015:2).



<p><b>NVS</b> (Brazilian Portuguese, Chinese, Dutch, Italian, English)</p>	<p>The NVS measures two components, numeracy and literacy (Biasio <i>et al.</i>, 2018:215; Weiss, Mays, Martz, <i>et al.</i>, 2005:515).</p>	<p>The patient is given an ice cream nutritional label to read and answer six questions relating to the label. The first four items measure the patient's numerical skill and the last two items measure reading, comprehension and application (Möttus <i>et al.</i>, 2014:164; Warren-Findlow <i>et al.</i>, 2014:1834; Weiss <i>et al.</i>, 2005:515).</p>	<p>Every correct answer in the six-item questionnaire is equal to one point. Adequate health literacy is classified as a score above 4 and inadequate health literacy as a score below 4 (Warren-Findlow <i>et al.</i>, 2014:1836; Weiss <i>et al.</i>, 2005:516).</p>
<p><b>Sesotho health literacy test (SHLT)</b> (Sesotho)</p>	<p>The SHLT measures different components of a patient diagnosed with chronic conditions that is the ability to appraise and understand health information (Reid <i>et al.</i>, 2019:3).</p>	<p>The 10-item test is administered by a trained fieldworker. The test is a multiple-choice questionnaire. Questions 1 to 6 measure the patient's ability to appraise health information and 7 to 10 measure understanding.</p>	<p>Every correct answer scores the patient one point on the grading system: a score below 6 is considered a low health literacy level; a score of 6–7 a moderate health literacy level and above 8 a high health literacy level.</p>

**Table 2.2: Other general health literacy tests available**

Name of the instrument (language)	Description	Time needed to complete test	Limitation	Strength
<b>All Aspects of Health Literacy Scale (AAHLS)</b> <b>(English, Mandarin)</b>	The AAHLS measures all three dimensions of health literacy, namely, functional, critical and interactive health literacy, within the clinical setting (Chinn & MacCarthy, 2013:247). The self-administered test consists of 14 items.	7 minutes	The test is self-administered, which questions the objectivity and reliability of the results (Haun <i>et al.</i> , 2014:322).	The test is based on Nutbeam's expanded health literacy model, which describes the three health literacy dimensions and is also in line with what the test aims to measure. (Chinn & MacCarthy, 2013:248).
<b>Comprehension of 50 medical terms</b> <b>(English)</b>	A comprehension test of 50 medical terms measures the patient's knowledge of medical terms. The 50-item test is conducted verbally (Haun <i>et al.</i> , 2014:306; Samora, Saunders, & Larson, 1961:83).	Not stated (Haun <i>et al.</i> , 2014:319).	The test is one-dimensional and only measures comprehension (Haun <i>et al.</i> , 2014:306).	A trained administrator must conduct the test to ensure consistency and reliability (Haun <i>et al.</i> , 2014:319).
<b>Demographic Assessment of Health Literacy (DAHL)</b> <b>(English)</b>	The DAHL measures the patient's ability to read and write using demographic components, such as age, sex, race and education (Hanchate,	Not stated	The test is designed to measure health literacy of only the elderly (Hanchate <i>et al.</i> , 2008:1566; Haun <i>et al.</i> , 2014:321).	Demographic data is always available (Haun <i>et al.</i> , 2014:321).

	Ash, Gazmararian <i>et al.</i> , 2008:1562).			
<b>European Health Literacy Questionnaire (HLS-EU-Q)</b> <b>(English, Japanese, Turkish, Twainanese)</b>	The HLS-EU-Q is a 47-item test that measures the impact of health literacy on patients' health status. The test covers the four elements of health literacy: the ability to read, comprehend, evaluate and apply health information in the health context (Huang, Chen, Lin <i>et al.</i> , 2018:85). The test can be self-administered or done by interview (Sørensen, Van den Broucke, Pelikan <i>et al.</i> , 2013:2-3).n	12–15 minutes	The test has a lengthy process and that affects the time patients have to respond (Huang, Chin <i>et al.</i> , 2018:85).	The test is available in more than 10 languages (Haun <i>et al.</i> , 2014:322).
<b>Functional Health Literacy (FHL)</b> <b>(English)</b>	According to Zhang, Thumboo, Fong <i>et al.</i> (2009:171) the FHL test measures patients' comprehension by requiring them to fill in medical words that have been left out of a passage. The self-administered test consists of 21 items.	2-3 minutes	The test only measures whether the respondent is functionally literate at Grade 9 level (Zhang <i>et al.</i> , 2009:177).	The test measures more than one health literacy domain (Haun <i>et al.</i> , 2014:321).

<p><b>General Health Numeracy Test (GHNT)</b> (English)</p>	<p>The GHNT measures a patient's ability to apply numerical skills objectively and subjectively in their everyday life (Osborn, Wallston, Shpigel <i>et al.</i>, 2014:2). The test is administered by a trained worker and consists of 21 items.</p>	<p>Not stated</p>	<p>The test focuses on patients' mathematics skills, and not on their understanding of quantities and key concepts (Osborn <i>et al.</i>, 2014:7).</p>	<p>The test measures various components of numeracy (Haun <i>et al.</i>, 2014:322; Osborn <i>et al.</i>, 2014:4).</p>
<p><b>Health Activities Literacy Scale of NALS (NALS)</b> (English)</p>	<p>The NALS is used as a health literacy activity distributor and consists of 191 subscales (Rudd, Kirsch &amp; Yamamoto, 2004:7).</p>	<p>Duration varies</p>	<p>The time required to complete the test is lengthy, due to the design of the test. (Haun <i>et al.</i>, 2014:320).</p>	<p>The test is flexible and can be adapted into different components, example computer (Haun <i>et al.</i>, 2014:320).</p>
<p><b>Health Literacy Assessment Using Talking Touchscreen Technology (HEALTH LiTT)</b> (English)</p>	<p>The Health LiTT is a multimedia test conducted on a touchscreen tablet that measures a range of topics relevant to the patient, such as healthcare, consent forms and coverage. The test consists of 82 items (Hahn, Choi, Griffith <i>et al.</i>, 2011:150).</p>	<p>Duration varies</p>	<p>The test is technology-based, making it difficult to classify patients' health literacy level if patients are technologically challenged (Hahn <i>et al.</i>, 2011:159-160; Haun <i>et al.</i>, 2014:321).</p>	<p>The test is self-administered (Haun <i>et al.</i>, 2014:308).</p>

<p><b>Health Literacy Component of the National Assessment of Adult Literacy (NAAL)</b> (English)</p>	<p>The Health Literacy Component of the NAAL measures an adult's comprehension and application skill (Kutner, Greenberg, Jin <i>et al.</i>, 2006:2). The test consists of 28 health literacy tasks designed to prompt the detection and understanding of health information (Kutner <i>et al.</i>, 2006:4).</p>	<p>Not stated</p>	<p>The time frame of administration might be long, as it is not stated (Haun <i>et al.</i>,2014:319).</p>	<p>This is the first health literacy assessment at national level in America (Haun <i>et al.</i>, 2014:319).</p>
<p><b>Health Literacy Questionnaire (HLQ)</b> (English)</p>	<p>The HLQ assesses health literacy comprehensively by measuring different health literacy competencies of patients, such as understanding, appraisal and application (Osborne, Batterham, Elsworth <i>et al.</i>, 2013:1,14). The test consists of 44 items.</p>	<p>5-15 minutes</p>	<p>The test is also self-administered and that might bring the objectivity of the test into question (Haun <i>et al.</i>, 2014:321).</p>	<p>The test measures different health literacy elements and components (Osborne <i>et al.</i>, 2013:16).</p>
<p><b>Health Literacy Skills Instrument (HLSI)</b> (English)</p>	<p>The HLSI measures the patient's ability to find and interpret text that was read (Bann, McCormack, Berkman <i>et al.</i>, 2012:191). The self-</p>	<p>5–10 minutes</p>	<p>The test measures only one dimension of health literacy, namely, functional health literacy (Haun <i>et al.</i>, 2014:321).</p>	<p>The HLSI measures different health literacy elements with a skill-based strategy (Haun <i>et al.</i>, 2014:321).</p>

	administered test comprises 25 items.			
<b>Lipkus Expanded Health Numeracy Scale (English)</b>	The Lipkus Expanded Health Numeracy Scale is a probability and numeracy health risk assessment test (Lipkus, Samsa, Rimer, <i>et al.</i> , 2001:37). The seven-item questionnaire poses questions regarding health risks.	Not stated	The test is one-dimensional and measures only one component of health literacy, numeracy (Lipkus <i>et al.</i> , 2001:43).	The test is not complicated and measures exactly what its developed to measure, namely, numeracy (Lipkus <i>et al.</i> , 2001:43).
<b>Medical Achievement Reading Test (MART) [English]</b>	The MART is a 42-word identification and pronunciation test (Hanson-Divers, 1997:67).	Not stated	The test only measures the patient's ability to pronounce words, and not their understanding (Hanson-Divers, 1997:67).	Due to the specified component that is measured, the test is easy to administer (Haun <i>et al.</i> , 2014:319).
<b>Medical Data Interpretation Test (MDIT) (English)</b>	The MDIT measures the patient's ability to link dangers and apply them to situations. The 18-item test measures numeracy and literacy (Schwartz, Woloshin, Black <i>et al.</i> , 2005:291).	Not stated	Mode of administration is by mail and the objectivity of the patients might not be upheld (Haun <i>et al.</i> , 2014:320; Schwartz <i>et al.</i> , 2005:295-296).	The test has a more functional approach when measuring risk and numeracy in the health information environment (Haun <i>et al.</i> , 2014:320).
<b>Medical Term Recognition Test (METER)</b>	The METER measures the patient's ability to identify 40 medical terms and 40 non-medical	2 minutes	The test only measures the patient's ability to identify words, and not their understanding (Rawson <i>et al.</i> , 2009:70).	The test is fast and easy to complete (Rawson <i>et al.</i> , 2009:70).

<b>(English; Portuguese)</b>	terms (Rawson, Gunstad, Hughes <i>et al.</i> , 2009:46).			
<b>Numeracy Understanding in Medicine Instrument (NUMI)</b> <b>(English; Spanish)</b>	The NUMI measures the patient's ability to communicate effectively with the healthcare provider and uses numbers and graphs. The self-administered test consists of 20 items (Schapira, Walker, Cappaert <i>et al.</i> , 2012:851).	Not stated	The test only measures the numerical aspects of health literacy (Haun <i>et al.</i> , 2014:321; Schapira <i>et al.</i> , 2012:861).	The test does not concentrate on one aspect of numeracy but is multidimensional in its measuring ability (Haun <i>et al.</i> , 2014:321; Schapira <i>et al.</i> , 2012:825).
<b>Signature Time Test</b>	The Signature Time test measures the correlation between health literacy and the time it takes the patient to sign their name (Sharp, Ureste, Torres <i>et al.</i> , 2013:18).	Less than 1 minute	The test is one-dimensional in terms of measuring health literacy (Sharp <i>et al.</i> , 2013:19).	The test makes it fast and easy to identify patients with inadequate health literacy (Sharp <i>et al.</i> , 2013:21).
<b>Single Item Literacy Screener (SILS)</b> <b>(English)</b>	The SILS measures one component of literacy, which is the patient's ability to read. The one-item test consists of a question with five possible answers (Morris, MacLean, Chew <i>et al.</i> , 2006:2).	1 minute	Poor objectivity is possible, as the test is self-administered (Haun <i>et al.</i> , 2014:320).	The test is efficient, fast and realistic to use in a clinical setting (Morris <i>et al.</i> , 2006:5).

<b>Subjective Numeracy Scale (SNS)</b> <b>(English)</b>	The SNS is an eight-item test that measures a patient's skill to perform mathematics activities (Fagerlin, Zikmund-Fisher, Ubel <i>et al.</i> , 2007:672; Haun <i>et al.</i> , 2014:308).	5 minutes	The test measures only the patient's numerical skills, and not any other health literacy dimension (Fagerlin <i>et al.</i> , 2007:680).	Compared to the other numeracy tests, the SNS is fast and gratifying in producing a good completion rate (Fagerlin <i>et al.</i> , 2007:679).
<b>Swiss Health Literacy Survey (HLS-CH)</b> <b>(English)</b>	The HLS-CH measures the patient's knowledge and understanding in the clinical setting (Wang, Thombs & Schmid, 2012:412). The survey consists of 127 items covering thirty competencies in health (Wang <i>et al.</i> , 2012:396).	30 minutes	The duration of the test is long, and might affect responses by patients (Haun <i>et al.</i> , 2014:321).	The test measures different elements of health literacy, such as application and understanding (Haun <i>et al.</i> , 2014:321).
<b>Three-item Health Literacy Screening</b> <b>(English)</b>	The three-item Health Literacy Screening test enables the identification of adults with inadequate health literacy by recognising useful clinical questions (Chew, Bradley & Boyko, 2004:589).	1–2 minutes	The test is unable to identify patients with marginal health literacy (Schwartz <i>et al.</i> , 1997:593).	The test is uncomplicated and quick to complete. Each question can easily identify a patient with inadequate health literacy (Haun <i>et al.</i> , 2014: 320; Schwartz <i>et al.</i> , 1997:593).
<b>Three-Item Numeracy Measure</b> <b>(English)</b>	The Three-Item Numeracy Measure consists of three numeracy questions to measure numerical	3–4 minutes	The test only measures numerical elements (Schwartz <i>et al.</i> , 1997:971).	The test does not require a long time to complete and is self-administered (Haun <i>et al.</i> , 2014:319).



	accuracy (Schwartz, Woloshin, Black <i>et al.</i> , 1997:967).			
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Table 2.1 and 2.2 analyse samples of various general health literacy measuring instruments. One of the measuring instruments discussed in Table 2.1, namely, the SHLT, is the test that was used in this study to measure the different dimensions that include reflecting, understanding information and appraising understanding of health information of health literacy in Sesotho patients diagnosed with chronic conditions.

## **2.6 CHRONIC CONDITIONS**

According to Megyesiova and Lieskovska (2019:1), a chronic condition is defined as an everlasting condition that requires treatment. In this study, a chronic patient refers to a patient diagnosed with any of the following conditions: cardiovascular, respiratory, gastrointestinal, immunologic, skin, endocrine, reproductive, musculoskeletal, urological, neurological and mental health conditions that require continuous treatment to maintain good health.

### **2.6.1 Chronic conditions and health literacy**

Identifying a patient's health literacy level plays an essential role in the process of patients seeking treatment and preventive services for their chronic conditions (Poureslami, Nimmon, Rootman *et al.*, 2017: 744). Health literacy has an impact on disease prevention, as patients will seek early medical care for their chronic conditions and make health-conscious decisions regarding their health (Poureslami *et al.*, 2017:749). Health literate patients will have a better understanding of their chronic conditions (Todorovic *et al.*, 2019:32). Moreover, these patients will also start engaging in activities that will improve their health by altering their diets, drinking habits and physical activity to promote good health (Goto *et al.*, 2018:723).

It is important to empower patients with skills and behavioural traits to help improve their health outcomes (Elmer, Bridgman, Williams *et al.*, 2017:102; WHO, 2020: online). Health literacy plays an integral role in health promotion, as it can empower patients, give them greater insight into their chronic conditions, and make them take active decisions that will

influence their health outcomes (Emtekær Hæsum *et al.*, 2015:574; Gugglberger, 2019:887; Persell, Karmali, Lee *et al.*, 2020:88; Warren-Findlow *et al* 2014:1833).

Health literacy has also become a motivational factor in self-management behaviour of patients diagnosed with chronic conditions (Yadav, Lloyd, Hosseinzadeh *et al.*, 2020:2). Self-management behaviour refers to patients diagnosed with chronic conditions having better social and cognitive skills that help to improve and promote good health (Dahal & Hosseinzadeh, 2019:526). The skills acquired will help patients be more health conscious and aware of how certain factors, such as diet and exercise, can influence their health outcomes (Elmer *et al.*, 2017:103).

## **2.7 CONCLUSION**

In this chapter, the public healthcare system in the Free State and the challenges that affect the province were discussed. An overview of how these challenges affect patients diagnosed with chronic conditions was also provided. A detailed summary of health literacy was given, and the different health literacy dimensions discussed. Various general health literacy instruments were also discussed in terms of their strengths and weaknesses. Lastly, the impact of health literacy on chronic conditions was outlined. The next chapter will present the methodology applied in the study.

## CHAPTER 3: METHODOLOGY

### 3.1 INTRODUCTION

Chapter 2 gave an in-depth theoretical summary of the study, which assessed the health literacy of Sesotho-speaking patients diagnosed with chronic conditions using the SHLT. Chapter 3 will focus on giving a detailed explanation of the methodology applied in the study, in order to delineate how the researcher went about achieving the aim of the study as well as the objectives that had been set. The study aimed to assess the health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free State province.

In this chapter, the researcher will discuss the research design and research method that was applicable, with its strengths and limitations. The relevant population, sampling, pilot study, validity and reliability will also be discussed in Chapter 3. Applicable ethical issues and how data was analysed will conclude the chapter.

### 3.2 RESEARCH DESIGN: QUANTITATIVE DESCRIPTIVE CROSS-SECTIONAL

Santos, Koerich and Alpers (2018:958) describe a research design as a technique, in the form of an investigative procedure, that has the sole purpose of constructing a study. In order to structure the investigation during the reported study, a quantitative descriptive cross-sectional research design was used. Astroth and Chung (2018:285) explain that a research design aims to investigate and answer the research question, which inevitably acts as the framework of a study.

The research question that acted as the study's framework was,

*What is the health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free State province?*

This design was applicable to the study, as the affiliation between health literacy and Sesotho-speaking patients diagnosed with chronic conditions was assessed using the SHLT (Addendum A).

### **3.2.1 Quantitative research**

A quantitative research design is an analysis of an occurrence and the ability to provide results in a structured way by means of accurate numbers (Hannigan, 2018:940; Polit & Beck, 2017:741). This design enabled the investigator to answer the research question numerically, whilst systematically collecting and assessing data using a formal instrument (Astroth & Chung, 2018:283; Queirós, Faria & Almeida, 2017:370). In this study, the SHLT was the data collection instrument that was used. The data collected with the SHLT was analysed and the results were presented numerically.

### **3.2.2 Descriptive design**

A descriptive research design is explained as a detailed description of characteristics, and an interpretation of them (Aquino, Lee, Spawn *et al.*, 2018:36; Martin-yeboah & Atuase, 2019:41). In this study, the SHLT was the instrument used to assess the health literacy of Sesotho speaking patients diagnosed with chronic conditions. This design examined the facts precisely, and clarified them accordingly (Aquino *et al.*, 2018:36; Martin-yeboah & Atuase, 2019:41; Melnikovas, 2018:41). The health literacy of Sesotho speaking patients diagnosed with chronic conditions was clarified, as each item in the SHLT measured different components, namely, reflecting, understanding information, and appraising understanding of information.

### **3.2.3 Cross-sectional design**

A cross-sectional design is a design where a population is assessed at a particular moment in time, in which time variables are described (Umukoro & Akinade, 2018:1159; Wekeza & Sibanda, 2019:3). In this study, data was collected over a period of two weeks in August 2019 in various PHC facilities. A day was allocated per facility, during which a specified number of respondents who agreed to participate in the study were assessed

using the SHLT. The health literacy of the Sesotho patients diagnosed with chronic conditions was described by using the SHLT.

### 3.2.4 Strengths of a quantitative research design

The following were identified as strengths of the design:

- The first strength identified was *the ability to reach more respondents and generalise the data collected* (Davies & Fisher, 2018:22). In this study, the respondents (n=264) provided the researcher with more grounds to generalise the results.
- The second strength identified was *the ability of the researcher to maintain objectivity* (Queirós *et.al*, 2017:382; Polit & Beck, 2017:208). During data collection, the researcher adhered strictly to the guideline and sequence of the data collection instrument (Addendum A). The data collection was conducted according to the SHLT guideline. This ensured that the researcher remained consistent and impartial during the data collection process.
- The third strength identified was using *an easy-to-use structured data collection instrument* (Queirós *et.al*, 2017:382; Polit & Beck, 2017:208). The SHLT was the structured questionnaire that was used, and it is accompanied by a guideline that gives instructions on how to administer the questionnaire. This made the data collected reliable and the collection generally effortless. The researcher and trained fieldworkers read the questions and answers to the respondents, ensuring consistency and accuracy during data collection. The respondents were receptive to this form of answering, as it was easy and less time consuming.
- The fourth strength identified was the *economic benefits, as data collection took place over a short period of time* (Blair, Aloia, Valliant *et al.* 2017:2; Wekeza & Sibanda, 2019:3). Data collection was done over a period of two weeks, and the time frame was within the allocated budget.
- *The fifth strength identified was the ease with which data was collected* (Wekeza & Sibanda, 2019:3). The SHLT was a structured 10-item multiple choice

questionnaire that is accompanied by a guideline (Addendum E), which made the instrument easy to understand and complete.

With that said, the design also had some limitations.

### **3.2.5 Limitations of a quantitative research design**

*A possible limitation would be the inability of the researcher to observe and note the respondents' emotional distress (Queirós et.al, 2017:382).* However, this was not the case in this study. During data collection at one of the facilities, the fieldworker noticed that the respondent was inconsistent, struggled to speak and deviated when answering the questions. The process was stopped immediately, and the data was not included in study, as the answers were inaccurate and misleading. The respondent was then referred to a HCP, to ensure that the respondent received further care.

## **3.3 RESEARCH METHOD: SURVEY THROUGH STRUCTURED QUESTIONNAIRE**

A survey is a way of collecting data from respondents via questionnaires in a structured format (Creswell, 2014:155; Queirós et al., 2017:381). Polit and Beck (2017:174) describe components of a structured questionnaire as having fixed questions that are answered in an orderly fashion.

### **3.3.1 Strengths of a structured questionnaire**

*The first strength identified was the ability of the population to represent the majority in the study (Queirós et al., 2017:381).* The questionnaire enabled the researcher to reach as many respondents as was practically possible, as the questionnaire only took 10 minutes to complete.

The second strength that was *identified was the ability to simplify the analysis process and application of the collected data (Thomas, Oenning & de Goulart, 2018:660).* The format and construction of the SHLT made it easy to interpret, summarise and analyse the data.

However, the structured questionnaire also had some limitations as a research method.

### **3.3.2 Limitations of a structured questionnaire**

The limitation that was identified was that the questionnaire consisted of closed-ended questions, which limited the possibility of an alternative answer being given (Dadipoor, Ramezankhani, Aghamolaei *et al.*, 2019:13). The SHLT consists of 10 items, and each item has the option of three answers, thus, limiting the respondents' answers to these three options. During data collection, the respondents asked the researcher and the fieldworkers whether they could explain or elaborate their answers. This proved to be a challenge, as it was not possible, because the questions were closed-ended and providing additional explanations would interfere with the consistency of the data collection process. However, the validated SHLT (Reid *et al.*, 2018) is aligned with the format of other health literacy tests, which also have closed options.

### **3.4 STRUCTURE OF THE SHLT**

The SHLT consisted of two sections, section A represented the demographic data and section B represented the 10 items of the SHLT. The demographic data presented gender distribution of the respondents, age distribution and the highest academic level attained by the respondents. Whether the respondents had a problem reading due to poor eyesight and classification of chronic conditions was also included in the demographic data. These factors were selected to determine the impact they might have on the respondent's health literacy level. Each item in the 10-item SHLT questionnaire has a predefined correct answer. Question 1-6 measured appraisal of health information and 7-10 measured understanding of health information. Data from the SHLT was interpreted as follows: A score of <6: Inadequate health literacy; 6-8: Marginal health literacy; and 8+: Adequate health literacy. The first six items of the SHLT evaluate respondents' ability to appraise health information, whilst the last four items evaluate their understanding of health information reflected in the SHLT.



### **3.5 POPULATION**

A population is a group of people who share the same characteristics (El-Masri, 2017:20; Polit & Beck, 2017:738). In this study, the population was Sesotho-speaking patients who had been diagnosed with chronic conditions and who attended a PHC facility in the Setsoto subdistrict. Table 3.1 sets out the facilities (n=12) located in Setsoto subdistrict, with each facility's estimated monthly attendance of patients diagnosed with chronic conditions. It was estimated that about 6 390 patients diagnosed with chronic conditions attended the facilities monthly.

#### **3.5.1 Sampling**

This study used two types of sampling, namely, proportional sampling of respondents from a PHC facility, and convenience sampling of the respondents at the facility. Proportional sampling refers to the number of respondents selected to participate in the study who reflected the true characteristics of the stratum (Creswell, 2009:148; Maree, 2007:175; Polit & Beck, 2017:256). Table 3.1 presents a layout of proportionally sampled respondents per PHC facility, as well as conveniently sampled respondents at a PHC facility.

Convenience sampling refers to the respondents who were available and willing to participate in the study on the day data collection took place (Polit & Beck, 2017:724). Conveniently sampled respondents (n=264) who met the following inclusion criteria were included in the study:

- A patient older than 18 years,
- Who had been diagnosed with a chronic condition,
- Who was a Sesotho home-language speaker,
- Who attended a PHC facility in Setsoto subdistrict, and
- Was willing to participate.

**Table 3.1: Distribution of proportional sampled respondents per PHC facility, as well as conveniently sampled respondents at a PHC facility**

<b>PHC facilities in Setsoto subdistrict</b>	<b>Estimated population attendance/month</b>	<b>Proportional sample</b>	<b>Convenient sample</b>
<b>PHF 1</b>	578	27	25
<b>PHF 2</b>	617	29	29
<b>PHF 3</b>	61	3	3
<b>PHF 4</b>	519	24	23
<b>PHF 5</b>	556	26	26
<b>PHF 6</b>	715	34	34
<b>PHF 7</b>	377	18	18
<b>PHF 8</b>	97	5	5
<b>PHF 9</b>	237	11	11
<b>PHF 10</b>	836	39	38
<b>PHF 11</b>	1 054	49	25
<b>PHF 12</b>	743	35	27
<b>Total</b>	<b>6 390</b>	<b>300</b>	<b>264<sup>1</sup></b>

### **3.6 PILOT STUDY**

A pilot study is defined as a preliminary run, to assess the feasibility of the study, and that enables the researcher to clarify procedures that would be used on a larger scale (Polit

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<sup>1</sup> Challenges faced in PHC facilities prevented the researcher from strictly keeping to the advised proportional size of sample/facility

& Beck, 2017:738; Shader, 2015:1380; Strydom, 2011:237). Strydom (2011:236) alludes to the importance of conducting the pilot prior to the main study, as it would allow the researcher to adapt the instrument and identify any measurement errors. The pilot played a vital role in assisting to clarify and interpret the SHLT.

The pilot study was conducted at a PHC facility in Setsoto by the researcher and two fieldworkers who had been trained prior to the pilot. The pilot acted as an additional training session for the fieldworkers, as the researcher and the fieldworkers completed the SHLT on the same participant, which enabled them to verify and compare the data that was collected. As part of data collection for the pilot study, the researcher and the fieldworkers each completed the SHLT on five respondents independently, in all, n=15 respondents were included in the pilot. The fieldworkers were trained health workers who had been recruited in the Setsoto sub district. The fieldworkers were Sesotho speaking and not known to the respondents. The same applied to the researcher. The fieldworkers were required to have a background in administering a structured questionnaire, to ensure that they were competent at collecting data. The fieldworkers were also expected to sign a confidentiality agreement to ensure privacy of the information shared by the respondents. The respondents who participated in the study and met the stipulated inclusion criteria were conveniently sampled.

### **3.7 DATA COLLECTION**

Polit and Beck (2017:725) explain data collection as a procedure that is conducted to answer the research question. Approval from the Health Sciences Research Ethics Committee was granted prior to data collection (see Addendum F). Permission from the head of the Free State Department of Health to conduct the study in the subdistrict was granted (see Addendum G). Arrangements were made with the local area manager and facility managers regarding the data collection schedule, such as the date and time. As mentioned in the discussion of the pilot study, the two fieldworkers were community healthcare workers who had been trained on the SHLT (Addendum A) and the guideline (Addendum E). Data was collected on scheduled dates per town. Respondents were approached in the waiting area of the PHC facility by personnel of the PHC facility, to gain

verbal consent to participate in the study prior to the researchers clarifying if they met the inclusion criteria. Once the respondents had agreed to participate in the study, they were taken to an area where privacy was guaranteed. Informed consent was obtained, and the information leaflet (Addendum C) was presented to the respondents. Data collection was done consistently, and the principles applied in the pilot were applied in the main study. Every completed questionnaire was sealed in an envelope, to maintain confidentiality. The same was done per facility. In total 264 questionnaires were completed and sealed for coding, verification and analysis.

One of the challenges encountered during data collection was creating a system that was unique to each facility for administering the questionnaires without disturbing the services being provided at the facilities. Researchers were able to devise plans to negotiate this challenge with the input of facility personnel. Another challenge faced was that respondents were not all willing to participate, which influenced the number of surveys that could be completed per facility.

### **3.8 VALIDITY**

Validity is described as the level to which an assessment instrument measures the notion of what it is created to assess (Crisp, 2017:523; Delpont & Roestenburg, 2011:171; Polit & Beck, 2017:309). In this study, face and content validity were applied to ensure that the research was valid.

#### **3.8.1 Face validity**

Face validity was established by the measuring instrument (the SHLT) giving an appropriate indication of the elements being measured (De Groef, Van Kampen, Moortgat *et al.*, 2018:5; Delpont & Roestenburg, 2011:171; Lebet, Asaro, Zuppa *et al.*, 2018:16). All the elements that made up a health literacy test were incorporated in the SHLT (see Addendum A). The format and structure of the SHLT is similar to that of other health literacy tests, for example the NVS (Ko, Lee, Toh *et al.*, 2012:50–51; Patel, Joel, Rovena *et al.*, 2011:506)

### **3.8.2 Content validity**

Content validity refers to the extent to which the content of the measurement instrument is able to reflect the various aspects of the construct is being measured (Creswell, 2009:14; De Groef *et al.*, 2018:6). The SHLT was developed within a strong theoretical foundation, thus, enabling it to assess health literacy (Reid *et al.*, 2018). Each question of the SHLT assessed different components of health literacy, such as understanding, appraisal and application of health information.

### **3.9 RELIABILITY**

Reliability is said to be present when an assessment instrument is free of measurement errors, and yields the desired results (Pokorni, 2019:589; Polit & Beck, 2017:303; Salazar, Crosby & DiClemente, 2015:186). Reliability was promoted by conducting the pilot study, which assisted in identifying any external factors that might influence the collected data. To eliminate external factors, respondents were taken outside the facility, to a private area to ensure consistent administration of the questionnaire. The fieldworkers were trained on the questionnaire and the guideline, so it strengthened the reliability of results. The researcher and fieldworkers used the SHLT guideline (Addendum E) as a step-by-step guide to administer the questionnaire and minimise measurement errors.

### **3.10 MEASUREMENT AND METHODOLOGICAL ERRORS**

In this study, methodological errors were identified; plans that were instituted to limit errors are indicated in Table 3.2.

**Table 3.2: Measurement and methodological errors**

<b>Methodological and measurement errors</b>	<b>Plans that limited errors</b>
<b>Two fieldworkers and researcher collected data- possible interpretation of SHLT</b>	The fieldworkers and researcher were strictly guided by the SHLT guideline. The pilot study assisted to promote consistency in data collection and interpretation of the SHLT.
<b>Not all questions of the SHLT questionnaire answered</b>	The researcher and fieldworkers verified each completed questionnaire directly after completion, prior to the respondent leaving. The researcher and fieldworkers then verified all the questionnaires for completion prior to leaving the facility.
<b>If confidentiality is not upheld, the respondents might not be forthcoming or open with their answers</b>	The researcher and fieldworkers interviewed all the respondents in a private area in order to reassure the respondents and enhance trust in the research process.
<b>The respondents might feel physical or emotional discomfort during the interview</b>	The respondents did not, generally, show signs of discomfort or emotional distress during the interviews. If any discomfort was identified, HCPs from the facility were asked to assist.
<b>Data integrity</b>	The researcher verified and coded the data twice before sending it to the biostatistician for analysis.
<b>Exclusion of bias</b>	The researcher and fieldworkers were not known to the respondents, thus, limited any form of bias. The SHLT guideline structured data collection further, limiting bias during data collection

### **3.11 ETHICAL CONSIDERATIONS**

The trustworthiness of research solemnly relies on the effectiveness and integrity of the research (Dopita, 2012:1; Fiore & Cushman, 2011:188; Marušić & Marušić, 2008:382; Resnik & Shamoo, 2011:73). During this study, the four Singapore Statement principles of honesty, accountability, good stewardship and professional courtesy were upheld (Dopita, 2012:1).

*Honesty* must be ensured in all facets of a study (Resnik & Shamoo, 2011:73). Honesty was ensured by being transparent with the respondents by availing an information leaflet (Addendum C), in Sesotho, that explained the content of the study and the data that would be collected. As indicated in the information leaflet, participation was voluntary and the respondents were never coerced to participate, the researcher kept her promises and upheld the principle. Informed consent (Addendum D) was obtained from the respondents, thereby ensuring that privacy was upheld throughout the study.

*Accountability* must be ensured in the performance of the research (Resnik & Shamoo, 2011:73). The researcher ensured that accountability was upheld and all the promises made by the researcher were kept, such as ensuring that services in facilities were not disrupted during data collection. The researcher, furthermore, strictly adhered to the data collection and analysis process set out in the study. The researcher ensured that the data collected was handled responsibly and confidentially to prevent any linkage to the respondents.

*Good stewardship* in the interest of other researchers was upheld (Marušić & Marušić, 2008:382) by ensuring adequate recordkeeping, by keeping a paper trail of all data collected, and keeping data safe. The completeness of the SHLT questionnaires was verified by the fieldworkers themselves and, additionally, by the researcher, as soon after data collection as possible. The completed questionnaires were kept in a sealed envelope in a locked cupboard until coding was completed and submitted for analysis.

*Professional courtesy* was upheld (Dopita, 2012:1). Professional courtesy was ensured by acknowledging all the contributing factors to the study, whether data or text related. Respondents were given the option to withdraw at any time during the study. Professional courtesy was upheld, as the staff at the facility acted as the gatekeepers and ensured that the respondents were not coerced to participate in the study.

### **3.12 DATA ANALYSIS**

Data analysis refers to data being reviewed in the form of percentages and means (Polit & Beck, 2017:726). Descriptive statistics, namely frequencies and percentages for

categorical data, and medians and percentiles for numerical data, were calculated per group. The groups were compared by means of the Chi-square test for categorical data and Kruskal-Wallis test for numerical data. The questionnaires were coded by the researchers and transferred onto an excel spreadsheet. The same process was repeated on another excel spreadsheet. The two coded spreadsheets were submitted to the biostatistician for verification and to identify any inconsistencies between the two sheets. Data was analysed with SAS software (copyright, SAS Institute Inc. SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc., Cary, NC, United States of America).

### **3.13 CONCLUSION**

This chapter provided an in-depth description of what a quantitative research design consists of. The strengths and limitations of the research design and research method were discussed with reference to the study. The research method that was used during data collection was a structured questionnaire, the SHLT. The collection of data for both the pilot and the main study was discussed, as were the challenges that arose. Sampling was also described, and it was explained how it was used to select the respondents who participated in the study. Reliability and validity were upheld during the data collection process by ensuring consistency. Ethical principles were applied and referenced throughout the study. The chapter concluded with the way data analysis was done. The next chapter will present results of the study.



## **CHAPTER 4: DATA ANALYSIS**

### **4.1 INTRODUCTION**

Chapter 3 gave a full description of the methodology applied in the study. The objective of the study was to establish the associations between demographic factors of chronic patients attending public health facilities in Setsoto subdistrict, and items of the SHLT that reflect appraisal and understanding of information. In the process of analysis and data interpretation, the researcher was guided by the objective of the study. Chapter 4 will present and interpret the data collected using the SHLT during the study by means of illustrations and tables.

### **4.2 DATA ANALYSIS**

The data for this study was analysed by using the Kruskal-Wallis and Chi-square tests. The Kruskal-Wallis test was used to analyse numerical data and findings of the SHLT items (Polit & Beck, 2017:733). The Chi -square test is a statistical test that is used to distinguish between two proportions (Polit & Beck, 2017:721). In this study, the Chi-square test was used to analyse categorical data and some elements of the demographic data.

### **4.3 SECTION A**

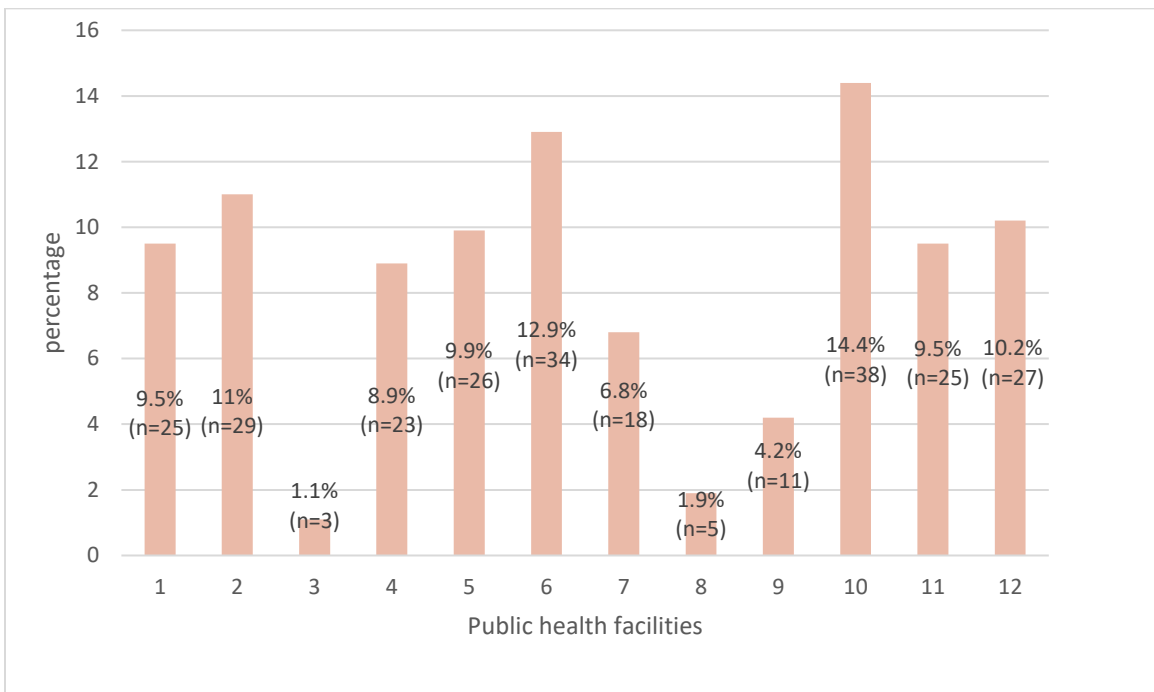
The demographic information of Sesotho-speaking patients was collected in Setsoto, a subdistrict in the Free State province. The subdistrict consists of four towns with 12 public health facilities (Municipalities of South Africa, 2019: online). The data was collected using the SHLT (Addendum A). This questionnaire consists of two sections and data from both sections were integrated in the findings. Section A represents demographic data from questions 1.1–1.8 on the questionnaire, while Section B represents the 10 items of the SHLT. Questions 1–6 of the SHLT measured appraisal of information by the respondents, and questions 7–10 measure understanding of information.

### 4.3.1 Demographic data

Demographic data refers to specified characteristics of a population (NIH, 2020: online). Demographic data in this study included the sampled population at the public health facilities (n=12) in Setsoto, gender distribution of the respondents, age distribution and the highest academic level attained by the respondents. Whether the respondents had a problem reading due to poor eyesight, and classification of chronic conditions was also included in demographic data. Each of the elements of demographic data will be presented and discussed in the next sections.

### 4.3.2 Sampled population

The sampled population represents the respondents at the public health facilities (n=12) who participated in the study. Figure 4.1 illustrates the findings regarding proportionally sampled respondents (n=264) who participated in the study.



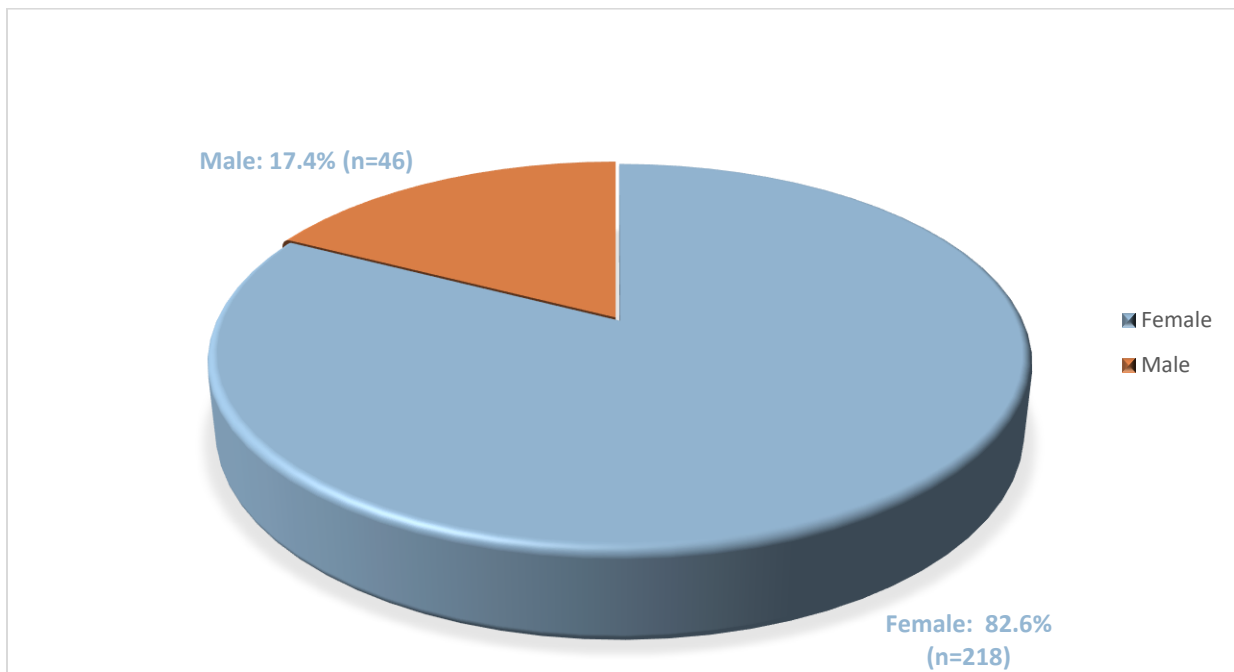
**Figure 4.1: Proportional distribution of sampled population (n=264)**

As indicated in Figure 4.1, Facility 10 had the highest (14.4%) number of sampled respondents, while Facility 3 had the lowest (1.1%). The proportionally sampled

respondents are distributed over four towns in Setsoto. The proportional sampling is aligned to facility attendance, which also coincides with towns' population sizes. Ficksburg has the biggest population, of 41 248, and Marquard the lowest, with 15 502 (Census 2011, 2011: online).

### 4.3.3 Gender distribution

The data presented in Figure 4.2 is a breakdown of the respondents' (n=264) gender distribution, namely frequency and percentage of male and female respondents (n=264) who participated in the study.



**Figure 4.2: Gender distribution**

The data in Figure 4.2 indicates that 82.6% (n=218) of the total number of respondents were female respondents, and only 17.4% (n=46) were male respondents. The gender distribution in this study aligns with the profile of patients who attend primary healthcare facilities in the Free State, since the majority are women (M. Mofokeng. 2020, personal communication, 24 June). Nlooto (2017:4, 7) conducted a study in KwaZulu-Natal that also found that more female patients attended public health facilities than their male counterparts.

#### 4.3.4 Age distribution

Table 4.1 represents the age distribution of the conveniently sampled respondents (n=264).

**Table 4.1: Age distribution of the respondents (n=264)**

Age distribution (years)		
Median	Minimum	Maximum
43	20	93

Table 4.1 indicates that the youngest respondent was 20 years old, and the oldest respondent was 93. The median age of the proportionally sampled respondents who participated in the study was 43 years. The median age of respondents in this study corresponds with that of a study conducted by Petersen, Bhana, Fairall *et al* (2019:4) in the North West province of South Africa. The study found a median age of 46 years for mental health patients diagnosed with chronic conditions.

#### 4.3.5 Highest academic qualification

Table 4.2 represents the highest academic qualifications of the respondents (n=264).

**Table 4.2: Highest academic level of the respondents (n=264) in frequency and percentages**

Highest academic level	Frequency	Percentage
No schooling	13	4.9%
Grades 1–8	92	34.9%
Grades 9–12 (NQF level 1–4)	150	56.8%
Higher certificate (NQF level 5)	2	0.8%
Diploma or advanced certificate (NQF level 6)	7	2.7%

The finding of almost 5% of respondents who reported not having undergone any schooling corresponds with a survey conducted by Statistics SA (2016:17), which reports that 5% of the Free State population never attended school. The data also indicates that 56.8% of the respondents' highest level of academic achievement was Grades 9–12, which is equivalent to an NQF qualification between levels 1 and 4. The findings of this study correlate with the findings of a survey conducted by Statistics SA (2016:26), which indicates that 58.6% of the population of the Thabo Mofutsanyane district reported their highest level of academic achievements as being between Grades 9 and 12. The data also indicates that 2.7% of the respondents had obtained a diploma or advanced certificate. The few (n=7) respondents who had obtained diplomas or advanced certificates is slightly lower than that reported by a survey conducted by Statistics SA (2016:17) for the general population in the Free State, which found that 4% of the population had obtained diplomas or advanced certificates.

#### **4.3.6 Problems reading due to poor eyesight**

Table 4.3 reports on the respondents (n=264) who struggled to read due to eyesight problems.

**Table 4.3: Respondents' (n=264) inability to read due to eyesight problems**

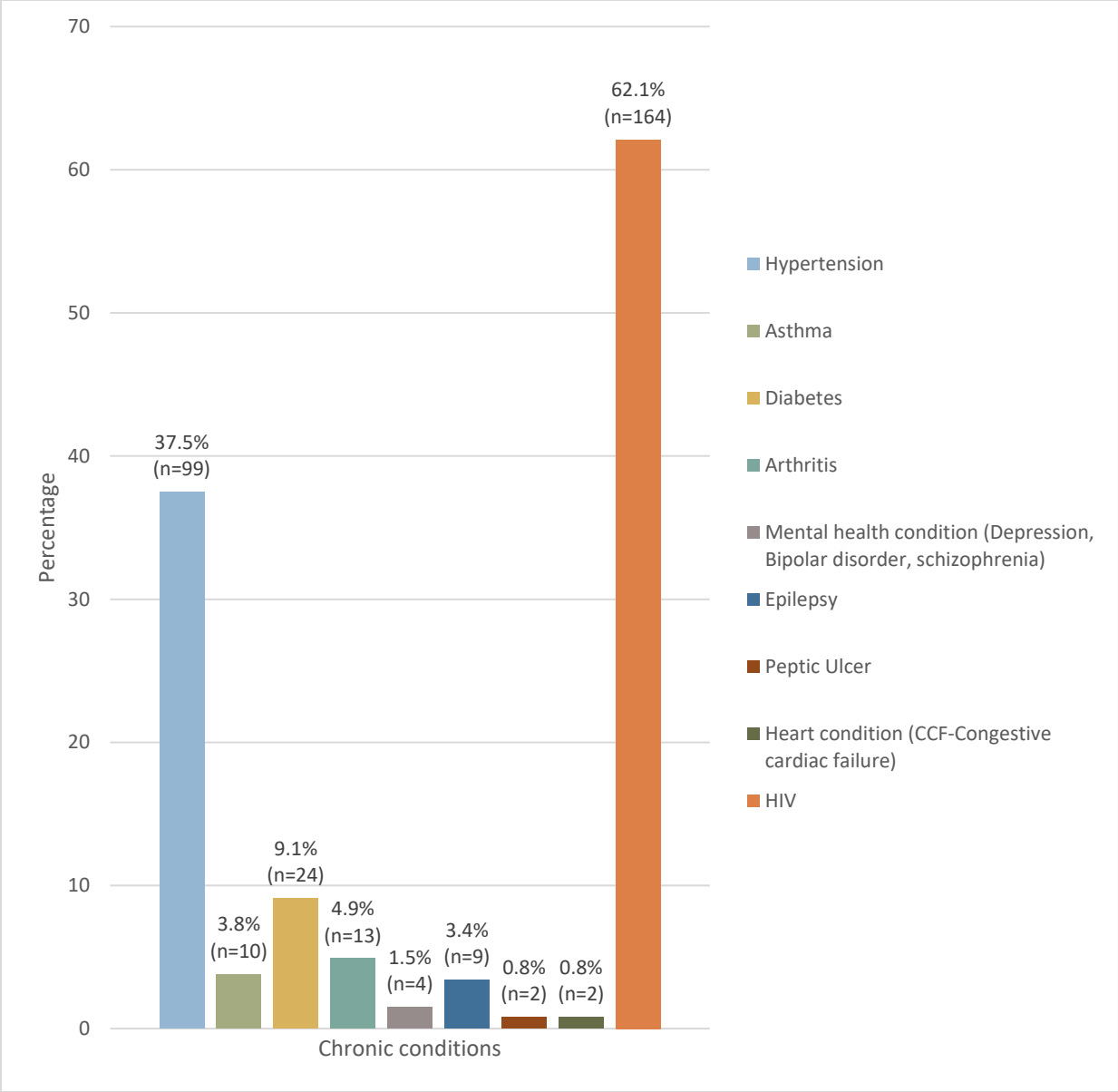
<b>Problems reading due to eyesight</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Yes</b>	123	46.6%
<b>No</b>	141	53.4%

The data in Table 4.3 reports that 53.4% (n=141) of the respondents indicated that they did not have problems with their eyesight and did not find it difficult to read, while 46.6% (n=123) of the respondents indicated that they experienced problems reading, due to poor eyesight. Hypertension and diabetes are known to be among the main causes of diabetic retinopathy, which can lead to early blindness and poor vision (Sharma, Saxena, Mishra *et al.*, 2017:2013). Further research is needed to establish the possible impact limited eyesight can have on health literacy. It is not possible to link chronic diseases of respondents in this study to poor vision.

However, the median age of the respondents who participated in the study was 43 years. Adults in their mid-forties may start experiencing changes in their eyes regarding their focusing ability, and may need reading assistance (American Optometric Association, 2020: online). The percentage of respondents who reported needing reading assistance corresponds with the respondents' age profile.

#### **4.3.7 Chronic conditions**

The various chronic conditions the respondents had been diagnosed with are presented in Figure 4.3 (respondents could present with comorbidities).



**Figure 4.3: Percentages and frequency of chronic conditions of respondents (n=264)**

The data in Figure 4.3 indicates that 62.1% (n=164) of the respondents who participated in the study were diagnosed with HIV, which rates as the chronic condition with the highest frequency that the respondents reported being diagnosed with. South Africa has the biggest HIV epidemic in the world, with a prevalence rate of 18.9%, while the Free State province has a prevalence rate of 20.4% (Rau, Wouters, Engelbrecht *et al.*, 2018:2;

Rawat, Uebel, Moore, *et al.*, 2018:477). The high prevalence rate (20.4%) for the Free State in general is much lower than the HIV prevalence rate for the respondents (62.1%) in this study.

Rawat *et al.* (2018:476) conducted a study in the Free State province on how integrated HIV care by primary healthcare clinics influences the management of diabetes and hypertension. The researchers reported increasing numbers for hypertension and diabetes in the country – hypertension is rated as the disease with the second-highest prevalence (31.8%) in South Africa. In this study, hypertension also rated as the second most reported disease (37.5%) by respondents. There is a slight correspondence between the two studies, as the results fall within the 30% range (Rawat *et al.*, 2018:477). Rawat *et al.* (2018:477) indicate that the prevalence rate for diabetes in South Africa is 9.8%, which is comparable with findings by this study, which found 9.1% of the respondents had been diagnosed with diabetes.

#### **4.4 SECTION B: ITEMS OF THE SESOTHO HEALTH LITERACY TEST**

The SHLT (Reid *et al.*, 2019:6) was used in this study to measure health literacy of Sesotho home-language speakers diagnosed with chronic conditions. Classification of the respondents' (n=246) health literacy levels will be discussed according to the findings and data interpretation of the SHLT. The section will start by discussing the respondents' responses to the questions asked in the SHLT: questions 1–6 (appraisal) and questions 7–10 (understanding) (Reid & Nel, in press). The classification of the respondents' health literacy levels according to the two health literacy competencies (appraisal and understanding) will also be discussed. The relationship between the respondents' academic achievement and health literacy classification will be indicated. Lastly, an overview of the respondents' health literacy level will be discussed.

##### **4.4.1 Sesotho Health Literacy Test Item**

Table 4.4 represents the frequencies and percentages of the respondents' (n=264) responses on the SHLT items.



**Table 4.4: Respondents' (n=264) responses to the SHLT items**

Extract of SHLT item <sup>2</sup>	Frequency	Percentage
<b>1. If I break my leg, I must go to the...</b>		
(a) Clinic	132	50%
<b>(b) Hospital</b>	131	49.6%
(c) I don't know	1	0.4%
<b>2. If my brother who stays with me has TB,<sup>3</sup> I must...</b>		
(a) do nothing	2	0.8%
<b>(b) go to the clinic for TB testing</b>	257	97.4%
(c) I don't know	5	1.9%
<b>3. Look at the sugar measurements. A cup of sugar equals...</b>		
(a) 5 ml	90	34.1%
<b>(b) 250 ml</b>	110	41.7%
(c) I don't know	64	24.2%
<b>4. Your friend is overweight. She does not have money. Appropriate advice you can give her to lose weight is to...</b>		
(a) To go to a gym	150	56.8%
<b>(b) Take long fast walks</b>	106	40.2%
(c) I don't know	8	3.0%

<sup>2</sup> Correct answer to the SHLT item is highlighted in brown.

<sup>3</sup> Tuberculosis

Extract of SHLT item <sup>2</sup>	Frequency	Percentage
<b>5. A person taking a medication for the first time and presents with a skin rash must...</b>		
(a) Finish the medication	84	31.8%
(b) Go back to doctor/clinic	175	66.3%
(c) I don't know	5	1.9%
<b>6. You have been taking pain pills for 7 days and still have pain. Look at the instructions on the pain tablet label and decide what you have to do:</b>		
(a) Take 2 pills	13	4.9%
(b) Go to the doctor/clinic	246	93.2%
(c) I don't know	5	1.9%
<b>7. Look at the instruction on the medication bottle. How many times does Tumelo have to take his multivitamin syrup a day...</b>		
(a) 2 times per day	228	86.4%
(b) 4 times per day	25	9.5%
(c) I don't know	11	4.2%
<b>8. When we read the following word, which option is best associated with the word: TB...</b>		
(a) Cough	252	95.5%
(b) Weight gain	3	1.1%
(c) I don't know	9	3.4%
<b>9. If you take your first dosage of pain medication at 8 o'clock and the nurse tells you to take the pain medication every 6 hours, when can you take your next dosage.....</b>		
(a) 2 o'clock in the afternoon	132	50%
(b) 6 o'clock in the evening	108	40.9%
(c) I don't know	24	9.1%

Extract of SHLT item <sup>2</sup>	Frequency	Percentage
<b>10. Thabo has to give 2,5 ml of cough syrup to his sister. Choose an option that will indicate that there is 2,5 ml of syrup in the syringe....</b>		
<b>(a) Choice A</b>	79	29.9%
<b>(b) Choice B</b>	166	62.9%
<b>(c) I don't know</b>	19	7.2%

The findings in Table 4.4 represent the respondents' (n=264) responses per item. Each question offered three possible options – a, b and c – of which one correct was the answer; the respondents had to choose one option. *Questions 1–6* of the SHLT measure appraisal, which refers to the respondent's ability to assess health information and apply it to make informed decisions (Diviani, 2019:22). *Questions 7–10* measure understanding, that is, respondents' ability to read, comprehend and apply health information, for example, reading and interpreting treatment labels (Busch, Martin, DeWalt *et al.*, 2015:95). The findings show that the majority (43.6%, n=115) of the respondents were classified as possessing moderate health literacy, while 20.8% (n=55) of the respondents were classified as having a low health literacy level, and 35.6% (n=94) were classified with high health literacy.

*Question 1* measured the respondents' ability to understand and differentiate between healthcare facilities that exist within the healthcare system. Only 49.6% of the respondents were able to give the correct response, indicating hospital attendance when fractures are suspected. This is concerning, as only half the respondents are, thus, able to utilise and navigate the healthcare system to improve their health outcomes. It is important for patients diagnosed with chronic conditions to be able manoeuvre through the healthcare system and to know when to access either the hospital or clinic in the case of an emergency. According to Dwinger *et al.* (2014:2777) and Warren-Findlow *et al.* (2014:1834), it is important for a patient diagnosed with a chronic condition to interact with the public healthcare system, to achieve better healthcare management and

outcomes. Alsubaie and Sale (2019:716) conducted a study in Saudi Arabia on the perception of healthcare providers regarding health literacy. The researchers indicate that it is important that patients diagnosed with chronic conditions know how to navigate the healthcare system, to avoid unnecessary hospitalisation and to enhance self-care.

*Question 2* and *question 8* measured the respondents' ability to apply health information related to tuberculosis (TB) and knowing when to go the clinic to seek assistance, respectively. Almost all – 97.4% and 98.5% respectively – of the respondents answered question 2 and question 8 correctly. The results are encouraging, as this finding indicates that respondents may be informed about TB health information and may be able to apply it effectively. The findings are significant, since the WHO identifies South Africa as one of the countries with a particularly high TB burden (Shamu, Kuwanda, Farirai *et al.*, 2019:2). TB is one of the main contributing factors to the high mortality rate of patients diagnosed with HIV (Shamu *et al.*, 2019:2). Patients diagnosed with HIV or diabetes face a risk 11 times higher for developing active TB. TB could be detrimental to patients' immune systems, and the high pill burden might affect patients' adherence to treatment (Berkowitz, Okorie, Goliath *et al.*, 2018:20; McDonald, Vaillancourt, Mishra *et al.*, 2019:373). McDonald *et al.* (2019:373) conducted a study in India that used pictogram pamphlets developed for pharmacists to assist with counselling HIV/TB co-infected patients. The researchers emphasise the importance of patients accessing and understanding health information for their chronic condition, as it plays a big role in adherence. Shamu *et al.* (2019:2) conducted a study in South Africa, in Nkangala in Mpumalanga province, and OR Tambo in the Eastern Cape province. The researchers report that the National Strategic Plan acknowledges the risk posed by TB, and that this realisation is important, as it is a step in the right direction for developing a TB prevention and management strategy (Shamu *et al.*, 2019:2-3). The positive findings of this study indicated how effective the National Strategic Plan has been in TB prevention and management in Setsoto.

*Question 3* measured the respondents' numerical ability, indicated by the ability to interpret measurements and to apply them effectively. Only 41.7% of the respondents gave the correct response. It is cause for concern that so few of the respondents were

able to interpret the measurement correctly, which raises questions about the respondents' ability to comply with a specified treatment plan. Patients diagnosed with chronic conditions are sometimes expected to interpret and understand labels on food and prescriptions. For example, for a patient diagnosed with diabetes, sugar restriction is very important, to prevent uncontrolled glycaemic levels (Packer, 2018:11). Sterling, Safford, Goggins *et al.* (2018:2) conducted a study in America, at the Vanderbilt University Medical Center, on the effect numeracy and health literacy had on patients who were readmitted with heart failure. The researchers highlight how important it is for patients diagnosed with heart failure to understand and interpret numbers, as they are expected to perform daily activities, such weight and blood pressure measurement. In their study, Dunn and Conard (2018:250) emphasise the importance of interpreting numbers for patients diagnosed with chronic conditions. Their example was patients diagnosed with hypertension, and how calculating sodium intake is important to manage their condition.

*Question 4* measured the respondents' ability to make informed decisions. Only 40.2% of the respondents were able to give the correct response related to weight management. This is very concerning, because patients diagnosed with chronic conditions are expected to make informed decisions regarding their health, including lifestyle modifications. Vandenbosch, Van den Broucke, Schinckus *et al.* (2018:351) report that patients diagnosed with diabetes who had poor glycaemic control exhibited poor self-care, which affected their health outcomes. Jansen *et al.* (2018:2) elaborate that patients diagnosed with chronic conditions need to be active participants in their healthcare. In a study conducted by Dunn and Conard (2018:250), they emphasise one of the health literacy components, namely decision-making, and referred to the positive role it plays in the health choices of patients diagnosed with chronic conditions.

*Question 5* inquired into respondents' ability to understand and apply health information, and when to return to clinic when they experienced side effects. The respondents had a fair understanding, as 66.3% gave the correct response. Patients diagnosed with chronic conditions often experience treatment adjustment and changes that affect adherence; this requires them to be knowledgeable about what to do when they experience side effects. Brabers, Jany, Rademakers *et al.* (2017:1-2) conducted a study in the Netherlands on a

Dutch healthcare consumer panel regarding the role health literacy plays on the decision-making of patients diagnosed with chronic conditions. In this study, the researchers highlight the benefits of decision-making, such as active communication with the healthcare provider and possible treatment preferences by the patient. Huang, Shiyabola and Smith (2018:794) conducted a study in Wisconsin, in the United States, on the relationship between health literacy and diabetes and how it relates to adherence and self-management. They found that self-efficacy and treatment management, which would later impact treatment adherence, was important. Yadav, Budhathoki, Paudel *et al.* (2019:359) conducted a study in Nepal regarding patients' understanding of their diagnosis and treatment plans when the patients are discharged from hospital. The researchers discovered that, due to a lack of effective communication and understanding, some patients were unable to understand their treatment plan or possible side effects they might experience, which led to poor adherence.

*Questions 6 and 7* measured the respondents' comprehension and ability to understand instructions. Of the respondents, 93.2% answered Question 6 correctly, and 86.4% Question 7. The findings indicate that the respondents were able to read and follow instructions, which indicates that good treatment adherence may be expected. It is important that a patient diagnosed with a chronic condition knows how to read and understand a prescription label, in order to follow instructions properly. If a patient is unable to understand what is written on the prescription label, it could lead to poor treatment adherence and incorrect treatment intake. Busch *et al.* (2015:1) confirm that it is important that patients who are diagnosed with chronic conditions understand and interpret medication labels correctly. Ngoatle, Mothiba and Themane (2019:12) conducted a study in the Limpopo province of South Africa, and found a positive link between treatment adherence of patients diagnosed with chronic conditions and their understanding of treatment instructions. Kunnemana, Stiggelbouta and Pieterse (2020:418) also emphasise the significance of patients diagnosed with chronic conditions having the ability to interpret treatment instructions. This ability may aid patients in following instructions on how treatment should be taken.

Lastly, *Questions 9 and 10* measured the respondents' ability to understand and interpret numerical information. Half the respondents (50%) answered Question 9 correctly, and 62.9% chose the correct answer to Question 10. The findings indicate that the respondents were not consistently sure how to interpret numerical information. This could pose a challenge, as it may negatively affect the patient's adherence with treatment and health outcomes. Patients diagnosed with chronic conditions are often given instructions on how and when and how much of treatment should be taken. The inability of a patient to understand these instructions may will impact the patient's adherence to treatment and health. Möttus *et al.* (2014:165) conducted a study in Edinburgh, Scotland, among patients diagnosed with chronic conditions, which investigated the link between a patient's health outcomes and health literacy. The researchers found that numeracy is important for patients diagnosed with chronic conditions, to ensure treatment adherence and understanding. Kiddell, Ryan and Kelly (2019:3) conducted a study involving a step-by-step approach to educating patients diagnosed with diabetes. Patients diagnosed with Type 1 diabetes are required to administer insulin and is vital for them to know how to read and measure the correct amount of insulin that should be administered, to ensure controlled glycaemic levels.

## **4.5 ASSOCIATIONS BETWEEN VARIABLES**

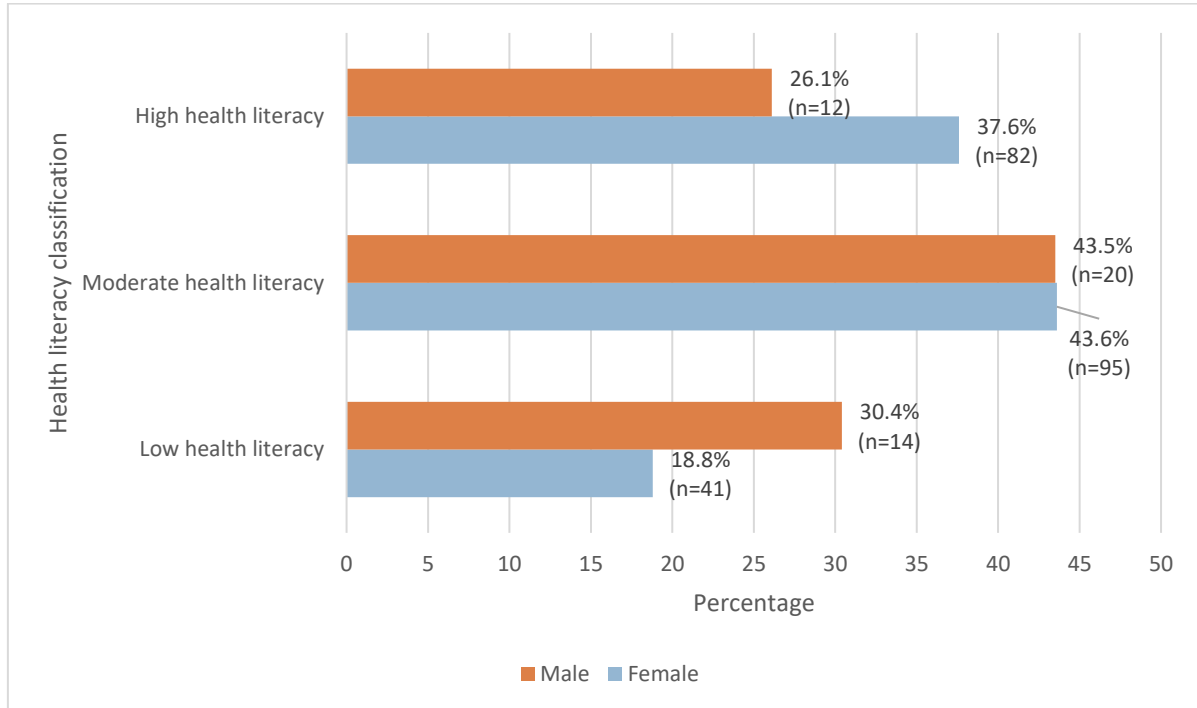
Association refers to a relationship between two or more entities (Polit & Beck, 2017:51). The association between the three health literacy classifications and the variables of the study will be discussed in this section.

### **4.5.1 Demographic data**

The three health literacy classifications and variables that will be investigated for associations are as follows: gender distribution, age distribution, highest academic level, on the one hand, and ability to read due to eyesight problems and classification of chronic conditions, on the other.

#### 4.5.1.1 Gender

Figure 4.4 presents associations between gender (in frequency and percentage) and health literacy.



**Figure 4.4: Association between gender and health literacy**

Women dominated the sample, and this predominance was also reflected in the association between gender and health literacy. The data in Figure 4.4 indicates that 37.6% of the female respondents and 26.1% of the male respondents could be classified with high health literacy levels. In total 43.6% of the female respondents were classified with moderate health literacy, whereas 43.5% of male respondents fell in this classification. Lastly, regarding low health literacy, 18.8% of female respondents and 30.4% of male respondents were categorised in this category. The findings of the study indicate a nonsignificant association ( $p=0.143$ ) between gender and health literacy. Michou, Panagiotakos, Lionis *et al.* (2020:236) conducted a study in Greece around the Attica region to investigate the effects gender and age have on health literacy. Their findings indicate that female respondents have a much higher health literacy level than male respondents. Zhang *et al* (2015:3) also found a statistically significant relationship



between these two variables ( $p=0.002$ ): more female (42.2%) respondents were classified with a higher health literacy level than male (39.5%) respondents. Abdel-Latif and Saad (2019:64) conducted a study in Saudi Arabia on measuring health literacy of the Saudi population. Their finding was as the female respondents had a significantly higher ( $p=0.004$ ) health literacy level, of 18.2%, than the male respondents (14%) that indicates that females may have a higher health literacy level than their male counterparts.

#### 4.5.1.2 Age

Table 4.5 presents findings on the association between age and health literacy.

**Table 4.5: Association between median age and health literacy of respondents**

Health literacy classification	Frequency (n)	Median	Minimum	Maximum
Low health literacy	55	56	24	93
Moderate health literacy	115	43	20	80
High health literacy	94	39	22	78

The respondents who were classified with possessing low health literacy level had a median age of 56 years, while respondents with moderate health literacy had a median age of 43 years. There was a significant association ( $p=0.001$ ) between high health literacy and the age of respondents ( $n=39$ ). Zhang *et al.* (2015:3) conducted a study in Beijing, China, to measure health literacy as it related to knowledge and skill to manage communicable diseases. The study indicated adequate significance ( $p=0.001$ ) of the association, as respondents between the ages of 30 and 39 years were classified with high health literacy, while respondents older than 60 years were classified with low health literacy. Alkhalidi, Al-Jumaili, Alnemer *et al.* (2018:4) also report on a study in Saudi Arabia, to determine the health literacy of the Saudi population using an online system.

The findings of the study found a statistically significant relation ( $p=0.001$ ) between literacy and age, as respondents between the ages of 18 and 40 years were classified with a higher health literacy level than respondents over the age of 40 years. The findings of both studies correlate with that of this study, which also found statistical significance ( $p<0.05$ ) – the average age of respondents classified with high health literacy is around 39 years.

#### 4.5.1.3 Highest academic level

Table 4.6 presents the association between highest academic level (in frequency and percentage) and health literacy.

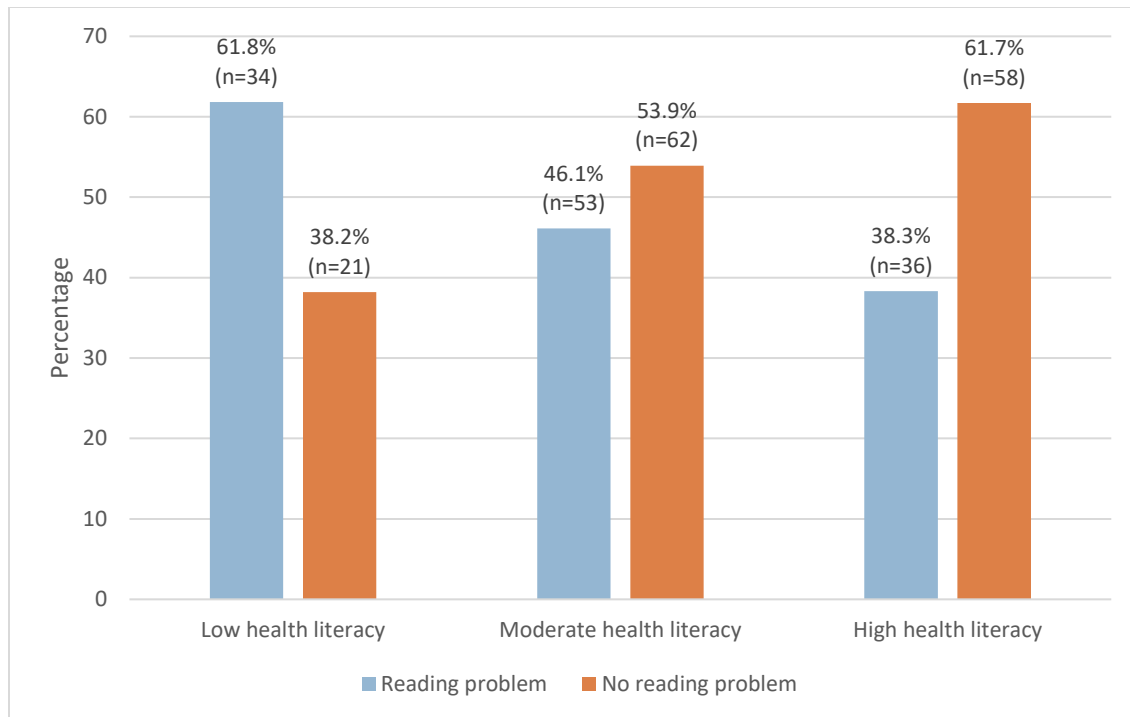
**Table 4.6: Association between highest academic level and health literacy**

Highest academic level	All respondents (n)	Low health literacy	Moderate health literacy	High health literacy
No schooling	(n=13)	12.7% (n=7)	3.5% (n=4)	2.1% (n=2)
Grades 1–8	(n=92)	60% (n=33)	38.3% (n=44)	16% (n=15)
Grades 9–12 (NQF levels 1–4)	(n=150)	27.3% (n=15)	53.9% (n=62)	77.7% (n=73)
Higher certificate (NQF level 5)	(n=2)	0% (n=0)	0.9% (n=1)	1.1% (n=1)
Diploma or advanced certificate (NQF level 6)	(n=7)	0% (n=0)	3.5% (n=4)	3.2% (n=3)
<b>Total respondents</b>	n=264	20%(n=55)	44%(n=115)	36%(n=94)

The data in Table 4.6 indicates that 3.5% of all respondents with a diploma or advanced certificate were classified with moderate health literacy, while 3.2% were classified with high health literacy. Only 1.1% of the respondents who had managed to obtain a higher certificate were classified with high health literacy, and 0.9% had moderate health literacy. In total 27.3% of respondents with Grades 9–12 as their highest grade passed were classified with low health literacy, and 53.9% were classified with moderate health literacy. There was a significant association ( $p=0.001$ ) between health literacy levels and the respondents who had passed Grades 9–12. A considerable proportion of respondents with Grades 1–8 as their highest grade – 60% – were classified with low health literacy, 38.3% of those with grades 1–8 were classified with moderate health literacy and 16% with high health literacy. Lastly, 12.7% of all respondents who were classified with low health literacy reported having no schooling, 3.5% of all respondents with moderate health literacy had had no schooling and 2.1% of the total group and classified with high health literacy had not undergone any schooling. Jansen *et al.* (2018:10) indicate that there is a relationship between educational attainment and health literacy: a higher health literacy level correlates with a higher education level. Todorovic *et al.* (2019:26) conducted a study in the Republic of Srpska, Bosnia and Herzegovina, to assess the health literacy of patients diagnosed with chronic conditions. The findings show that respondents with the highest grade passed (0–8) were classified with moderate (33.3%) health literacy, while respondents (67.6%) who had high school education (Grades 8–12) were classified with a higher health literacy level. The findings of these studies correspond with the findings of this study, namely that higher education/academic levels may be associated with higher health literacy levels.

#### 4.5.1.4 Reading problems

Figure 4.7 presents data on the respondents' reading problems due to eyesight and their health literacy levels (in frequencies and percentages).



**Figure 4.5: Association between reading problems due to eyesight and health literacy**

Although the results did not show any significant association ( $p=0.209$ ) between the respondents' reading problems due to eyesight and health literacy, 61.8% of the respondents were classified as having low health literacy, 46.1% with moderate health literacy and 38.3% with high health literacy. Furthermore, 38.2% of respondents who indicated that they did not experience challenges reading due to eyesight were classified with low health literacy, 53.9% with moderate health literacy and 61.7% with high health literacy. Biasio *et al.* (2015:217–218) conducted a study measuring health literacy skills in 12 regions of Italy. One of the questions they asked was if the respondents needed assistance with reading. The respondents (49.9%) who indicated they had a problem reading were classified with low health literacy. These findings show statistical significance ( $p=0.001$ ) for the relationship between the respondents understanding whether they needed assistance with reading, and health literacy. Marimwe and Dowse (2019:4, 11) conducted a study measuring the health literacy of Xhosa speakers at PHC facilities in South Africa's Eastern Cape province. The respondents were classified as

having high (17.6%) low (65.9%) and moderate (71.4%) health literacy. The findings showed significance ( $p=0.001$ ) between the respondents' ability to read with or without problems and health literacy.

#### 4.5.1.5 Classification of chronic conditions

Table 4.7 presents data on the association between respondents diagnosed with chronic conditions (in frequency and percentage) and health literacy level.

**Table 4.7: Association between chronic conditions and health literacy**

<b>Chronic condition</b>	<b>Low health literacy</b>	<b>Moderate health literacy</b>	<b>High health literacy</b>
<b>Hypertension</b>	45.5% (n=25)	36.5% (n=42)	34% (n=32)
<b>HIV</b>	50.9% (n=28)	68.7% (n=79)	60.6% (n=57)
<b>Asthma</b>	5.5% (n=3)	3.5% (n=4)	3.2% (n=3)
<b>Diabetes</b>	9.1% (n=5)	7.8% (n=9)	10.6% (n=10)
<b>Arthritis</b>	5.4% (n=3)	6.1% (n=7)	3.2% (n=3)
<b>Mental condition (depression, bipolar disorder, schizophrenia)</b>	1.8% (n=1)	2.6% (n=3)	0% (n=0)
<b>Epilepsy</b>	5.5% (n=3)	4.4% (n=5)	1.1% (n=1)
<b>Peptic ulcer</b>	1.8% (n=1)	0% (n=0)	1.1% (n=1)
<b>Heart condition (congestive cardiac failure)</b>	0% (n=0)	0.9% (n=1)	1.1% (n=1)

No conclusive conclusions can be drawn from Table 4.7, except that the three health literacy levels identified through the SHLT are seemingly spread across chronic conditions identified in this study. International literature reports contradictory results related to the association between health literacy levels and specific chronic conditions. Complicating the matter further, is the fact that each health literacy test has its own classification system of health literacy levels.

In a recent study conducted in Beirut, Lebanon, no association ( $p > 0.05$ ) was found between patients diagnosed with chronic conditions and health literacy (Fadda *et al.*, 2018: 264–265). Hickey *et al.* (2015:431) conducted a study in New York on the health literacy of patients with implanted pacemakers who had also been diagnosed with a comorbidity, such as hypertension, diabetes, and hyperlipidaemia. That specific study found no association ( $p > 0.005$ ) between respondents diagnosed with hypertension and health literacy

Stonbraker, Smaldone, Luft *et al.* (2018:5-6) conducted a study in PHC facilities in the Dominican Republic to measure the association between health literacy of people living with HIV, and their knowledge of the disease. This study showed a significant ( $p < 0.005$ ) association between patients classified with a higher health literacy level and patients diagnosed with HIV. Another study, conducted in Iran (Chollou, Gaffari-fam, Babazadeh *et al.*, 2020:1688), found a positive correlation ( $p < 0.005$ ) between health literacy, glycaemic levels and self-care of patients diagnosed with diabetes. In Germany, a study measured health literacy in relation to adherence to treatment and how that affected health outcomes. The findings of that study indicate no association between arthritis and health literacy ( $p = 0.616$ ) (Kuipers, Koller, Zeman *et al.* 2019:78).

#### **4.5.2 Appraisal and understanding items of the Sesotho Health Literacy Test**

Questions 1–6 of the SHLT the respondents' ability to appraise information.

##### **4.5.2.1 Appraisal**

Table 4.8 presents responses to questions measuring appraisal in the SHLT that are associated with health literacy level of respondents ( $n = 264$ ).

**Table 4.8: Questions measuring appraisal in the SHLT associated with health literacy level of respondents (n=264)**

Appraisal (Questions 1–6)	Median	Frequency (n)	Minimum	Maximum
Low health literacy	3	55	1	4
Moderate health literacy	4	115	2	5
High health literacy	5	94	4	6

The findings in Table 4.8 indicate that respondents classified with low health literacy (n=55) had a median score of 3, with the minimum and maximum values ranging from 1 to 4. Respondents classified with moderate health literacy (n=115) had a median score of 4, with minimum and maximum values ranging from 2 to 5. In turn, respondents classified with high health literacy (n=94) had a median score of 5, with minimum and maximum values ranging from 4 to 6. The findings of this study show a significant association ( $p=0.001$ ) between appraisal and the various health literacy levels. Jansen *et al.* (2018:5, 10) conducted a study in general health practices in the Netherlands, and link health literacy to a patient’s socioeconomic status and education. The findings from that study suggest that a high health literacy level is associated with a high education level and ability to appraise information ( $p=0.001$ ). O’Meara, Williams, Ames *et al.* (2019:433–434) conducted a study in Australia to determine the association between health literacy and appraisal of diabetes information and found a positive association ( $p=0.001$ ) between appraisal of health information and health literacy.

#### 4.5.2.2 Understanding

Table 4.9 presents answers to questions in the SHLT measuring understanding, and their association with health literacy levels of respondents (n=264).

**Table 4.9: Questions measuring understanding in the SHLT associated with health literacy levels of respondents (n=264)**

Understanding (Questions 7–10)	Median	Frequency (n)	Minimum	Maximum
Low health literacy	2	55	0	3
Moderate health literacy	3	115	1	4
High health literacy	4	94	2	4

The findings in Table 4.9 indicate that respondents classified with low health literacy (n=55) had a median score of 2, with minimum and maximum values of 0 and 3 respectively. Respondents classified with moderate health literacy (n=115) had a median score of 3 with minimum and maximum values of 1 and 4 respectively. The findings indicate that there may be an association between health literacy and understanding of health literacy items. Lastly, respondents classified with high health literacy (n=94) had a median score of 4, with minimum and maximum values of 2 and 4. An association ( $p=0.001$ ) was found between health literacy level and items in the SHLT that determine understanding of health information. Singh, Acharya, Kamath *et al.* (2018:2) conducted a study in India among patients diagnosed with diabetes, by measuring their understanding of how treatment should be administered. The findings suggest that patients classified as possessing a high health literacy level performed better at understanding health information ( $p=0.001$ ). Dahl, Andersen, Urstad *et al.* (2020:45) measured health literacy among Norwegian kidney transplant recipients who had also been diagnosed with comorbidities. They found a positive correlation ( $p=0.001$ ) between understanding of health information and health literacy levels.

#### **4.6 CONCLUSION**

This chapter conducted an in-depth analytical analysis of the data that had been collected. A summary of the statistical tests used to analyse the data presented in the



chapter was provided. The demographic data of the respondents and their responses to the SHLT items were also discussed. The following associations between health literacy levels and variables were outlined: demographic data and appraisal and understanding of the SHLT items. Chapter 5 will present a summary of the findings and provide related recommendations.

# **CHAPTER 5: SUMMARY OF RESEARCH FINDINGS, RECOMMENDATIONS, LIMITATIONS, VALUE, AND CONCLUSION OF STUDY**

## **5.1 INTRODUCTION**

The objective of the study was to establish associations between demographic factors of chronic patients attending public health facilities in Setsoto subdistrict, and items of the SHLT that reflect appraisal and understanding. Chapter 5 will present a summary of the research findings according to the two sections of the SHLT. Section A refers to demographic data, while the discussion relating to Section B will summarise items of the SHLT. Recommendations emanating from and limitations of the study will be reported. The value and conclusion of the study will also be provided, as will reflective remarks by the researcher.

## **5.2 SUMMARY OF RESEARCH FINDINGS**

### **5.2.1 Section A: Demographic data**

The findings indicates that 82,6% (n=216) of the respondents who participated in the study were female, with 17.4% (n=46) being male respondents. The median age of the respondents was 43 years. Regarding respondents' education level, 56.8% (n=150) had obtained a Grade 9–12 education, 34.9% (n=92) had completed Grades 1–8, 4.9% (n=13) had not undergone any schooling, and 3.4% (n=9) had obtained a higher qualification than Grade 12. More than half of the respondents (53.4%, n=141) indicated that they experienced reading problems due to poor eyesight. The most common chronic conditions amongst respondents were HIV (62.1%, n=164) and hypertension (37.5%, n=99).

### **5.2.2 Section B: Items of the Sesotho Health Literacy Test**

The findings indicate 35.6% (n=94) of respondents scored high literacy levels; 43.6% (n=115) scored moderate health literacy levels and 20.8% (n=55) low health literacy levels on the SHLT.

No association ( $p=0.143$ ) was found between health literacy level and gender. An association ( $p=0.001$ ) was established between high health literacy levels and age. An association ( $p=0.001$ ) exists between high health literacy levels and respondents who had received schooling up to Grades 9–12. No association ( $p=0.209$ ) was found between health literacy levels and respondents' ability to read as influenced by poor eyesight. An association ( $p=0.001$ ) was established between health literacy level and items in the SHLT reflecting appraisal of health information and understanding of health information.

### **5.3 RECOMMENDATIONS**

The recommendations according to findings of the study are discussed in Table 5.1.

**Table 5.1: Recommendations of the study**

Stakeholders	Recommendation
<p><b>Department of Health, Department of Education and HCPs</b></p>	<ul style="list-style-type: none"> <li>• The DoH should present an annual health literacy workshop for HCPs on the importance of health literacy and train them on implementing strategies to improve patient management according to patients' health literacy levels.</li> <li>• The DoH and institutions of higher education should develop training material applicable to students in the healthcare fraternity to introduce the concept health literacy. This may help prepare students on how to approach and manage patients diagnosed with chronic conditions according to their health literacy level.</li> <li>• The DoH training department in the Free State should develop educational material appropriate to the context and health literacy level of the patients.</li> <li>• The Free State DoH should implement the SHLT at PHC facilities as a routine health literacy assessment. The test should be conducted by HCPs in observation areas to assess and classify patients according to their health literacy level. The HCP should then counsel and manage patients according to the findings of the SHLT and develop comprehensive management plans. This may improve patient management and health outcomes and assist the Free State DoH to alleviate pressure on the healthcare system, by decreasing treatment defaulters (HIV), high hospitalisation and death rate in the province.</li> </ul>

	<ul style="list-style-type: none"> <li>• The Department of Education (DoE) has a programme, ABET (Adult Basic Education and Training), for adults over the age of 18 who wish to continue their schooling, even though they were unable pass matric through the normal schooling system. Continued education may help patients learn basic numeracy skills that will assist with treatment administration. Health literacy is linked to education attainment and the more educated patients are, the higher their health literacy levels and health outcomes may be.</li> </ul>
<p><b>Patients diagnosed with chronic conditions</b></p>	<ul style="list-style-type: none"> <li>• Patients diagnosed with chronic conditions should be assessed with the SHLT on admission at PHC facilities to determine their health literacy level.</li> <li>• The results of the SHLT may assist HCPs to choose educational material that is appropriate in the context and for the health literacy level of the patient, which may positively impact the patient’s understanding and appraisal of health information. This may empower patients to make informed decisions, take responsibility for their health and, ultimately, improve their health outcomes.</li> <li>• HCPs should conduct eye tests on admission for patients diagnosed with chronic conditions, to identify patients who have difficulty reading due to poor eyesight. This may prompt HCPs to refer patients to an optometrist for further management. It may also assist patients with reading and interpreting treatment instructions correctly, which may lead to better treatment adherence.</li> </ul>

<b>Future research</b>	<p>The SHLT was developed to assess health literacy of Sesotho home-language patients diagnosed with chronic conditions, but there is no guideline for HCPs on how to manage patients according to their health literacy level.</p> <ul style="list-style-type: none"><li>• The development of a guideline may guide HCPs on effectively managing patients according to their health literacy level.</li><li>• The guideline can be divided according to health literacy classification, which may guide the HCP to explain treatment administration, the importance of adherence to treatment, and how to navigate the different healthcare systems to improve health outcomes.</li></ul>
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#### **5.4 LIMITATIONS OF THE STUDY**

The following limitations were identified by the researcher. The fear by patients who participated in the study that participation may increase their waiting time at PHC facilities, negatively impacted the number of respondents that could be recruited (n=264, instead of the anticipated 300 respondents). The number of respondents was, nevertheless, sufficient to provide researchers with an overview of the health literacy level of Sesotho home-language patients attending PHC facilities in the identified district. Another factor that presents itself as a limitation in the study was, the misinterpretation of question 8 in the pilot study by the fieldworkers that resulted in the exclusion of data in the main study. The fieldworkers were however trained on how to correctly interpret question 8 to ensure reliable collection of data in the main study.

#### **5.5 VALUE OF THE STUDY**

The outcomes of the research will be communicated to all the relevant stakeholders in the study. The DoH will be able to develop a science-based and comprehensive guideline designed for the Free State, so that HCPs can manage patients diagnosed with chronic conditions according to patients' health literacy classification. PHC facilities will be able to implement the SHLT and assess patients' health literacy level and ensure efforts are taken to empower them. The HCPs will have a more structured and standardised guideline on how to manage patients effectively. Patients diagnosed with chronic conditions will be provided with a more evidence-based management plan that will help improve their quality of care and life. Further research can be conducted with the SHLT on Sesotho-speaking patients in a different context.

#### **5.6 REFLECTION ON CONCLUSION OF THE STUDY**

This journey was very demanding, both personally and academically, but it was a growth experience for the researcher. Chapter 1 was the beginning of the journey – here the

researcher learned how to plan and think critically. Chapter 2 was by far the hardest chapter to write. The researcher had to learn how to read and write constructively and consistently. This application improved the way the researcher structured and drafted reports at work. Chapter 3 was an enjoyable chapter to write, although collecting data was physically draining, due to the need to commute to different healthcare facilities. It was a great experience watching the study gain momentum and interacting with the respondents. Chapter 4 taught the researcher how to critically look at data and analyse it so that it makes sense for the reader. The researcher learned how to engage with different stakeholders on different management levels and gained experience on how to manage a small project. The researcher enjoyed this process and would like to continue on this journey.

## **5.7 CONCLUSION**

The aim of the study was to assess the health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free-State province. Assessing patients' health literacy in the Free State using the SHLT will help identify patients' health literacy level. Knowing patients' health literacy could empower patients and equip HCPs to manage patients according to their health literacy level and assist with improving patients' health outcomes.

*Literacy unlocks the door to learning throughout life, is essential to development and health and opens the way for democratic participation and active citizenship.*

- Kofi Annan



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## **ADDENDUM A1: SESOTHO HEALTH LITERACY TEST (ENGLISH VERSION)**

Only the Sesotho version (Addendum A2) will be used by the respondents. The test is a direct translation from the Sesotho version and grammar should not be intensely scrutinised. The English translation is for the benefit of the Evaluation and HSREC committees only.

### **Section A**

#### **Demographic data:**

1.1 Date: (yyyy/mm/dd)		
1.2 Name of public health facility:		
1.3 Gender: Female/Male		
1.4 Age:		
1.5 Highest grade passed:		
1.6 If Gr. 12 is the highest grade passed name the institution and the type of degree/certificate obtained		
1.7 Type of chronic disease(s) currently diagnosed with		
1.8 Do you have a problem reading because you cannot see	Yes	No

## Section B

### SHLT Questionnaire:

1. If I break my leg, I must go to the
  - a) Clinic
  - b) Hospital
  - c) I don't know
  
2. If my brother who stays with me has TB, I must
  - a) do nothing
  - b) go to the clinic for TB testing
  - c) I don't know



= 1 standard cup

Note: 1 teaspoon of sugar = 5 ml or 4.2 g

1 cup of sugar = 250 ml or 212 g

3. Look at the sugar measurements. A cup of sugar equals:
  - a) 5 ml
  - b) 250 ml
  - c) I don't know

4. Your friend is overweight. She does not have money. Appropriate advice you can give her to lose weight is to
- a) Go to a gym
  - b) Take long fast walks
  - c) I don't know
5. A person taking a medication for the first time and presents with a skin rash must
- a) Finish the medication
  - b) Go back to doctor/clinic
  - c) I don't know

**PAIN TABLETS**

Per Tablet: paracetamol 500 mg;

Potassium sorbate 0.12% m/m Sugar free

**Warning:** Do not use continuously for longer than 7 days (adults) or 5 days (children) without consulting your doctor. Store below 25° C in a well-closed container protected from light and air.

**KEEP OUT OF REACH OF CHILDREN**

6. You have been taking pain pills for 7 days and still have pain. Look at the instructions on the pain tablet label and decide what you have to do:
- a) Take 2 pills
  - b) Go to the doctor/clinic
  - c) I don't know

BEA HOLE LE BANA · MAING

ANELE EZINGANELI · BEKA KUDE EBANTWANENI · KEEP OUT OF CHILDREN'S REACH

*It is dangerous to exceed the stated dose.*

Hoef/Qty	Produk/Product		
<b>MULTI-VITAMIN SYRUP</b>			
2	Teaspoons	2	TIMES PER DAY
		MAKGETLO KA LETSATSI	
NA ETES / AFTER MEALS / MORAHO HA DIJO			
Lot/Batch:		Verval/Expiry:	
NAME: Tumelo		No:	
<b>PRIMARY HEALTH CARE</b>			
FREE STATE			

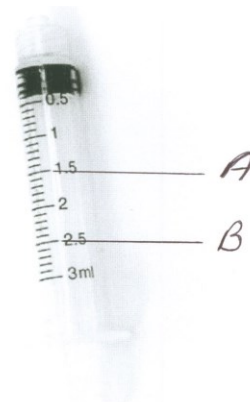
7. Look at the instruction on medication bottle. How many times does Tumelo have to take his multi vitamin syrup a day?
- a) 2 times per day
  - b) 4 times per day
  - c) I don't know

8. When we read the following word, which option is best associated with the word:  
TB

- a) Cough
- b) Weight gain
- c) I don't know

9. If you take your first dosage of pain medication at 8 o'clock and the nurse tells you to take the pain medication every 6 hours, when can you take your next dosage?

- a) 2 o'clock in the afternoon
- b) 6 o'clock in the evening
- c) I don't know



10. Thabo has to give 2,5ml of cough syrup to his sister. Choose an option that will indicate that there is 2,5ml of syrup in the syringe

- a) Choice A
- b) Choice B
- c) I don't know

Fieldworkers' Initials:

## ADDENDUM A2: SESOTHO HEALTH LITERACY TEST (SESOTHO VERSION)

### Karolo A

#### Data ya babaptsi:

1.1 Letsatsi: (yyyy/mm/dd)		
1.2 Lebitso la setsi sa tlhokomelo ea Sechaba:		
1.3 Tekano: Mosali/Monna		
1.4 Lilemo:		
1.5 Grade eo felletseng ho yona:		
1.6 Ha e ba o na le lengolo la degree/certificate ngola mofuta wa le ngolo le sebaka mo o le fumaneg teng		
1.7 Mofuta wa lefu le sa foleng		
1.8 O na le bothatha ba ho bala hobane o sa bone	Ee	Che

### SHLT Karolo B:

#### Di putso:

1. Ha nka robeha leoto, ke tlameha ho ya
  - a) Tlilinking
  - b) Sepetlele
  - c) Ha ke tsebe



2. Ha abuti wa ka ya dulang le nna a na le TB, ke tlameha ho

- a) Sa etse letho
- b) Ho ya tlilining bakeng sa diteko tsa TB
- c) Ha ke tsebe



= 1 standard cup

Note: 1 teaspoon of sugar = 5 ml or 4.2 g

cup of sugar = 250 ml or 212 g

3. Sheba ditekanyetso tsa tswekere. Kopi ya tswekere e lekana le

- a) 5 ml
- b) 250 ml
- c) Ha ke tsebe

4. Motswalle wa hao o nonne. Ha a na tjehelete. Keletso e tshwanelehang eo o ka mo fang yona ho theola boima ba mmele ke

- a) Ho lefa ho ya boikwetlisong
- b) Ho tsamaya ka potlako nako e telele
- c) Ha ke tsebe

5. Motho a nwang moriana lekgetlo la pele ha a ba le lekgopo o tlameha ho

- a) Ho qeta moriana
- a) Ho kgutlela ngakeng/ tlilining
- b) Ha ke tsebe

**PAIN TABLETS**

Per Tablet: paracetamol 500 mg;

Potassium sorbate 0.12% m/m Sugar free

**Warning:** Do not use continuously for longer than 7 days (adults) or 5 days (children) without consulting your doctor. Store below 25° C in a well-closed container protected from light and air.

**KEEP OUT OF REACH OF CHILDREN**

6. O nwele dipilisi tsa mahlaba matsatsi a 7 empa o ntse o opelwa. Sheba ditaelo tseba mme o etse qeto ka seo o tlamehang ho se etsa
- a) Enwa dipilisi tse 2
  - b) E ya ngakeng/tliliking
  - c) Ha ke tsebe

BEA HOLE LE BANA · MAING

ANELE EZINGANELI · BEKA KUDE EBANTWANENI · KEEP OUT OF CHILDREN'S REACH

*It is dangerous to exceed the stated dose.*

Hoef/Qty	Produk/Product
<b>MULTI-VITAMIN SYRUP</b>	
2	Teaspoons
2	TIMES PER DAY
	MAKGETLO KA LETSATSI
NA ETES / AFTER MEALS / MORAHO HA DIJO	
Lot/Batch:	Verval/Expiry:
NAME:	No:
Tumelo	
<b>PRIMARY HEALTH CARE</b>	
FREE STATE	

7. Sheba ditaelo tse botlolong ya moriana. Tumelo o tlameha ho nwa moriana wa di-aha mmele ha kae ka letsatsi?

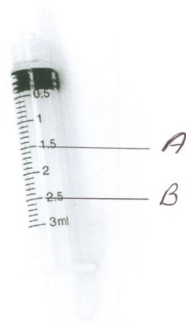
- a) 2 ka letsatsi
- b) 4 ka letsatsi
- c) Ha ke tsebe

8. Ha re bala mantswe a latelang, kgetho nyallanang le lentswe leo ke e fe: TB

- a) Ho hohlola
- b) Ho eketseha mmele
- c) Ha ke tsebe

9. Ha o nwa tekanyetso ya pele ya moriana wa mahlaba ka 8 hoseng mme mooki a o bollela ho nwa moriana wa mahlaba ka mora hora tse 6, o ka nwa neng tekanyetso e latelang?

- a) Hora ya bobedi motshehare
- b) Hora ya botshelela mantsiboya
- c) Ha ke tsebe



10 Thabo o tlameha ho nwesa kgaitsemi ya hae moriana wa sefuba wa 2.5ml. Etsa kgetho ho bontsha 2.5ml sepeiting

- a) Kgetho A
- b) Kgetho B
- c) Ha ke tsebe

Di initiale tsa Basebetsi ba Motseng:

## **ADDENDUM B: LETTER TO THE HEAD OF DEPARTMENT**

THE HEAD OF THE FREE STATE DEPARTMENT OF HEALTH

2938 Khabane Str.

Bohlokong

Bethelehem

9702

Dear Dr Motau,

### **Re: request to collect data in public health facilities in Setsoto subdistrict**

With this letter I hereby request permission to conduct a study in Setsoto subdistrict. The aim of the study is to assess the health literacy level of Sesotho speaking patients diagnosed with chronic conditions attending Public health facilities. These public health facilities are: Clocolan PHC, Hlohlokwane PHC, Kokelong PHC, Mamello CHC, Meqheleng PHC, Masebabtso PHC, Matwabeng PHC, Noghtnagel PHC, OR Tambo PHC, Phomolong PHC, Senekal PHC and Soetwater PHC.

The researcher will train and employ fieldworkers to collect data at the facilities respectively. Staff members will not be disturbed or distracted from their daily duties. The questionnaire which will be completed by the fieldworker and researcher, will take 10 minutes per respondent. The findings of the study will be submitted to the University of the Free State, Faculty of Health Science, School of Nursing as a requirement towards the completion of a Masters of Nursing.

The findings of the study will also be shared with The Free State Department of Health with the hope that it will assist with improving priority indicators. Please find the attached procedure of the study.

Kind regards,

MS Mofokeng

## **ADDENDUM C1: INFORMATION LEAFLET PROVIDED TO THE RESPONDENTS**

### **STUDY TITLE: HEALTH LITERACY OF SESOTHO-SPEAKING PATIENTS DIAGNOSED WITH CHRONIC CONDITIONS IN SETSOTO, FREE STATE PROVINCE**

Hello:

I, Mita Mofokeng, am doing research on assessing the health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free State province. Research is just the process to learn and answer the question. The aim of the study is to assess patients diagnosed with chronic conditions' health literacy using the Sesotho health literacy test.

**Invitation to participate:** We are asking you to freely participate in the research study.

**What is involved in the study:** You will be expected to answer a questionnaire which will be completed by a trained fieldworker. The questionnaire will take approximately 10 minutes to complete. 300 respondents across the Sestoto subdistrict attending a public health facility will be asked to participate in the study.

**Risks:** This study will not hurt you.

**Benefits:** The collected data will help towards improving patient education and management. For partaking in this study you will not be paid.

**Participation is out of your own fee will:** It is within your right to remove yourself from the study at any given time. You will not be judged or ridiculed from stopping the study.

**Confidentiality:** Efforts will be made to keep personal information confidential. Personal information may be disclosed if required by law. The collected data will be shared with relevant parties involved in the study such as the University of the Free State, Faculty of Health Science and The Free State Department of Health.

**Contact details of researcher(s)**-for further information/reporting of study-related harmful events contact the researcher MS Mofokeng on 0794832964.

**Contact details of HSREC Secretariat and Chair**—for reporting of complaints/problems please call 051 401 7794.

## **ADDENDUM C2: LETHATHAMO LA TLAHISOLESSEDING LA FANOANG HO BA ARABELITSOENG**

**SEHLOOHO SA THUTO: BOPHELO BO BOTLE BA HO BALA LE HO NGOLA HO BAKULI BA BUANG SESOTHO BA FUMANOANG BA E-NA LE MAEMO A SA FOLENG SETEREKENG SA SETSOTO, PROFISENG YA FREISTATA.**

Dumela

Nna Mita Mofokeng ke etsa diphuputso ka ho fumana maikutlo a ba bakudi ba buwang Sesotho bakeng sa mafu a tshwereng motho ka nako e telele, Setsoto profiseng ya Freistata. Phuputso ena empa e le taba feela ya ho ithuta le ho phopholesta bakudi ba tshwereng ke mafu a nako e tele, re sebedisa thuto le teko ya mafu ao ka puo ya Sesotho.

**Memo ya ho nka karolo:** Re o mema hore le wena o ithaope ho nka karolo diphuputsong tsena.

**Dikateng tsa thuto ena:** O lebelletswe ho araba dipotso tse tla hlophiswa ke mosebelesti ya kwetlisitsweng. Dipotso tsena di tla nka bonyane metsosto e 10. Ho tla thaothwa bankakarolo ba kabang 300 sedikeng sa Setsoto ha ba tlileng thuthong ena.

**Kotsi:** thuto ena ha ena kotsi.

**Moputso:** Lintlha di tla thusa ho ntlafasta thuto ya bakudi le tsamaisano ya bona. Ha o na moputso o tla ho fumana ha o nka karolo.

**Ha o ya tlangwa ho nka karolo:** O ka nna wa ikgula ho nkeng karolo ha hao neng kapa neng. Ha o kake wa tadingwa hampe kapa wa songwa.

**Lekunutu:** Mehato e tla nkuwa ho etsa lelesedi lena lekunutu. Lekunutu le phephehetseng ha le kake la nefefatswa lekunutu la hao le ka hlahiswa feela ha le batlwa ke ba molao. Pokelletso ena ya hao e ka arolelwa feela le ba ithutang ka taba tsena University ya Freistata lefapheng la bophelo la Freistata.



**Lintlha tsa piusano:** Bakeng sa tlhahiso le eketsehileng ea liketsahalo tse bohloko tse amanang le thuto ikopanye le mofupusti MS Mofokeng ho 079 483 2964.

**Lintlha tsa puisano tsa Secretait ya HSREC** le lihlahisoa: Bakeng sa ho tlaleha litlebo/mathata ka kopa, letsetsa 051 401 7794

## ADDENDEM D1: INFORMED CONSENT FORM

You have been asked to participate in a research study entitled health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free State province

You have been informed about the study by .....

You may call MS Mofokeng on 0794832964 at any time if you have questions about the research or if you are injured as a result of the research.

You may call the Secretariat of the Health Sciences Research Ethics Committee, UFS at telephone number (051) 4017794/5 if you have questions about your rights as a research subject. Your participation in this research is out of your own free will, and you will not be punished or lose any benefits if you refuse to participate or decide to stop your participation.

If you agree to participate, you will be given a signed copy of this document as well as the participant information sheet, which is a written summary of the research.

*The research study, including the above information has been verbally described to me. I understand what my involvement in the study means and I freely agree to participate.*

\_\_\_\_\_  
Signature of Respondent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Witness

\_\_\_\_\_  
Date

*(Where applicable)*

## ADDENDUM D2: FOROMO YA TUMELLANO

O ile wa kotjwa ho nka karollo diphuputsong tsa sehloho sa phuputso ya mafu a tshwereng batho nako e telele ba buwang puo ya Sesotho Setsoto Provseng ya Freistata.

O bolelletswe ka thuto ena ke.....

O ka nna wa ikopanya le MS Mofokeng mona 079 483 2964 neng kapa neng ha o ena le dipotso kapa o tswile kotsi ka baka la phuputso ena.

O ka nna wa ikopanya le mongodi wa tsa bophelo le mohlale a phuputso le boitswaro komiting ya UFS nomorong ena (051) 4017794/5 ho o ena le dipotso ka ditokelo tsa hao jwaleka ya fupuditsweng. Ho nka karolo diphuputsweng tsa ha se qobella, mme ha o kake wa qoswa kapa wa lahlehelwa ke maemo ha o sa nke karolo. O tla newa tokomane e tekenuweng e le karolo ya yona le lengolo la tlhahiso leseding e leng kakaresto ya phuputso ena.

Thuto ena ya diphuputso ke e hlaloseditswe ka molomo ke a utlwisisa hore ho nka karolo ha ka mona thutong ena ha ka qobellwa me ke dumetse ho nka karolo.

---

Pontšo ya monkakarolo

---

Letsatsi

---

Pontšo ya paki

---

Letsatsi

## **ADDENDUM E: GUIDELINE FOR COMPLETION OF SHLT**

*Before the interview the fieldworker must first obtain informed consent and provide the respondent with an information leaflet.*

- This is a step by step guide which will assist with the completion of the SHLT
- The SHLT consists of two sections. Section A, demographic data and Section B the questionnaire.
- The fieldworker must read each question out loud to the respondent and is not allowed to rephrase questions at any stage during the interview.
- Each question consists of three options a (true), b (False) and c (I don't know). Every answer is important even an "I don't know" will help contribute towards improving the patients' health outcomes.
- The fieldworker must circle each answer per question as per respondents' answer.

### **Section A**

#### **Demographic data:**

*Date (yyyy/mm/dd):* Write the date on which the assessment is completed. Start with the year, month then day.

*Name of Primary healthcare facility:* Write the name of the clinic where the assessment is conducted

*Gender:* Please select male or female and write it in the indicated field.

*Age:* Ask the respondent what their current age is and write it in the indicated field.

*Highest grade completed:* Ask the respondent what the highest grade passed is.

If Gr 12 is the highest grade passed what degree/certificate was obtained: Ask the respondent to name the postgraduate degree/certificate obtained, please write it in full and also indicated where (institution) it was obtained.

*Type of chronic condition:* Ask the respondent to list the type of chronic condition he/she has been diagnosed with.

*Do you have a problem reading because you cannot see:* Ask the respondent if he or she uses glasses to help see better.

## **Section B**

### **SHLT Questionnaire:**

1. *If I break my leg, I must go to the?* With this question we would like to assess the respondent knowledge on what to do in case of an emergency and the availability of different healthcare facilities. Read the options to the respondent and circle either a, b or c.
  - a) Clinic
  - b) Hospital
  - c) I don't know
  
2. *If my brother who stays with me has TB, I must?* With this question we want to assess the respondents' knowledge regarding TB. Read the options to the respondent and circle either a, b or c.
  - a) do nothing
  - b) go to the clinic for TB testing
  - c) I don't know
  
3. *Look at the sugar measurements. A cup of sugar equals?* With this question we would like to assess the respondents' ability to interpret the picture and select the correct measurement. Show the respondents the picture, do not read the words on the picture, and do not translate words of the picture into Sesotho. Read the options to the respondent and circle either a, b or c.

- a) 5 ml
- b) 250 ml
- c) I don't know

4. *Your friend is overweight. She does not have money. Appropriate advice you can give her to lose weight is to?* With this question we would like to assess the respondents' knowledge on health and nutrition. Read the options to the respondent and circle either a, b or c.

- a) To go to a gym
- b) Take long fast walks
- c) I don't know

5. *A person taking a medication for the first time and presents with a skin rash must?* With this question we would like to assess the respondents' knowledge regarding health information on treatment side effects. Read the options to the respondent and circle either a, b or c.

- a) Finish the medication
- b) Go back to doctor/clinic
- c) I don't know

6. You have been taking pain pills for 7 days and still have pain. Look at the instructions on the pain tablet label and decide what you have to do? With this question we would like to assess the respondents' ability to read and interpret instructions as indicated in the picture. Show the respondent the picture, do not read the words on the picture and do not translate the words on the picture into Sesotho. Read the options to the respondent and circle either a, b or c.

- a) Take 2 pills
- b) Go to the doctor/clinic

c) I don't know

7. *Look at the instruction on medication bottle. How many times does Tumelo have to take his multi vitamin syrup a day? With this question we would like to assess the respondents' ability to read and interpret instructions indicated in the picture. Do not read the words on the picture and do not translate words on the picture into Sesotho. Show the respondent the picture and read the possible answers and circle either a, b or c.*

a) 2 times per day

b) 4 times per day

c) I don't know

8. *When we read the following word, which option is best associated with the word: TB? With this question we would like to assess the respondents' knowledge on TB. Read the possible answers to the respondent and circle either a, b or c.*

a) Cough

b) Weight gain

c) I don't know

9. *If you take your first dosage of pain medication at 8 o'clock and the nurse tells you to take the pain medication every 6 hours, when can you take your next dosage? With this question we would like to assess the respondents' ability to follow instructions and apply them effectively. Read the possible answers to the respondent and circle either a, b or c.*

a) 2 o'clock in the afternoon

b) 6 o'clock in the evening

c) I don't know

10. Thabo has to give 2,5ml of cough syrup to his sister. Choose an option that will indicate that there is 2,5ml of syrup in the syringe? With this question we would like to assess the respondent's ability to read and interpret the picture. Do not read the words on the picture and do not translate words on the picture into Sesotho. Show the respondent the picture and read the possible answers then either a, b or c.

- a) Choice A
- b) Choice B
- c) I don't know



# ADDENDUM F: APPROVAL HEALTH SCIENCES RESEARCH AND ETHICS COMMITTEE

UNIVERSITY OF THE  
FREE STATE  
UNIVERSITEIT VAN DIE  
VRYSTAAT  
YUNIVESITHI YA  
FREISTATA



UFS·UV  
HEALTH SCIENCES  
GESONDHEIDSWETENSKAPPE

Health Sciences Research Ethics Committee

23-Jul-2019

Dear **Ms Mita Mofokeng** Ethics Clearance: **Health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free State Province**

Principal Investigator: **Ms Mita Mofokeng**

Department: **School of Nursing Department (Bloemfontein Campus) APPLICATION APPROVED**

Please ensure that you read the whole document

With reference to your application for ethical clearance with the Faculty of Health Sciences, I am pleased to inform you on behalf of the Health Sciences Research Ethics Committee that you have been granted ethical clearance for your project.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2019/0478/3007**

The ethical clearance number is valid for research conducted for one year from issuance. Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the HSREC for approval to ensure we are kept up to date with your progress and any ethical implications that may arise. This includes any serious adverse events and/or termination of the study.

A progress report should be submitted within one year of approval, and annually for long term studies. A final report should be submitted at the completion of the study.

The HSREC functions in compliance with, but not limited to, the following documents and guidelines: The SA National Health Act. No. 61 of 2003; Ethics in Health Research: Principles, Structures and Processes (2015); SA GCP(2006); Declaration of Helsinki; The Belmont Report; The US Office of Human Research Protections 45 CFR 461 (for non-exempt research with human participants conducted or supported by the US Department of Health and Human Services- (HHS), 21 CFR 50, 21 CFR 56; CIOMS; ICH-GCP-E6 Sections 1-4; The International Conference on Harmonization and Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH Tripartite), Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines, Constitution of the HSREC of the Faculty of Health Sciences.

For any questions or concerns, please feel free to contact HSREC Administration: 051-4017794/5 or email [EthicsFHS@ufs.ac.za](mailto:EthicsFHS@ufs.ac.za).

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours Sincerely

Dr. SM Le Grange

Chair : Health Sciences Research Ethics Committee

Health Sciences Research Ethics Committee

Office of the Dean: Health Sciences

T: +27 (0)51 401 7795/7794 | E: [ethicsfhs@ufs.ac.za](mailto:ethicsfhs@ufs.ac.za)

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# ADDENDUM G: APPROVAL FROM THE FREE STATE DEPARTMENT OF HEALTH



**health**  
Department of  
Health  
FREE STATE PROVINCE

12 July 2019

Ms. M Mofokeng  
Dept. of School of Nursing  
UFS

Dear Ms. M Mofokeng

**Subject: Health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free State Province.**

- Please ensure that you read the whole document, Permission is hereby granted for the above – mentioned research on the following conditions:
- Participation in the study must be voluntary.
- A written consent by each participant must be obtained.
- Serious Adverse events to be reported to the Free State department of health and/ or termination of the study
- Ascertain that your data collection exercise neither interferes with the day to day running of the **Boitumelo(Senekal), Clocolan, Hloholwane, Kokelong, Mamello, Masebabatso, Matwabeng, Meqheleng, Nothnagel, Phomolong(Ficksburg), Senekal, Soetwater Clinic** nor the performance of duties by the respondents or health care workers.
- Confidentiality of information will be ensured and please do not obtain information regarding the identity of the participants.
- **Research results and a complete report should be made available to the Free State Department of Health on completion of the study (a hard copy plus a soft copy).**
- Progress report must be presented not later than one year after approval of the project to the Ethics Committee of the University of Free State and to Free State Department of Health.
- Any amendments, extension or other modifications to the protocol or investigators must be submitted to the Ethics Committee of the Free State and to Free State Department of Health.
- **Conditions stated in your Ethical Approval letter should be adhered to and a final copy of the Ethics Clearance Certificate should be submitted to [sebeelats@fshealth.gov.za](mailto:sebeelats@fshealth.gov.za) / [koekoel@fshealth.gov.za](mailto:koekoel@fshealth.gov.za) before you commence with the study**
- No financial liability will be placed on the Free State Department of Health
- **Please discuss your study with the Clinic Managers on commencement for logistical arrangements see 2<sup>nd</sup> page for contact details.**
- Department of Health to be fully indemnified from any harm that participants and staff experiences in the study
- Researchers will be required to enter in to a formal agreement with the Free State department of health regulating and formalizing the research relationship (document will follow)
- You are encouraged to present your study findings/results at the Free State Provincial health research day

Trust you find the above in order.  
Kind Regards

  
Dr D Motau

HEAD: HEALTH

Date: 11/07/19

Head : Health  
PO Box 227, Bloemfotein, 9300  
4<sup>th</sup> Floor, Executive Suite, Bophelo House, cnr Maitland and, Harvey Road, Bloemfotein  
Tel: (051) 408 1646 Fax: (051) 408 1556 e-mail: [khusem@fshealth.gov.za](mailto:khusem@fshealth.gov.za)/[fshealth.gov.za](mailto:fshealth.gov.za@fshealth.gov.za)/[chikobvup@fshealth.gov.za](mailto:chikobvup@fshealth.gov.za)

[www.fs.gov.za](http://www.fs.gov.za)



12 July 2019

Ms. M Mofokeng  
Dept. of School of Nursing  
UFS

Dear Ms. M Mofokeng

Subject: Health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free State Province.

Please find below the contact details of the District Manager and facilities you will be visiting for logistical arrangements.

Thabo Mofutsanyane District	
<b>Name:</b> Mr. DS Ntsutle <b>Email:</b> <a href="mailto:ntsutleds@fshealth.gov.za">ntsutleds@fshealth.gov.za</a> <b>Tel:</b> 058 713 0232	<b>PA:</b> Me Zodwa <b>Email:</b> <a href="mailto:mosiapn@fshealth.gov.za">mosiapn@fshealth.gov.za</a>
Boitumelo (Senekal) Clinic Clocolan Clinic Hlohlohwane Clinic Kokelong Clinic Mamello CHC Masebatso Clinic Matwabeng Clinic Meqheleng Clinic Nothnagel Clinic Phomolong (Ficksburg) Clinic Senekal Clinic Soetwater Clinic	

Trust you find the above in order.

Kind Regards

## ADDENDUM H: LANGUAGE EDITING

### Declaration

20 November 2020

PO Box 4  
Otjiwarongo  
Namibia

**Student:** MS Mofokeng

**Thesis:** Health literacy of Sesotho-speaking patients diagnosed with chronic conditions in Setsoto, Free State province

I confirm that I edited this thesis, checked the references and recommended changes to the text.



MA Language Practice



Hettie Human  
WRITER | EDITOR | TRANSLATOR | INTERPRETER

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