

**AN EVALUATION OF THE PHARMACY CHRONIC CARE OUTREACH
PROGRAMME AT ZEBEDIELA**

by

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DISSERTATION

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DECLARATION

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



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Ngoepe, PJ (Mr)

29 October 2019

.....
Date

DEDICATION

In memory of both my late mother and brother, Gauta Ngoepe and David Noko Ngoepe; to my siblings and dearest father, this work is dedicated to you. You encouraged me to study hard during difficult times and I will always remember you.

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- **The Limpopo province Department of Health**, for giving me permission to conduct the study;
- **Study participants**, without them, this project could not have been completed; and
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ABSTRACT

Introduction: Zebediela Hospital in Limpopo Province is running an outreach programme as part of its chronic care initiative. In the programme, pharmacy personnel visit the feeder clinics attached to the hospital to dispense chronic medicines to patients. This study aimed at evaluating how this pharmacy chronic care outreach programme is performing, by looking at pharmacy personnel, nursing personnel and patients' perceptions.

Method: A cross-sectional descriptive study was conducted at the six feeder clinics attached to Zebediela Hospital in the Lepelle-Nkumpi municipality of the Capricorn district in Limpopo Province using a quantitative research method. This quantitative research was administered in the form of a survey. Questionnaires were used to collect data from patients, nursing personnel and pharmacy personnel. A total of 399 participants (n=399) took part in the study. The participants included 337 patients from six different clinics, 18 pharmacy personnel and 44 nursing personnel. Data was analysed using the SPSS version 25.0.

Results: The pharmacy personnel showed that an allocation of more than three personnel per duty roster sufficed. Regarding transport used by pharmacy personnel when embarking on the Pharmacy Chronic Care Outreach Programme, 71.4% of pharmacy personnel indicated that they always used hospital transport in 83.3% of the cases. The study findings showed that, 71% of patients agreed they were satisfied with the pharmacy times for collecting medicines apart from the fact that 65.6% of patients travelled for more than two hours from their respective homes to their nearest clinic. Sixty eight percent of pharmacy personnel perceived the PCCOP model to be reducing patient waiting time at the clinics. Both the patients and nursing personnel were however not satisfied with the pharmacy personnel's arrival time at the clinic. The other negative aspect reported was the space problem at the clinics where, 77.8% of pharmacy personnel and 54.5% of nursing personnel reported this as not user-friendly. The patients' satisfaction levels regarding the PCCOP model for "very satisfied" stood at 64.2% and 0.6% for "very dissatisfied". Both pharmacy and nursing personnel recommended that the PCCOP model be continued with recommendations towards improving human resources and infrastructure.

Conclusion: In conclusion, both pharmacy personnel and nursing personnel showed that the outreach programme was a good initiative in the health system and it benefitted patients. However, the concerns mentioned by patients included long waiting times at the clinic and medicine stock outs. As the results show, the pharmacy chronic care outreach programme should be continued, as long as patients' complaints can be attended to.

Key words: Evaluation, Pharmacy Chronic care Outreach Programme, Zebediela

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LIST OF ABBREVIATIONS AND ACRONYMS

ANC	African National Congress
ART	Anti-retroviral therapy
CCMDD	Central chronic medicine dispensing and distribution
CHS	Comprehensive Health Service
CHW	Community Health Worker
DHS	District Health System
FDC	Fixed-dose combination
GDP	Gross Domestic Product
GPP	Good Pharmacy Practice
HIV/AIDS	Human immune virus/Acquired immunodeficiency syndrome
ICCC	Innovative Care for Chronic Conditions
ICDM	Integrated Chronic Disease Management
LDOH	Limpopo Department of Health
MEC	Member of the Executive Council
NDOH	National Department of Health
NHI	National Health Insurance
PEPFAR	President's Emergency Plan for Aids relief
PFCd	Partnership to Fight Chronic Disease
PHASA	Public health association of South Africa
PSSA	Pharmaceutical Society of South Africa
PHC	Primary Health Care
PUP	Pick up point
SANC	South African Nursing Council
SAPC	South African Pharmacy Council
STATSSA	Statistics South Africa
TB	Tuberculosis
UHC	Universal Health Coverage
UK	United Kingdom
US	United States
WHO	World Health Organisation

DEFINITION OF KEY CONCEPTS

Chronic care – providing long-term medical care lasting usually more than ninety days, especially for individuals with chronic, physical or mental impairment (Merriam-Webster dictionary, 2019). In this study, the pharmacy intervention to chronic care, made in a form of planned visits to offer dispensing of chronic medicines directly, also called the Pharmacy Chronic Care Outreach Programme (PCCOP) is being assessed on its impact.

Dispensing - In terms of the Pharmacy Act means "the interpretation and evaluation of a prescription, the selection, manipulation or compounding of the medicine, the labelling and supply of the medicine in an appropriate container according to the Medicines Act and the provision of information and instructions by a pharmacist to ensure the safe and effective use of medicine by the patient (GPP manual, 2010). In this study dispensing refers to one or more phases of dispensing, done by either a nursing personnel or pharmacy personnel.

Evaluation – defined by the Austrian Development Agency (2009) as a systematic and objective assessment of an on-going or completed project, programme or policy, its design, implementation and results. The aim is to determine the relevance and fulfilment of objectives, efficiency, effectiveness, impact and sustainability. In this study, evaluation refers to the process undertaken by the researcher to gather PCCOP input and output indicators, PCCOP benefits, drawbacks and opinions.

Nursing personnel - in this study it refers to any of the three categories of nurses already qualified, namely;

- A professional nurse – a person who is qualified and competent to independently practise comprehensive nursing in the manner and to the level prescribed and who is capable of assuming responsibility and accountability for such practice (Nursing Act, 2005).
- An enrolled nurse/staff nurse – a person educated to practise basic nursing in the manner and to the level prescribed (Nursing Act, 2005).
- An enrolled nursing auxiliary – a person educated to provide elementary nursing care in the manner and to the level prescribed (Nursing Act, 2005).

The nursing personnel were researched on perceived benefits of the PCCOP, opinions about the PCCOP and inputs versus outputs. All categories of personnel listed in this definition will be used during the study.

The definition excludes categories of nursing personnel who are not yet qualified, namely pupil nurses and student nurses since they do not form part of nursing personnel forming part of clinic staff in public primary health care clinics or hospitals.

Outreach - Is an effort to offer services or information to people where they live or spend time (Cambridge dictionary, 2019). In this study, outreach refers to the pharmacy programme of offering pharmacy chronic care to patients at clinics attached to Zebediela hospital. The inputs, outputs made into and out of programme were being assessed. Furthermore, pharmacy and nursing personnel opinions were generally being looked at in a qualitative approach.

Pharmacy personnel - Specifically defined in this study to refer to a pharmacist registered as such with the South African Pharmacy Council (SAPC) and pharmacy support personnel including Pharmacist's Assistants (Learner basic, basic, learner post basic and post basic), Pharmacy Technicians, Pharmacy Technical Assistants and Pharmacy General Assistants registered with the SAPC in terms of Pharmacy Act, Act 53 of 1974. The operationalized definition excludes persons registered in the category of pharmacy students and pharmaceutical sales representatives. In this study, pharmacy personnel were researched on perceived benefits of the pharmacy chronic outreach programme (PCCOP), opinions about the PCCOP and inputs versus outputs. All categories of personnel listed in this definition will be used during the study except Pharmacy Technicians, Pharmacy Technical Assistants and Pharmacy general assistants.

Pharmacist – means a person registered as such with the SAPC under the Pharmacy Act, Act 53 of 1974 (Pharmacy Act, 2005).

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION AND BACKGROUND

Section 27 of the South African constitution, in the bill of rights provides that everyone has the right to health (Act 108, 1996). In South Africa, non-communicable diseases and injuries account for 49% of mortalities. Out of this, 40% of mortalities are from non-communicable diseases (WHO, 2018).

Chronic diseases and conditions such as heart disease, stroke, cancer, type 2 diabetes and arthritis are among the most common, costly and preventable of all health problems (Chrodis, 2017). A notable fact here is that hypertension affects 42.2% of the population; 10.6% of the population have elevated blood glucose whilst 34% of the population have high cholesterol (HSRC, 2013). The lifetime prevalence for a mental health condition has been estimated at 30.3% (Herman *et al.*, 2011).

There has been a variety of pharmacy outreach programmes in the world formed with different purposes. One such programme was carried out in the Wong Tai Sin district in Hong Kong. According to a study by Lee *et al.* (2012), the conclusions of the study carried out in the district showed that the pharmacy outreach service might improve blood pressure control, hypertension and disease knowledge in elderly adults.

The National Department of Health (NDOH), with the support of the United States (US) President's Emergency Plan for Aids relief (PEPFAR) has developed an Integrated Chronic Disease Management (ICDM) model based on the building blocks set out in the World Health Organisation document titled; Innovative Care for Chronic Conditions: Building blocks for action (Mahomed & Asmall, 2011).

The initiation of the Integrated Chronic Disease Management (ICDM) commenced in April 2011 in the Dr Kenneth Kaunda District in the North-West Province, West Rand District in Gauteng and Bushbuckridge sub-district in the Ehlanzeni District of Mpumalanga. It was implemented at 42 selected primary health care (PHC) facilities in a phased approach across the three districts. The lessons learnt during the pilot phase have been used to refine the tools and the methodology employed to ease implementation of the model at all PHC facilities (Mahomed & Asmall, 2015).

1.2 PROBLEM STATEMENT

Access to chronic medications in South Africa's healthcare system, particularly the public sector is associated with several challenges. Some of the observed challenges are amongst others; a high volume and forever increasing number of patients against a limited number of pharmacy personnel and in some instances an imbalance of feeder clinics-hospital ratio, where other hospitals have a huge number of PHC clinics attached to them. This is caused by the fact that the prevalence of chronic diseases is steadily increasing (Broemeling *et al.*, 2008).

Metz (2007) corroborates that the reason for developing and running programme evaluations is to find out what works and what does not work in a programme. This approach of engaging research, practice, and policy creates a better fit between the information and the needs of the users, a key to integrated knowledge translation (Straus *et al.*, 2011).

Decentralised health services form a key part of chronic care strategies in resource-limited settings by reducing the distance between patient and clinic plus the time and costs involved in travelling. However, few tools exist to evaluate the impact of decentralisation on patient travel time or what proportions of patients attend their nearest clinic (Houben *et al.*, 2012).

In the Limpopo province, three hospitals are known to have introduced the Pharmacy Chronic Care Outreach Programme (PCCOP) or a chronic care

programme resembling it. The hospitals that introduced the PCCOP model are Mankweng Hospital, Lebowakgomo Hospital and Zebediela Hospital. Since the introduction of the PCCOP at these different hospitals, monitoring and evaluation of the model has not been done in the Capricorn District, Limpopo province.

1.3 PURPOSE OF THE STUDY

1.3.1 Aim

The main aim of the study is to assess and evaluate the quality of care provided in the PCCOP model implemented for improving health outcomes of patients receiving treatment for chronic diseases from selected PHC facilities attached to Zebediela hospital.

1.3.2 Research questions

- What are the perceptions of the stakeholders involved in the PCCOP programme?
- What are the factors affecting perceived benefits of the PCCOP services?
- What are the PCCOP recommendations and programme satisfaction levels?

1.3.3 Objectives

- To assess the perception of pharmacy personnel, nursing personnel and patients regarding the quality of care in the PCCOP model.
- To determine the factors affecting the perceived benefits of the PCCOP services.
- To assess the perception of pharmacy personnel, nursing personnel and patients regarding feasibility of the PCCOP programme.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter, the literature review is discussed. The chapter starts by defining the Pharmacy Chronic Care Outreach Programme (PCCOP), then goes on to touching on chronic care models globally and the World Health Organisation (WHO) recommendations. Then the lens is turned to the South African perspective, with particular interest on the District Health System (DHS). The chapter closes off with the South African plan of introducing the National Health Insurance (NHI) scheme, which enables the WHO plans on Universal Health Coverage.

2.2 PHARMACY CHRONIC CARE OUTREACH PROGRAMME OVERVIEW

A health care system can be viewed as that system which encompasses all the activities whose primary purpose is to promote, restore, or maintain health (WHO, 2000). Among other activities contained in a health system, has to be chronic care. The WHO (2002) Innovative Care for Chronic Conditions (ICCC) global report alludes to the fact that in the olden days, acute problems such as infectious diseases were more of a concern to health systems compared to chronic care.

Chronic care can be defined as care which addresses pre-existing or long-term illness, as opposed to acute care which is concerned with short term or severe illness of brief duration (Wikipedia, c2019). On the obverse, long-term illnesses which are colloquially known as chronic conditions can be classed into two categories, namely chronic non-communicable and chronic communicable diseases. The term “chronic conditions” encompasses but expands beyond the traditional “non-communicable diseases” (e.g., heart disease, diabetes, cancer, and asthma) to include several communicable diseases e.g., HIV/Aids and TB (WHO, 2002).

Pharmacy Chronic Care Outreach Programme is a research variable in this study, comprised of pharmacy personnel from the hospital doing scheduled outreach services to the feeder clinics attached to the Zebediela hospital, to dispense chronic medicines to patients on chronic care. This outreach services are adapted from the national norms and standards for district hospitals in South Africa, which entails “referral and chronic” (NDOH, 2002).

2.3 THE GLOBAL BURDEN OF NON-COMMUNICABLE DISEASES

Non-communicable diseases (NCDs) or chronic diseases disproportionately affect low- and middle-income countries where nearly three quarters of NCD deaths accounts for 28 million yearly (WHO, 2015). Figure 2.1 depicts global deaths due to chronic diseases or NCDs.

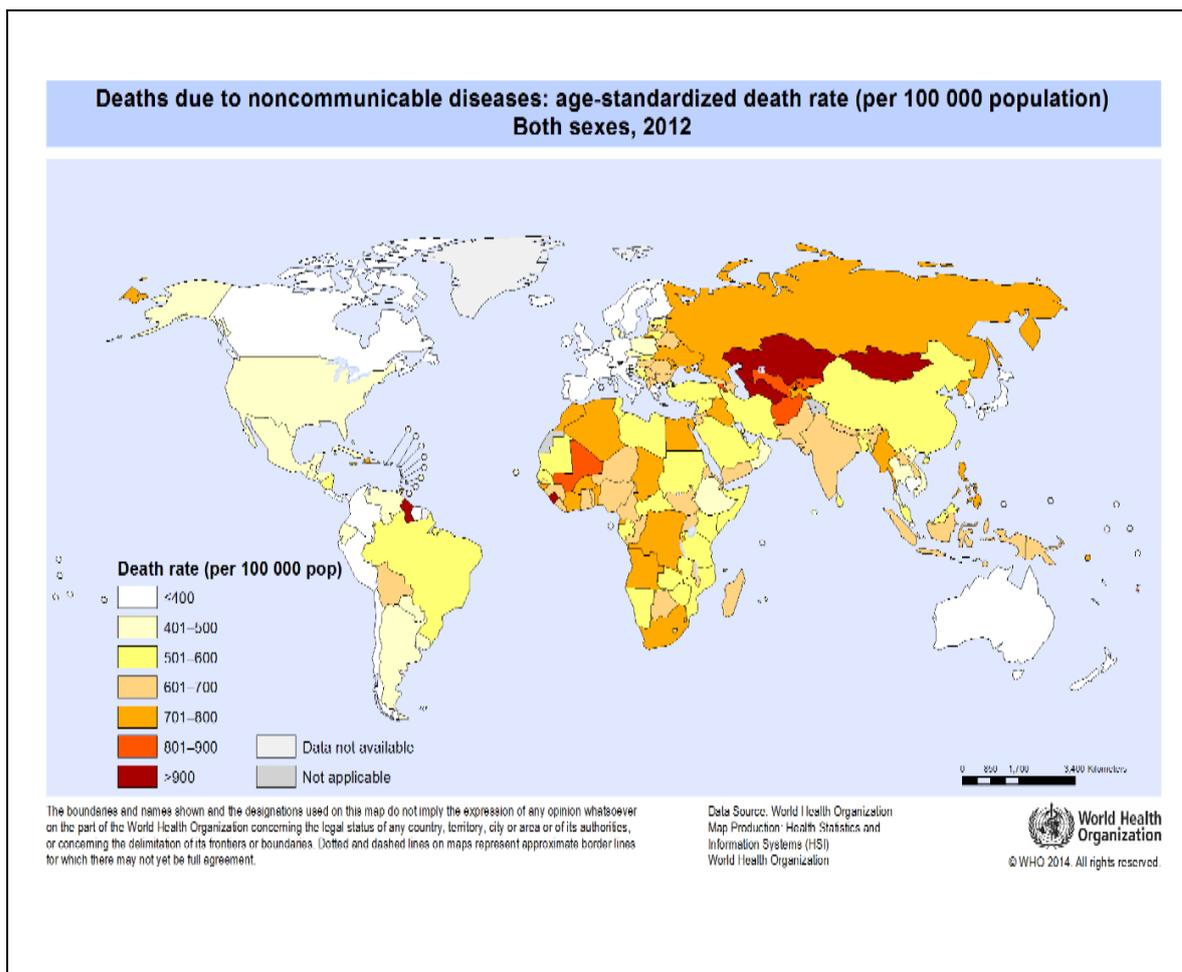


Figure 2.1: Global deaths due to non-communicable diseases (WHO, 2012)

Lower-income countries generally have lower capacity for the prevention and control of non-communicable diseases. High-income countries are nearly 4 times more likely to have NCD services covered by health insurance than low-income countries. Countries with inadequate health insurance coverage are unlikely to provide universal access to essential NCD interventions (WHO, 2017).

Of the 56.9 million global deaths in 2016, 40.5 million (71%) were due to non-communicable or chronic diseases. The four main NCDs were cardiovascular diseases, cancers, diabetes and chronic lung diseases. The burden of these diseases is rising disproportionately among lower income countries and populations. In 2016, over three quarters of NCD deaths occurred in low- and middle-income countries with about 46% of deaths occurring before the age of seventy (WHO, c2019).

The leading causes of NCD deaths in 2016 were cardiovascular diseases (17.9 million deaths, or 44% of all NCD deaths), cancers (9.0 million, or 22% of all NCD deaths), and respiratory diseases, including asthma and chronic obstructive pulmonary disease (3.8 million of 9% of all NCD deaths). Diabetes caused another 1.6 million deaths (WHO, c2019).

With the realisation that the chronic burden is high in developing countries, tackling the risk factors would save 82% of premature deaths and most importantly provide a huge boost for economic development (WHO, c2019).

2.4 THE BURDEN OF NON-COMMUNICABLE DISEASES IN SOUTH AFRICA

Mayosi *et al.* (2009), asserted that the distribution of non-communicable diseases displays socio-economic disparities, with the heaviest burden for communities in urban areas. Using the results of an age-standardised Angicourt study, they further elucidated that people living in the poor sub-districts of Cape Town such as Khayelitsha had the highest mortality rate per 100 000 (856.4 per 100 000) people

compared to people in the wealthy northern and southern sub-districts (450-500 per 100 000). In substantiating the above statements, Beaglehole *et al* (2008), stated that the burden of chronic diseases such as heart diseases, cancer, diabetes and mental disorders was high in low-income and middle-income countries, and the burden is further predicted to increase with ageing of populations, urbanisation and globalisation as risk factors.

Chang *et al.* (2018) showed that the prevalence of chronic diseases in South Africa were hypertension at 63%, diabetes at 12% and HIV at 23%, as well as the prevalence of concordant and discordant conditions by sociodemographic covariates. Among patients with hypertension, 1535 (55%) had one or more additional cardiometabolic condition, 615 (22%) had one or more mental disorder and 480 (17%) were HIV positive. Among those with diabetes, 465 (91%) patients had other cardiometabolic conditions, 139 (27%) had mental disorders and 77 (15%) were HIV positive.

2.5 CHRONIC DISEASE RISK FACTORS

It is common knowledge that chronic disease risk factors generally refer to a variety of factors that predisposes an individual to the risk of developing a chronic disease. The WHO (2005) classifies chronic disease risk factors into the following four categories:

- (i) Underlying socioeconomic, cultural, political and environmental determinants.
- (ii) Common modifiable risk factors.
- (iii) Non-modifiable risk factors
- (iv) Intermediate risk factors.

All age groups and all regions are affected by NCDs. NCDs are often associated with older age groups, but evidence shows that 16 million of all deaths attributed to non-communicable diseases (NCDs) occur before the age of 70. Of these "premature" deaths, 82% occurred in low- and middle-income countries.

Children, adults and the elderly are all vulnerable to the risk factors that contribute to non-communicable diseases, whether from unhealthy diets, physical inactivity, exposure to tobacco smoke or the effects of the harmful use of alcohol (WHO, 2015).

These diseases are driven by forces that include ageing, rapid unplanned urbanization, and the globalization of unhealthy lifestyles. For example, globalization of unhealthy lifestyles like unhealthy diets may show up in individuals as raised blood pressure, increased blood glucose, elevated blood lipids, and obesity. These are called 'intermediate risk factors' which can lead to cardiovascular disease, an NCD or chronic disease (WHO, 2015).

2.5.1 Socioeconomic, cultural, political and environmental determinants

According to WHO (c2019), the social determinants of health are “the conditions in which people are born, grow, work, live, and age, and the set of forces and systems shaping the conditions of daily life. The set of forces and systems refers to an array of subjects such as government policies pertaining to health, religious and cultural practices such as fasting. Cockerham *et al.* (2016) claimed that a large body of research currently shows that society can make you sick or promote your health.

2.5.2 Common modifiable risk factors

The causes of the main chronic disease epidemics are well established and well known. The most important modifiable risk factors are: unhealthy diet and excessive energy intake; physical inactivity and tobacco use. Another modifiable risk factor is harmful alcohol use, which is estimated to result in 3% of global deaths resulting from intentional and unintentional injuries (WHO, c2019). Therefore, reducing the burden of chronic diseases entails modifying the above-mentioned chronic disease risk factors.

2.5.3 Non-modifiable risk factors

The WHO (c2019) classifies the non-modifiable risk factors as both ageing and heredity. Garko (2012) asserts that rather than construing ageing as a chronological

phenomenon it is more useful to think about ageing in functional or biological terms. That is, aging is not just about the passage of time. Rather, it is also about the biophysical health status of a person at any given point in time. It is theoretically possible for an individual to be chronologically 50 but biologically 35 or chronologically 50 and biologically 65.

2.5.4 Intermediate risk factors

The WHO (c2019) classifies intermediate risk factors as raised blood pressure, raised glucose levels (prediabetes), abnormal blood lipids (particularly low-density lipoprotein cholesterol), and overweight (body mass index ≥ 25 kg/m²) and obesity (body mass index ≥ 30 kg/m²). Therefore, it follows from this analogy that intermediate risk factors are risk factors following after modifiable and non-modifiable risk factors; but just before the usual onset of a particular chronic disease.

2.6 PREVENTION AND MANAGEMENT OF NON-COMMUNICABLE DISEASES

A good turnaround strategy came in in 2011, when 190 countries joined hands with the WHO to reduce the non-communicable disease burden and to adopt the WHO Action Plan for prevention and control of NCDs by 25% by 2025 (WHO, c2019). The South African NDOH as a WHO member state, under the Non-communicable diseases sub-programme; set itself three strategic objectives:

- (i) Introduction of legislation and regulations to reduce NCDs;
- (ii) Prevention and management of NCDs by implementing an Integrated Chronic Care Model and; and
- (iii) Strengthening the health system to increase cataract surgeries.

The aforementioned strategic objectives are mentioned in 2012/2013 National Department of Health annual report.

2.6.1 WHO Global Voluntary Targets

Countries have endorsed the nine WHO global voluntary targets with the overarching aim to reduce premature death from the four major NCD's by 25% by 2025. The WHO states that achieving these targets is feasible through high-level political commitment, whole-of-government action, and support and engagement from everyone to create the healthy environments needed to beat NCDs (WHO, 2014). The WHO global voluntary targets are listed below:

Target 1: A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases;

Target 2: At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context;

Target 3: A 10% relative reduction in prevalence of insufficient physical activity;

Target 4: A 30% relative reduction in mean population intake of salt/sodium;

Target 5: A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years;

Target 6: A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances;

Target 7: Halt the rise in diabetes and obesity;

Target 8: At least 50% of eligible people receive drug therapy and counselling (including glycemic control) to prevent heart attacks and strokes; and

Target 9: An 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major NCDs in both public and private facilities

The WHO (2008), asserts that the Kaiser Permanente care triangle has been commonly used to conceptualize chronic care at three main levels:

1. Supporting self-care for people with a chronic disease who are at low risk of complications and hospitalization;

2. Disease management for people who need regular routine follow-up and are at high risk; and
3. Case management for people with complex needs who are high-intensity users of unplanned secondary care.

Beaglehole *et al.* (2008), corroborated that the interventions in the prevention and management of chronic diseases should include; tobacco control in primary healthcare; prevention of type 2 diabetes mellitus; treatment of mental disorders in primary care and the integration of care for HIV/Aids and others. He suggested that the goal of tobacco control policy in primary healthcare should be to ensure that all adult patients are questioned about tobacco use habits with a subsequent advice to quit in users and a follow-up cessation service to those interested.

Beaglehole *et al.* (2008) also suggested pharmacological interventions for people at a high risk of cardiovascular disease and diabetes. The pharmacological interventions would be directed to individuals that are suitable to preventive use of drugs, following identification through screening in primary health care. However, he also showed that health promotion in primary healthcare has proved to be successful in reducing risk factors in high income countries. The challenge with risk factors reduction in middle- and low-income countries was attributed to drug costs.

2.7 GLOBAL CHRONIC DISEASE MANAGEMENT MODELS

Grover *et al.* (2015), asserts that there is a large diversity of chronic disease models in the literature. These different models have different elements. Some elements in these chronic models consider self-management; others have health systems approach; a few have community participation approach whilst others consider chronic disease instruments. A mention of the CCM, ICCC and the Stanford model has been included below:

2.7.1 The Chronic Care Model (CCM)

The CCM is an organizing framework for improving chronic illness care and an excellent tool for improving care at both the individual and population level. The model is based on the assumption that improvement in care requires an approach that incorporates patient, provider, and system level interventions (Fiandt, 2006).

The CCM consists of six distinct concepts identified as modifiable components of healthcare delivery: organizational support, clinical information systems, delivery system design, decision support, self-management support, and community resources. While the first four concepts in the CCM address practice strategies, the final two are specifically patient centred. Either chronic disease management or practice improvement can be based on each of the concepts separately or on the model as a whole. When the concepts are used separately, it is essential that the clinician keep in mind the other components of the model (Fiandt, 2006).

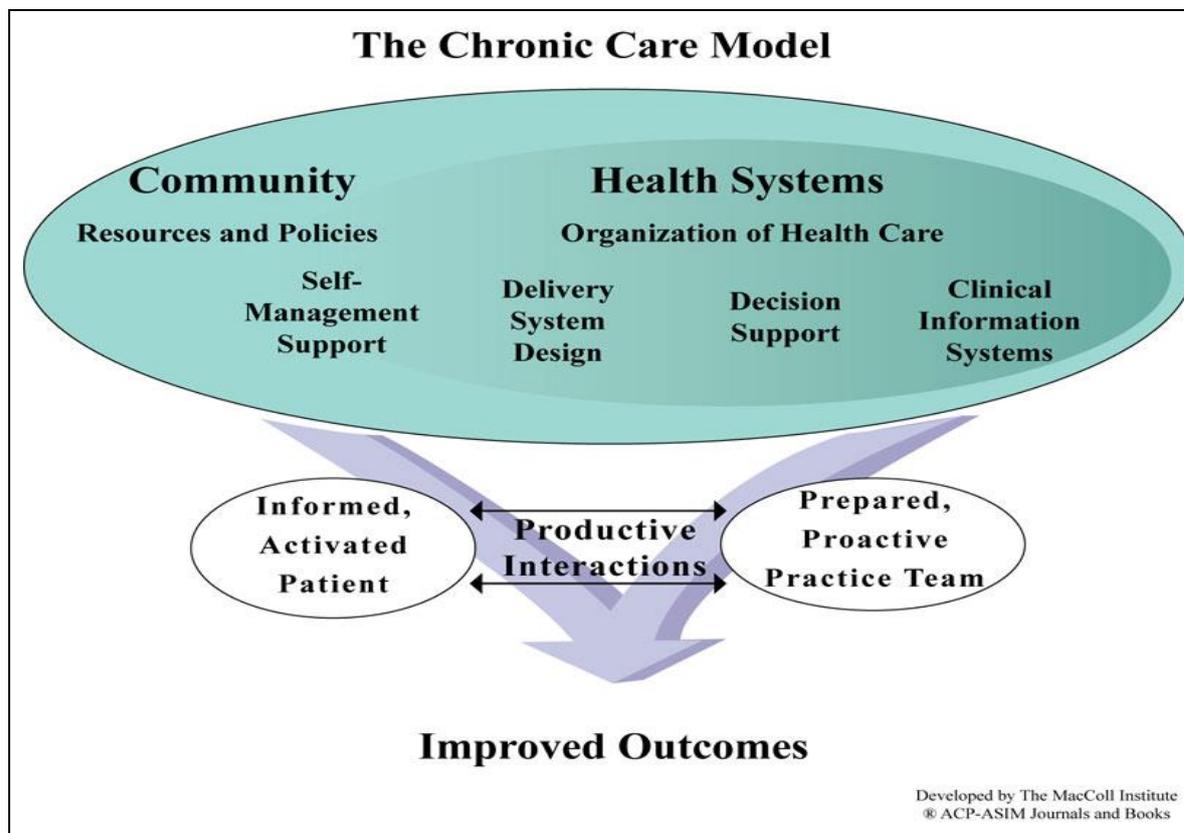


Figure 2.2: The Chronic Care Model (Wagner, 1998)

The Chronic Care Model (CCM) was developed by Edward H. Wagner. The CCM summarizes the basic elements for improving care in health systems on different levels as shown above in figure 2.2. These elements are the community, the health system, self-management support, delivery system design, decision support and clinical information systems. Evidence-based change concepts under each element, in combination, foster productive interactions between informed patients who take an active part in their care and providers with resources and expertise. The CCM can be applied to a variety of chronic illnesses, health care settings and target populations.

Strickland *et al.* (2010), corroborates in their study that “physical activity counselling for overweight/obese patients were more likely to occur in primary care practices where more CCM features were implemented”. They further assert that, diabetic patients who were seen in practices that have implemented more CCM features were significantly more likely to receive diabetes care, though there was no association seen between the implementation of CCM features and weight-loss or diet (Strickland *et al.*, 2010).

2.7.2 The Innovative Care for Chronic Conditions (ICCC)

Following the model as developed by Wagner and others, the most interesting was the innovative chronic care as captured in a WHO report. The report outlines that innovation in chronic conditions is the introduction of new ideas, methods, or programmes to change the way chronic conditions are managed and prevented (WHO, 2002).

The Innovative Care for Chronic Conditions (ICCC) was launched by the WHO, as a comprehensive framework for updating healthcare to meet the needs of chronic conditions. The proposed building blocks and overall framework are relevant for both prevention and disease management in health care settings (WHO, 2002). The eight essential elements for taking action are as follows;

- (a) Paradigm shift support
- (b) Management of the political environment
- (c) The building of an integrated healthcare
- (d) Alignment of sectoral policies
- (e) Effective use of healthcare personnel
- (f) Centre on the patient and family
- (g) Support of patients in their communities
- (h) Emphasis of prevention

2.7.3 The Stanford Model (CDSMP)

The Stanford Chronic Disease Self-Management Programme (CDSMP) was developed by the Stanford University. CDSMP is an evidence-based programme that has been adapted for many cultures and found to be equally useful. The programme is now available in multiple languages including Te Reo Maori, Samoan, Tongan and Hindi in New Zealand (Health Navigator, 2019). The CDSMP aims to provide participants with the self-efficacy and skills required to optimally manage their chronic conditions regardless of specific diagnosis. The overall aim is to help the participants' master six fundamental self-management tasks: solving problems, making decisions, utilizing resources, forming a patient -provider partnership, making action plans for health behaviour change and self-tailoring.

2.7.4 Decentralised Chronic Diseases Care

Poor transport infrastructure and scattered populations in low-income countries force people from rural communities to spend a significant amount of their time and scarce income in travelling to meet basic needs such as healthcare (Houben *et al.*, 2012). In an explorative study by Tanser *et al.* (2006), the results showed that there was a significant logistic decline in usage with increasing travel time to the clinic. The CCM was ideally suited to improve the facility component and patient experience; however, deficiencies in other aspects of the health system building blocks necessitated a hybrid model (Mahomed & Asmall, 2015).

2.8 THE SOUTH AFRICAN APPROACH TO CHRONIC CARE

In order to learn lessons from other countries the Minister and MECs visited Brazil in 2010 and came back with a vision for the re-engineering of primary health care. Brazil was able to improve health outcomes by inter alia expanding the role of community agents working in teams with health professionals (NDOH, 2011).

In 2011, South Africa established ward-based community health workers (CHW) outreach teams, as part of a series of strategies to strengthen primary health care. In order to improve access and health outcomes and to take health services to the community, the national policy outlined that communities (wards) should have at least one PHC outreach team comprising a professional nurse, an environmental health officer, health promoters and 6-10 CHWs. The nurse team leader should be a staff member at a PHC clinic (Nxumalo, 2014).

However, PHC reengineering, does not detract the need to strengthen the district health system which is a South African vehicle of delivering PHC and district hospital services. This means that the district management, sub-district management as well as management of district facilities must be strengthened. A three-stream approach to PHC reengineering was adopted and it consists of a ward based PHC outreach team (CHW, environmental officer and a PHC nurse), school health services and a district specialist team (PHASA, 2012).

2.9 APPLICATION OF THE INNOVATIVE CARE FOR CHRONIC CONDITIONS

The WHO (2002) states that the innovation in care for chronic conditions is the introduction of new ideas, methods, programmes to change the way chronic conditions are prevented and managed. The WHO further adds that the guiding principles of the ICCC framework is fundamental to the micro (patient interaction), meso (health-care organisation and community), and macro (policy) level of the health-care system. Below are some of the ICCC framework principles from the patient interaction level;

2.9.1 Innovative Chronic Care Case: United States of America

Kaiser Permanente, a large managed care organisation in California, re-oriented its primary care clinics to better meet the needs of patients, emphasizing the needs of those with chronic conditions. Multi-disciplinary teams were created that include physicians, nurses, health educators, psychologists and physical therapists. These primary care teams link pharmacy, telephone advice and appointment centre, chronic conditions and management programmes, and specialty clinics creating a totally integrated system of care from outpatient clinics to inpatient hospital care (WHO, 2002).

Patients are enrolled in the chronic condition management programs via outreach strategies that identify those with chronic conditions who have not sought primary care, and through physician identification during primary care office visits. Patients receive services from multiple disciplines, based on the intensity of their needs. There is an emphasis on prevention, patient education, and self-management. Non-physician team members facilitate group appointments. Biological indices have improved across conditions such as heart disease, asthma and diabetes. Screening and prevention have increased and hospital admission rates have declined (WHO, 2002).

A recent comparison of Kaiser's integrated care system with the UK's National Health System found that although costs per capita in each system were similar, Kaiser's performance was considerably better in terms of access, treatment and waiting times. Explanations for Kaiser's better performance included real integration across all components of health care, treating patients at the most cost-effective level of care, market competition and advanced information systems (WHO, 2002).

However, Kaiser Permanente has recently been blamed for deficiencies in their mental health programmes. Some Kaiser patients still had to wait weeks or even months to see a therapist or psychiatrist, and that violates state laws intended to ensure timely access to mental health treatment, the state Department of Managed Health Care said in a report (Gold, 2015).

2.9.2 Innovative Chronic Care Case: South Africa

According to the Innovative Chronic Care Global Report, South Africa's contribution came in the field of enhancing self-management and adherence. The core of the Compliance Service is a system that sends patients reminders via the text functions of their mobile telephone at the appropriate time(s) of the day (WHO, 2002). According to the report, the messages carry lifestyle tips that corresponds to the chronic conditions of patients, reminds the patients the times and names of medicines to be taken, and most importantly when are they due to see a doctor for a review of their scripts (WHO, 2002).

2.10 ALTERNATIVE DISTRIBUTION OF CHRONIC MEDICATION TO CLIENTS

Alternative distribution of chronic medication is the use of sites other than health care facility in order to fast track the care and follow up of stable clients. A report titled Alternative Distribution of Chronic Medicines, outlines that pharmacy personnel visit the alternative health facility, with medicine parcels that were already dispensed at a central health facility. At alternative sites, the pharmacy personnel then hand out the medicine parcels to patients. The alternative distribution of chronic medicines in the Western Cape report, further highlights that the medicine packages are grouped in alphabetical order, as a result it would be easy to locate a patient's medicine pack when it is to be handed to the owner (Staden, 2012).

To "qualify" for the alternative distribution point, patients need to be adherent and their health in a stable condition. The system works on an appointment basis which enables the service to inform patients by means of verbal interaction and a pamphlet which points are open on specific dates. All medication is pre-packed and labelled at the central pharmacy according to the appointments made (Staden & Otto, 2012).

Staden (2012) has also mentioned achievements of alternative distribution points, among others such as medicines being availed close to the client's home and no travelling expenses. On the other hand, Staden reported an inconsistency of health messages around the clinic during dispensing at alternative distribution points.

2.11 CHALLENGES IMPLEMENTING CHRONIC CARE MODELS

The 2012 National Health Facilities Baseline Audit reported on a survey of 3,356 clinics and community health centres that found that most clinics had facility managers, but nearly half of the clinics had no visiting doctors; 84% had no assistance from a pharmacist or pharmacist assistant; 11% had no lay counsellors; 57% had no administration support and 79% have no information management staff. The chronic shortage of health care workers inherited from apartheid had become an acute and catastrophic shortage (Jobson, 2015).

2.12 THE NHI AND CHRONIC CARE IN SOUTH AFRICA

The NDOH (2015), states that the World Health Organisation provides guidance to countries on moving towards universal health coverage (UHC). The WHO identifies three dimensions for progressing towards universal coverage and these are shown in Figure 2.3. The three dimensions are population coverage, service coverage and cost coverage

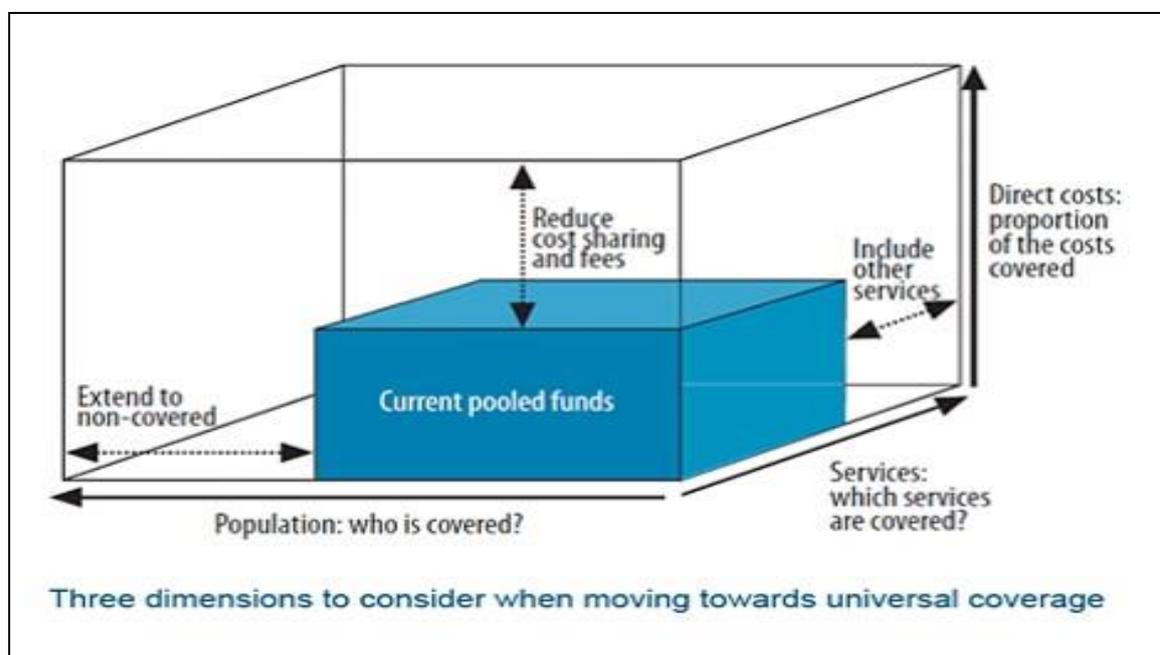


Figure 2.3: Three dimensions towards Universal Health Coverage (WHO, 2011)

However, the NHI white paper on improving access to pharmaceutical services implemented the Central chronic medicine dispensing and distribution programme

'CCMDP'. The programme is comprised of two programme components, Central Chronic Medicine Dispensing Programme (CCMDP) and Pick-up Points (PUP). To date, the implementation of CCMDP has focused primarily on the provision of ARVs, Fixed-Dose Combinations (FDC) in particular, to stable HIV patients receiving Anti-Retroviral Therapy (ART). However, the programme is eventually intended to encompass all stable patients with chronic conditions whose management consists of bi-annual clinic visits and check-ups (Kettledas, 2016).

2.13 SUMMARY

In summary, the literature on chronic care was reviewed. This entailed an overview of the chronic care globally, in South Africa and in other health districts. In the next chapter, the methods of the study will be discussed.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In this chapter, the research methodology is unpacked and discussed. The chapter begins by explaining the research method, the research design and its' sub-topics such as the data collection process, right through to the conclusion.

3.2 RESEARCH DESIGN

A quantitative research method design is defined as a formal systematic process for obtaining quantifiable information about [phenomena] in the world. It is presented in numeric form, and analysed through the use of statistics (Polit & Hungler, 1999). However, a quantitative research can either be a survey or an experiment. In this study, a quantitative survey method was employed. Creswell J.W. attests that a survey design method enables data collection, and in turn, enables the researcher to generalise the findings from a sample of responses to a population (Creswell, 1994). Therefore, the research method chosen in this study was a quantitative survey method.

A quantitative research method design has four basic types. In this study, the research employs a descriptive survey study. A descriptive survey study attempts to describe systematically a solution, problem, phenomenon, service or programme, or describes attitudes towards an issue (Kumar, 2014). A cross-sectional study is a research tool used to capture information based on data gathered for a specific point in time. The data gathered is from a pool of participants with varied characteristics and demographics known as variables (Study.com, c2017). Therefore, the study will be conducted as a cross-sectional descriptive quantitative survey study.

3.3 STUDY SITES

The study sites were Zebediela Hospital and the feeder primary health clinics (PHC) attached to it, namely Byldrift Clinic, Smugglers Union Clinic, Slypsteen Clinic, Moletlane Clinic, Mogoto Clinic and Zebediela Estate Clinic. Zebediela Hospital is situated in Magatle village, in Limpopo province. Magatle village is situated 76.4 km South of Polokwane and 66.8 km South-East of Mokopane. Table 3.1, shows the study sites as already mentioned.

Table 3.1: PCCOP study sites

Name of feeder clinic	Name of Hospital
Byldrift clinic	Zebediela Hospital
Smugglers Union clinic	
Slypsteen clinic	
Moletlane clinic	
Mogoto clinic	
Zebediela estate clinic	

3.4 SAMPLING

Kumar (2014), states that, "sampling is the process of selecting a few (sample) from a bigger group (the sampling population) as the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome of the bigger group".

Simple random sampling is a sampling technique in which each member of the population is equally likely to be chosen as part of the sample. Simple random sampling is further regarded as the purest and the simplest sampling strategy. This sampling strategy removes bias from the selection procedure and representative samples (Research methodology, c2019).

The purposive sampling technique, also called judgment sampling, is the deliberate choice of a participant due to the qualities the participant possesses. It is a non-random technique that does not need underlying theories or a set number of participants. Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Etikan *et al.*, 2016).

At the time the study was conducted, the pharmacy personnel population at the hospital was 22. The patients and nursing personnel populations were as depicted in Table 3.2, below. Two types of sampling were employed in this study, namely purposive sampling and simple random sampling. The pharmacy and nursing personnel were sampled using purposive sampling whilst patients were sampled using simple random sampling.

Table 3.2: Population size distribution

Name of clinic	No of nursing personnel	No of patients	No of pharmacy personnel
Byldrift clinic	06	420	22
Smugglers Union clinic	07	268	
Slypsteen clinic	12	364	
Moletlane clinic	12	604	
Mogoto clinic	13	524	
Zebediela Estate clinic	08	164	
Total population size	N=74	N=2344	N=22

The Rao-soft calculator was used to determine the study sample from the population sample as shown in Table 3.2. The resultant study populations were as follows; nursing personnel ($n=63$), pharmacy personnel ($n=21$) and patients ($n=337$).

3.5 DATA COLLECTION INSTRUMENTS

The data collection instruments in this study constituted of the PCCOP survey questionnaires. The questionnaires were in three categories; pharmacy personnel questionnaire (Appendix 1), nursing personnel questionnaire (Appendix 2) and patients' questionnaire (Appendix 3). Furthermore, a Sepedi translated patient questionnaire was given to patients who preferred to answer the questions in their home language (Appendix 4).

3.5.1 Pharmacy Personnel

The pharmacy personnel questionnaire was divided into four sections, namely;

Section A: Demographic information

Age, Gender, Occupation rank and Length of time spent on the PCCOP

Section B: General facility and healthcare provision

Questions cover PCCOP inputs and pharmacy personnel perceptions

Section C: Medicine management

Pharmacy personnel perceptions of the programme, e.g., do you cover sufficient stock to cover every patient during PCCOP visits?

Section D: PCCOP recommendations

Pharmacy personnel choose PCCOP recommendations which they feel are good for the PCCOP.

3.5.2 Nursing Personnel

The nursing personnel questionnaire was divided into four sections, namely;

Section A: Demographic information

Age, Gender and Occupation rank

Section B: General facility and healthcare provision

Nursing personnel perceptions of the programme, e.g., Do you think the PCCOP reduces patient waiting time?

Section C: PCCOP recommendations

Nursing personnel choose PCCOP recommendation/s which they feel is good for the PCCOP.

3.5.3 Patients

The pharmacy personnel questionnaire was divided into five sections, namely;

Section A: Demographic information

Age, Gender, Race, Educational status, Employment status, Chronic disease profile and Patients' rating of their own health.

Section B: General facility and healthcare provision

Questions cover PCCOP inputs and perceptions of the programme.

Section C: Medicine management

Patients' perceptions of the programme, e.g., Do pharmacy personnel take sufficient time to advise you on how to use your medicines correctly?

Section D: Communication

Patients' perceptions of the programme, e.g., Do you feel free to discuss your health issues with pharmacy personnel?

Section E: Programme satisfaction

Patients choose their programme satisfaction level.

3.6 DATA COLLECTION PROCEDURES

The data was collected from three categories of participants. That is pharmacy personnel, nursing personnel and patients. All these categories were given a survey questionnaire to answer questions by a way of writing. Patients who did not know how to write were asked questions and the researcher wrote the answers on their behalf.

3.7 DATA ENTRY AND ANALYSIS

The data was captured using Microsoft Excel, and fed into statistical package software system (SPSS version 25.0). Data was then analysed and demographic themes generated. The pharmacy chronic care outreach programme (PCCOP) inputs and outputs, processes were generated. Refer to chapter 4 for results.

3.8 RELIABILITY AND VALIDITY OF DATA

The data collection instruments used during the study was tested for reliability and validity during the pilot study. The clinic that was used during the pilot study was Zebediela Gateway Clinic, and it was not used in the actual study to avoid information bias. After the pilot study, the questionnaires were revalidated.

3.9 BIAS

In research, bias occurs when “systematic error is introduced into sampling or testing by selecting or encouraging one outcome or answer over others (Merriam-Webster dictionary, c2018). Bias can occur at any phase of research, including study design or data collection, as well as in the process of data analysis and publication. Bias is not a dichotomous variable. Interpretation of bias cannot be limited to a simple inquisition: is bias present or not? Instead, reviewers of the literature must consider the degree to which bias was prevented by proper study design and implementation (Pannucci & Wilkins, 2008).

3.9.1 Selection bias

The selection bias is a statistical bias in which there is an error in choosing the individuals or groups to take part in a scientific study. Most often, it refers to the distortion of a statistical analysis, resulting from the method of collecting samples. To minimize this bias, the researcher selected eligible patients registered at the clinics for chronic care using a systematic random sampling method.

3.9.2 Translation bias

The use of English questionnaires on patients could lead to miscommunication and misunderstanding by other respondents who do not understand English, and their answers to the questionnaire can also be affected. To minimize this bias, the researcher used both English and Sepedi questionnaire, which was translated by an accredited translator in order to accommodate patients who preferred using Sepedi.

3.10 ETHICAL CONSIDERATIONS

The following ethical standards were adhered to throughout the study:

3.10.1 Approval

The research proposal was submitted to the School Research and Ethics committee (SREC) for approval. After approval by the SREC, it was submitted to the Faculty Higher Degrees Committee for further approval and then to the Turfloop Research Ethics Committee (TREC) for an ethical clearance certificate. The TREC clearance certificate for the project is TREC/285/2017: GP and is on (Appendix 6).

3.10.2 Informed consent and voluntary participation

The researcher provided participants with a verbal overview of the study. Participants were also given informed consent forms to sign as an agreement that they understood what the study was about. Participation was voluntary and participants had the right to withdraw from the study at any time without any penalty. Participants had the right to not participate in the study, they were not forced, and they had the right to not answer any questions that they were uncomfortable with. Only signed consent forms were used in the study. Therefore, no participants formed part of the study unless they fairly consented (Appendix 5).

3.10.3 Anonymity and confidentiality

The researcher assured participants of the confidentiality of the study. No participant taking part in the study was allowed to furnish their names or identity. The questionnaires were collected by the researcher and not shared with any of the other participants. Only the researcher had access to this information furnished in the survey. The information obtained was only used for research purposes. The data collected will be stored in the University of Limpopo pharmacy department for a period of not less than five years.

3.10.4 Benefits and risks to participants

There are no direct individual benefits for any participants in this study. The potential benefits from this study included obtaining information that would contribute to the overall improvement of the South African Healthcare sector and prepare for the implementation of the universal health coverage and NHI.

The risks associated with participation in this study were no greater than those encountered in daily life, there were however, the inconvenience of the time and effort taken to complete the questionnaires. There was no financial compensation involved for any participant in the study, and they did not receive anything for taking part in this study.

3.11 SUMMARY

This chapter has discussed in full, the research method used. Furthermore, it discussed in detail as well the research design; and the reliability and validity of the study. The next chapter will discuss presentation and interpretations of research findings.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 INTRODUCTION

In this chapter, the findings of the research are presented. The target groups were PCCOP patients attached to feeder clinics; nursing personnel from the six feeder clinics and pharmacy personnel from Zebediela Hospital pharmacy. During data collection, 94.06% of the targeted population was reached. The patient sample size reached was 334, nursing personnel was 44 whilst pharmacy personnel were 18. The sample size was determined on the premise of having a 95% confidence level and a 5% margin of error.

4.2 DATA MANAGEMENT AND ANALYSIS

Data was collected in sequence from nursing personnel, pharmacy personnel and patients. This method allowed data to be grouped into three sample strata as mentioned above. After the data was grouped into the three strata, it was captured into Microsoft Excel® and Statistical package software (SPSS version 25.00). The analysis was done as per objectives of the research which are as follows;

- To assess the perception of pharmacy personnel, nursing personnel and patients regarding quality of care in the PCCOP model.
- To determine the factors affecting the perceived benefits of PCCOP services.
- To assess the perception of pharmacy personnel, nursing personnel and patients regarding feasibility of PCCOP programme.

4.3 SECTION A: DEMOGRAPHICS

In this section, various demographic variables from pharmacy personnel, nursing personnel and patients are discussed. The respective demographics are discussed as per participant group. However, the various demographics in each participant group have been highlighted in each respective participant group.

4.3.1 Pharmacy Personnel

Under the pharmacy personnel participant group, the demographic variables that were studied include age, gender, personnel rank and the length of time spent by personnel on the PCCOP model. In this study, the demographic variables such as gender and age would help to highlight what the pharmacy personnel embarking on the PCCOP model were composed of, because the outreach programme process consists of different physical activities requiring soft to hard handling, e.g., counselling patients on the medicines provided and loading PCCOP medicine kit boxes into and out of the outreach vehicle.

4.3.1.1 Age

There was a total of 18 pharmacy personnel who participated in the pharmacy personnel age range. Therefore, there were 14 pharmacy personnel (valid 72.2%) in the “18-30 years” age group. In the “31-40 years” age group there were 3 (valid 16.7%) whilst in the “41-50 years age” group there were 2 (valid 11.1%). The “51-60 years” age group had no respondents. The pharmacy personnel age range is represented by Figure 4.1 below.

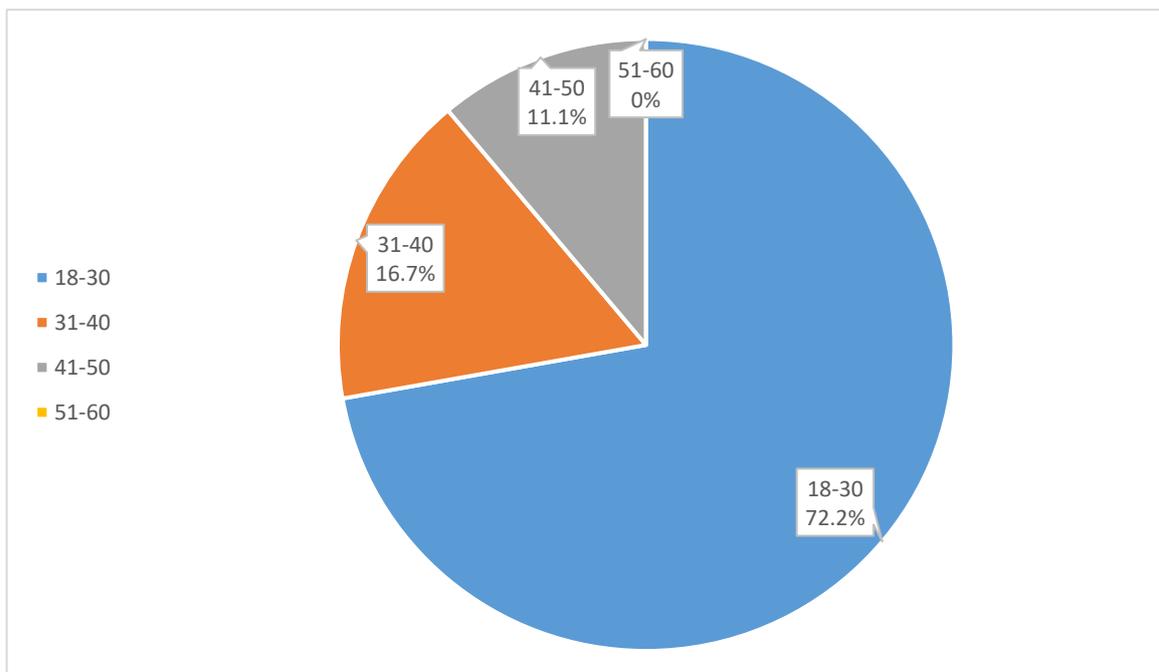


Figure 4.1: Pharmacy personnel age range pie chart

Most pharmacy personnel (72.2%) in this study were below the age of 35 years. The information coincided with the statement from the SAPC (2010) stating that most pharmacists' age fell below the age of 35, and that Limpopo has more than 60% of pharmacists below 35.

4.3.1.2 Gender

There was a total of 18 pharmacy personnel who participated. All 18 participants completed the question on gender. Six out of 18 pharmacy personnel (33.3%) were male. For the female gender there were 12 participants (66.7%). Figure 4.2 below represents the pharmacy personnel gender pie chart.

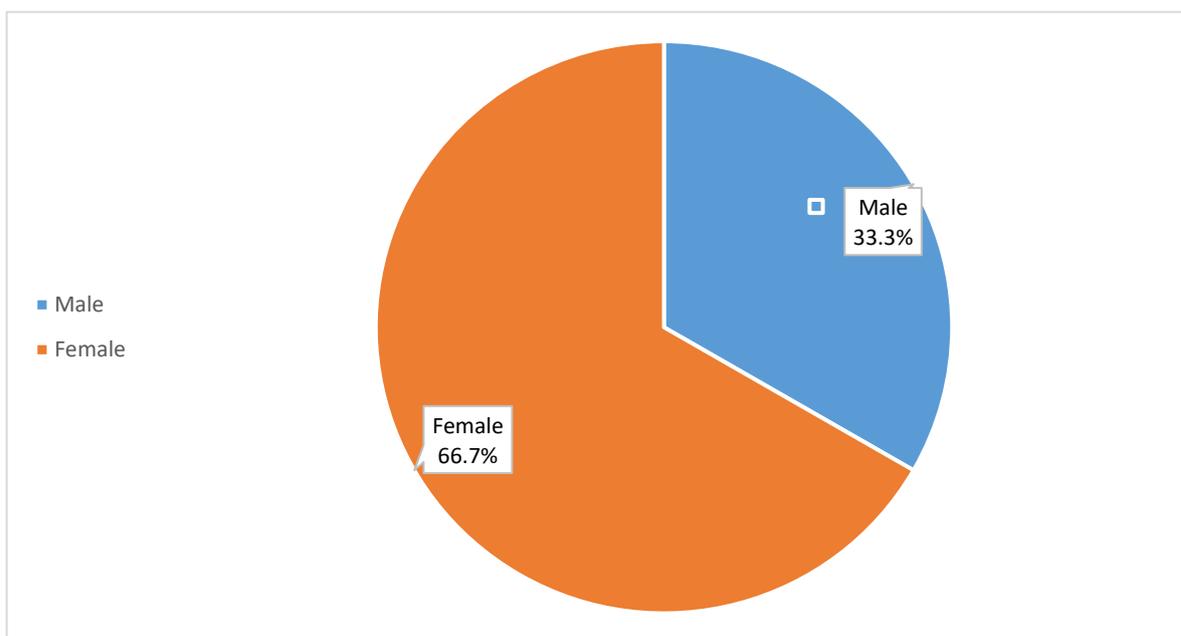


Figure 4.2: Pharmacy personnel gender pie chart

In a report from the SAPC titled Pharmacy Human Resources in South Africa (2011), it was stated that there is a general shift from male to female dominance in the pharmacy workforce in all provinces. The report further showed that more than 50% of pharmacists were female in Limpopo. The results from this study therefore correlate with the SAPC report as mentioned above.

4.3.1.3 Pharmacy personnel rank

Out of 18, two participants (11.1%) did not indicate their rank. The frequency of distribution of rank showed that the Zebediela hospital pharmacy consisted of eight (50%) pharmacists and seven (43.8%) of post-basic basic pharmacist assistant. The other participants who fall under other pharmacy personnel rank was one (6.25%). Figure 4.3 below represents the pharmacy personnel rank pie chart.

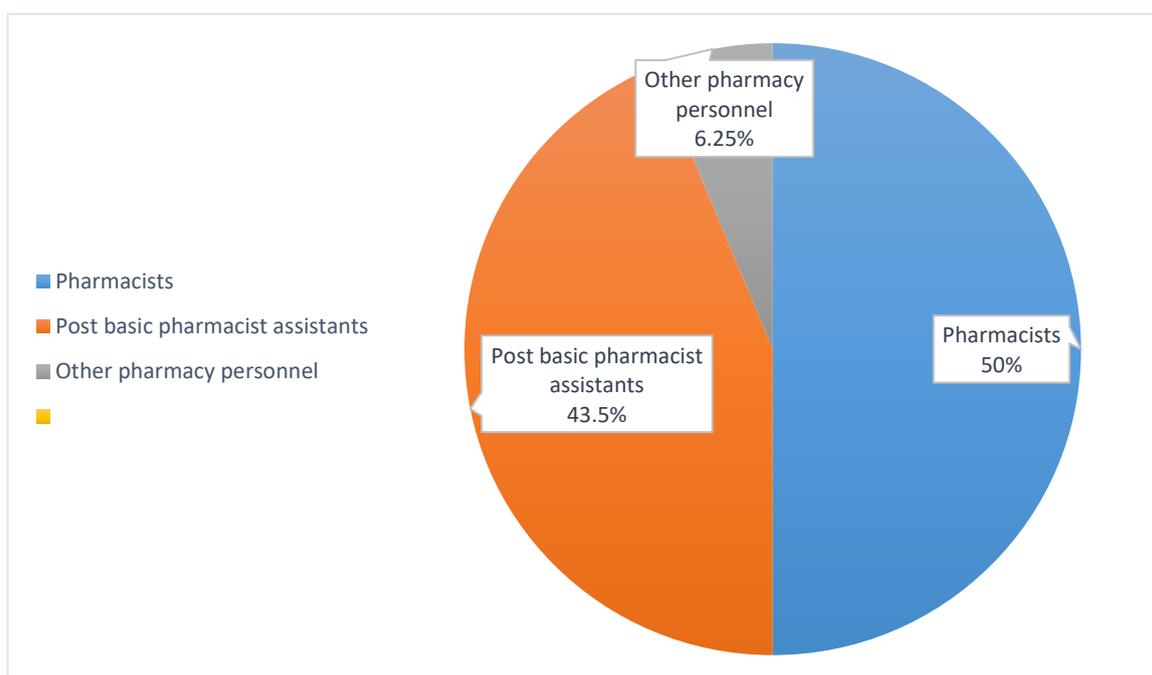


Figure 4.3: Pharmacy personnel rank pie chart

From the above information, it follows that the pharmacist/pharmacist assistant ratio from this study was 1.14:1. The pharmacist/pharmacist assistant ratio was therefore consistent with the ratio from the SAPC (2010) report of Pharmacy Human Resource in South Africa, which stated the ratio including the two learner-pharmacist assistant categories to be 0.94.

4.3.1.4 Time spent by pharmacy personnel on the PCCOP

Out of the 18 pharmacy personnel participants, two (11.1%) did not indicate for how long have they been on the PCCOP model. However, the majority of participants

(87.5%) have indicated that they have spent a minimum of 6 months on the programme. Two (12.5%) post-basic pharmacist assistants interestingly indicated having spent more than 30 months on the PCCOP model compared to zero percent of pharmacists. Figure 4.4 shows the pharmacists, post-basic assistants and other pharmacy personnel had all spent a minimum of six months on the PCCOP at Zebediela. One pharmacist had indicated to have spent more than a year whilst two post-basic assistants reported spending more than 30 months.



Figure 4.4: Pharmacy personnel rank versus length of time spent on PCCOP bar chart

4.3.2 Nursing Personnel

Under nursing personnel, the demographic variables that were studied consisted of age, gender and personnel rank. The reason for studying this was to understand the influence of these variables in Zebediela and how they affect the delivery of PCCOP services.

4.3.2.1 Age

The highest age range was the “41-50 years” with a frequency of seventeen (38.6%) which was congruent with the findings by Tshitangano (2013), which indicated that the highest percentage (46.1%) of nurses was aged 36 to 45 years. The second highest age range was “51-60 years” with a frequency of eleven (25%). The lowest age range recorded was “60+” with a frequency of one (2.3%) whilst the second lowest was the “20-30 years” age range with a frequency of seven (15.9%). Figure 4.5 below represents the nursing personnel age range distribution.

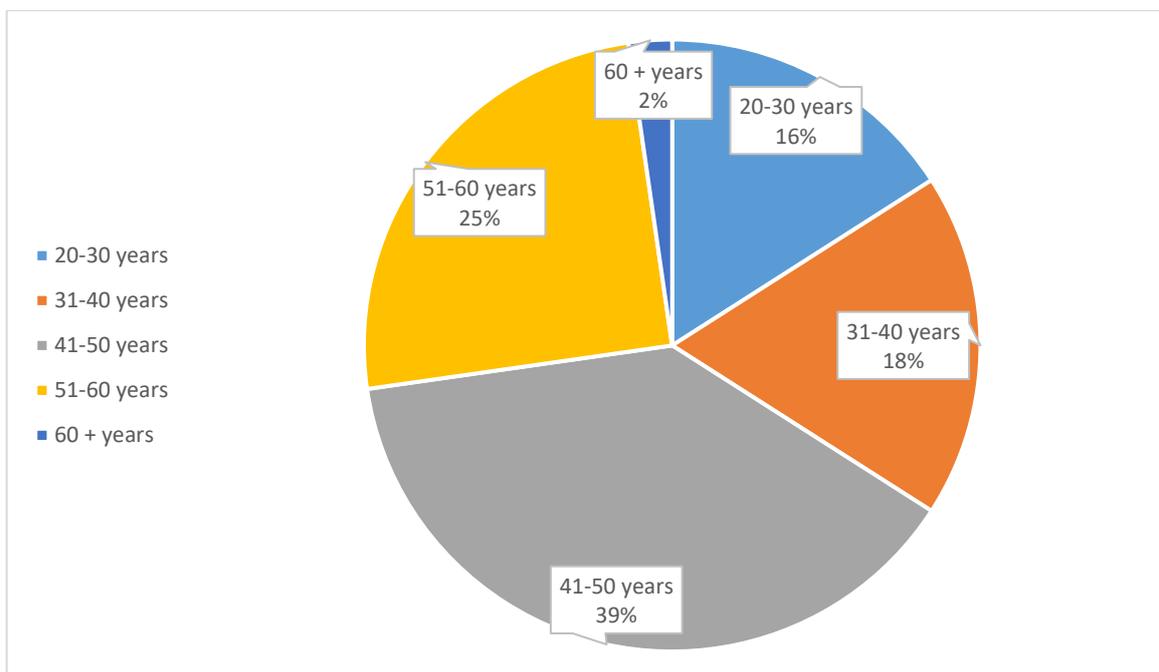


Figure 4.5: Nursing personnel age range pie chart

4.3.2.2. Gender

There were 44 valid nursing personnel participants and all of them participated. As shown in Figure 4.6 below, out of these 44 participants, there were only four males (9.1%) and forty females (90.9%).

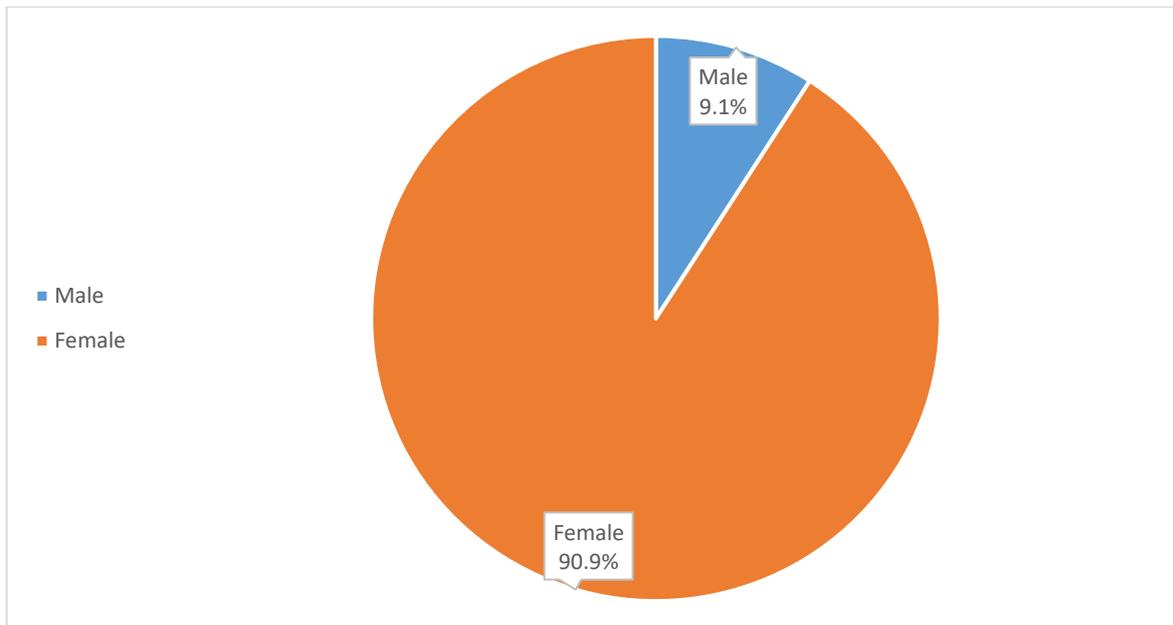


Figure 4.6: Nursing personnel gender pie chart

From the above-mentioned results it shows that the nursing personnel male/female ratio was 1:9.99. The SANC (2019) statistics have however reported to have 10567 male and 1549 female registered nurses, which constitute a male/female ratio of 1:6.52; 5833 male and 645 female enrolled nurses with a ratio of 1:904 and 9300 male 825 female auxiliaries with a ratio of 1:11.27. The average male/female ratio from Limpopo nursing personnel was 1:8.51 as reported by the SANC. Therefore, a nursing personnel male/female of 1:10 at Zebediela was consistent with the ratio from the SANC statistics.

4.3.2.3 Nursing personnel rank

Out of the total 44 participants (Figure 4.7), nursing personnel were of mainly two categories. Professional nurses were twenty-three (52.3%) and enrolled nurse or other were twenty-one (47.7%).

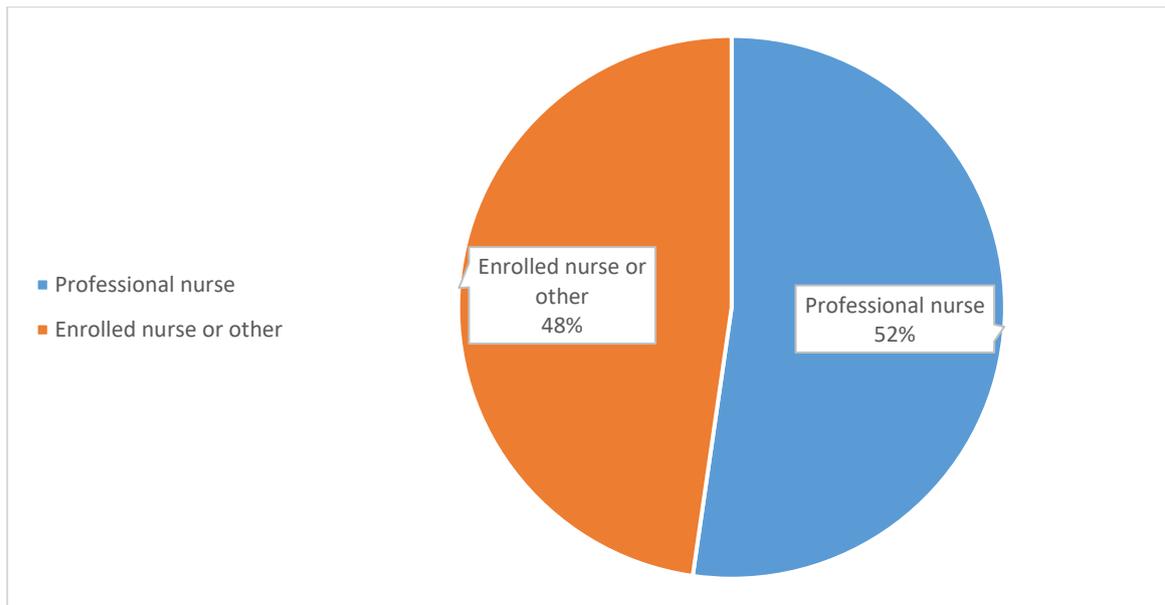


Figure 4.7: Nursing personnel rank pie chart

4.3.3 Patients

Under this participant group, the demographic variables that were studied include age, gender, race, educational status, socio-economic status, patient chronic disease profile and patient's rating of their own health. Besides the age and gender demographics, it was important to have a demographic profile of the patients' race, chronic disease profile and so forth. The chronic disease profile would help health care workers know the chronic diseases prevalent at Zebediela and their proportionality when compared with other popular chronic diseases.

4.3.3.1 Age

There was a total of 334 patients who participated in the study. Out of the 334 participants 332 indicated their age. As shown in figure 4.8 below, there were 13 patients (3.9%) for the "20-30 years" age group. For the "31-40 years" age group the frequency was 21 (6.3%) whilst the "41-50 years age" group had 45 (13.6%). The "51-60 years" age group had the second highest number of patients at 88 (26.5%) whilst the highest age group "more than 60 years" had a frequency of 165 (49.7%). Furthermore, the Pearson correlation test of patient age and patient socio-

economic status showed that there was a positive correlation between patient age and socio-economic status, and the correlation is significant at $p=0.01$.

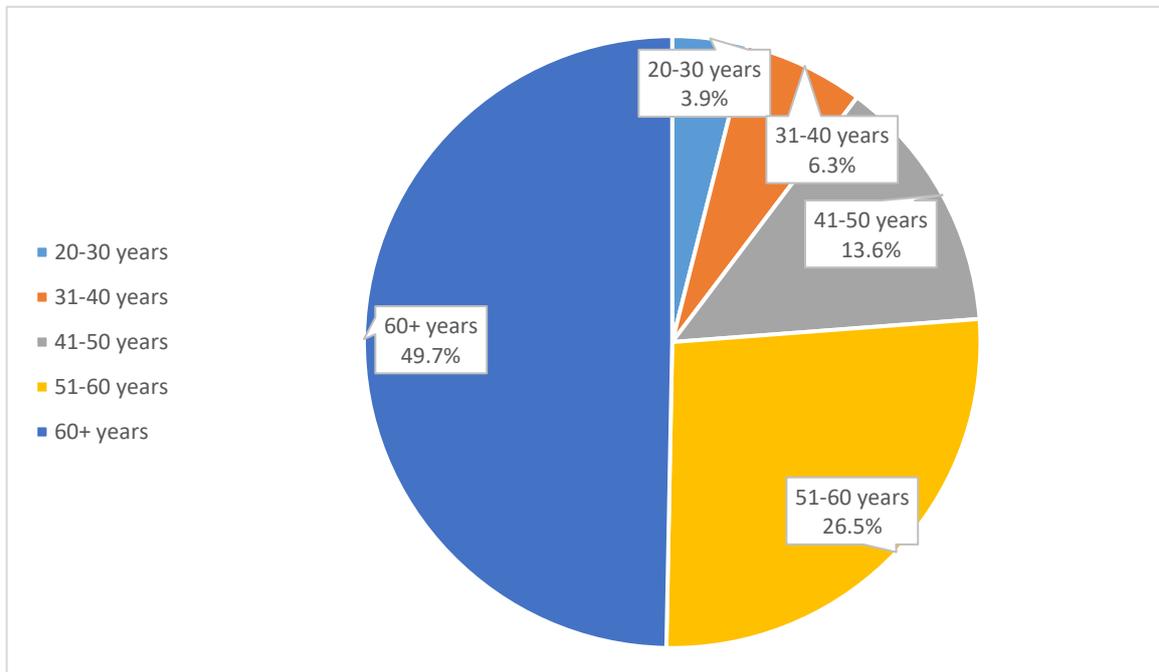


Figure 4.8: Patient age pie chart

The above findings therefore showed a direct proportional relationship between an increase of patients' age and a frequency increase to chronic diseases propensity. Prasad *et al* (2012), have corroborated the above findings by asserting that there has been a well-established incidence of chronic disease rise sharply with age and that the majority of patients with chronic ailments are over the age of 65 years.

4.3.3.2 Gender

For the patient gender, 331 patients out of 334 indicated their gender whilst three were missing (0.9%). Male patients had a frequency of 76 (23%) whilst female patients had a frequency of 255 (77%). The information is depicted as in Figure 4.9 below.

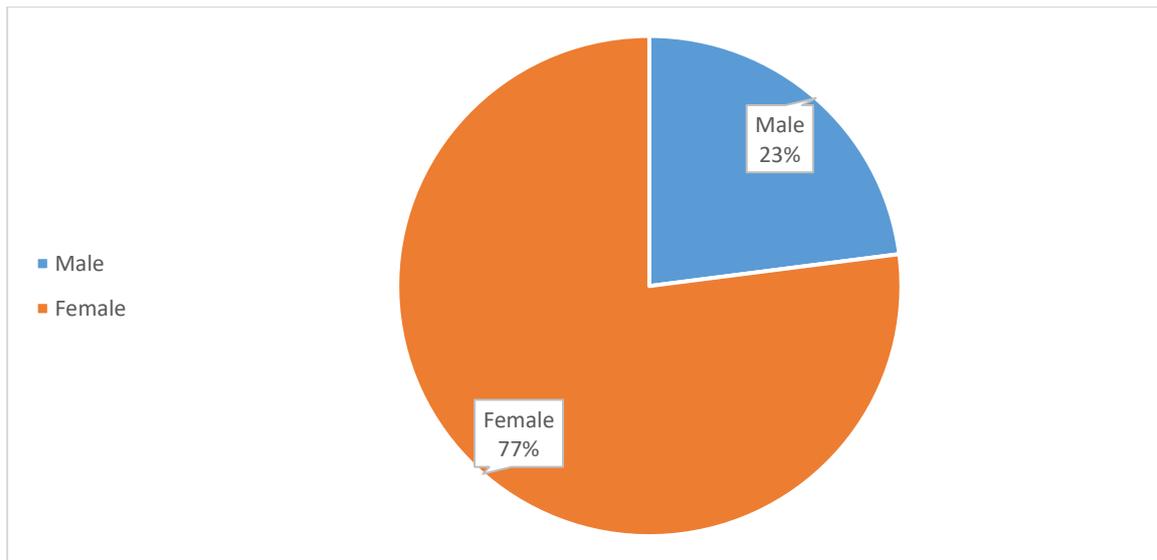


Figure 4.9: Patient gender pie chart

The Statistics South Africa General Population Report (2011) stated that there were more females than males in the general population. The only difference noted from the report is that the gender difference was fairly balanced with (51%) for females and (49%) for males. In the study by Thompson *et al* (2016), titled “The influence of gender and other patient characteristics on health-care seeking behaviour”, the patients’ self-reports indicated that women visited their primary care provider to a greater extent than men for both physical and mental health concerns. Therefore, the afore-mentioned findings were consistent with gender findings in this study.

4.3.3.3 Race

For patient race, 331 patients responded to the question. The other three (0.9%) were left unanswered. Out of 331 there were 325 patients (98.2%) who indicated their race as “black” (Figure 4.10). Two patients (0.6%) reported their race as white. The other two patients (0.6%) indicated that they were “coloured” whilst another two (0.6%) indicated that they fell under other unmentioned race groups.

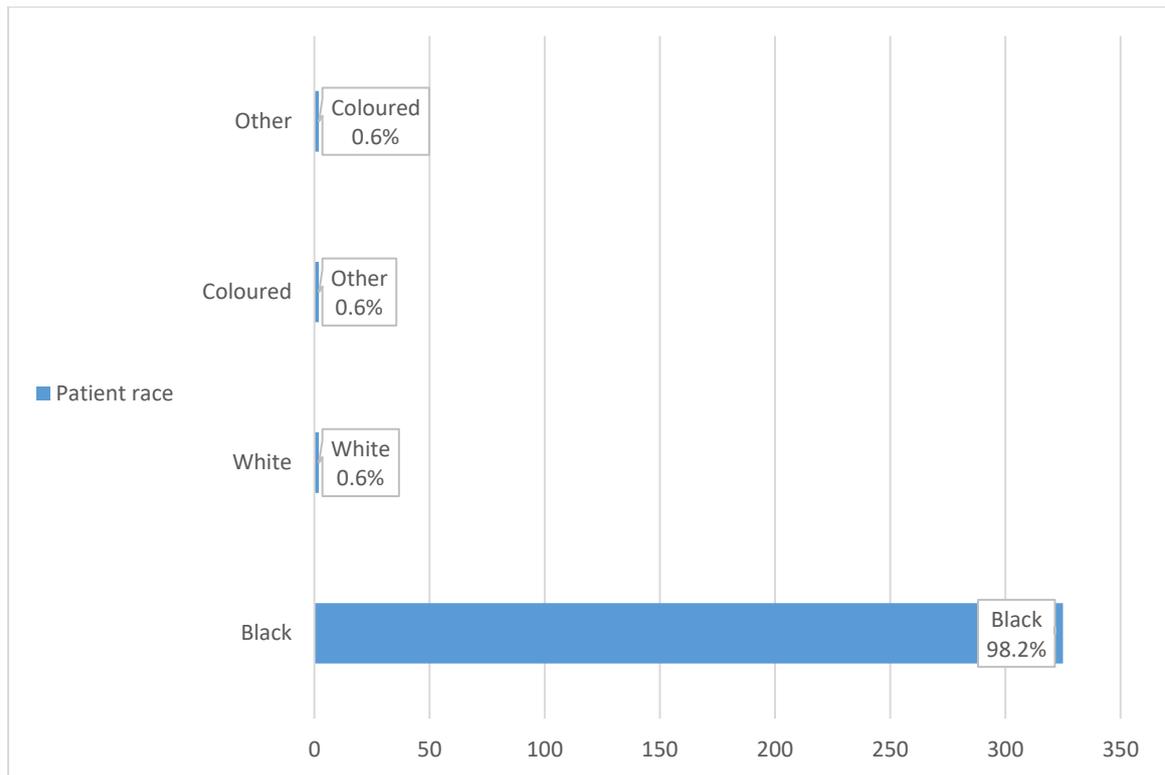


Figure 4.10: Patient race pie chart

Zebediela falls under Lepelle-Nkumpi municipality, and StatsSa (2019) showed that there were 0.1% Asians/Coloureds; 0.1% Indians, 0.1% Whites, 0.1% other races and 99.6% of Black Africans. Therefore, the patient race from the PCCOP study in Zebediela matched the Lepelle-Nkumpi population statistics.

4.3.3.4 Educational status

For the patient educational status, 333 patients out of 334 responded to the question. The frequency of patients who never went to school was 61 (18.3%). The frequency of patients whose highest educational status was primary school was 134 (40.2%). The frequency of patients whose highest educational status was high school was 111 (33.3%) whilst those who have post high school education was 27 (8.1%). The information is depicted in Figure 4.11 below.

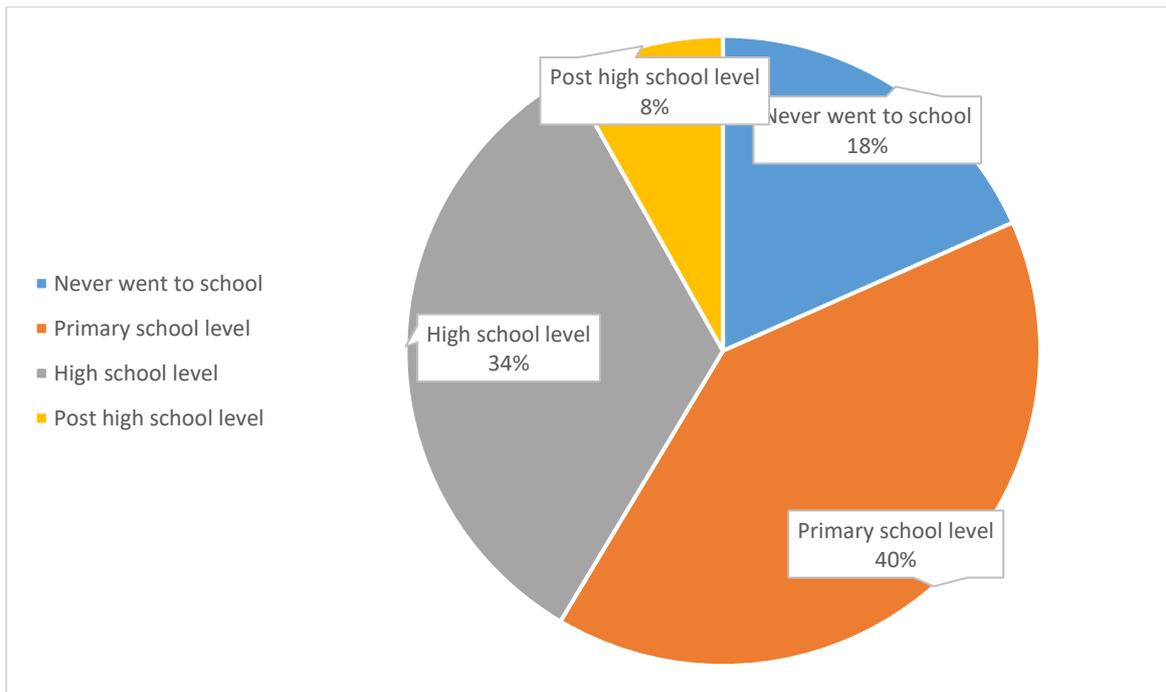


Figure 4.11: Patient educational status pie chart

Data was compared to the StatsSa (2011) population statistics. Except for the two outliers which were the percentage of those who never went to school at 2.2% and the tertiary education at 1.3%, the research findings were correlating with the findings of a research that investigated the association of educational attainment with chronic disease and mortality, in the sense that only 8.1% of study participants had post-high school education. The results of the afore-mentioned study showed that higher educational attainment was associated with lower prevalence of chronic conditions such as hypertension, diabetes and cardiovascular diseases (Choi *et al.*, 2011).

4.3.3.5 Patient socio-economic status

The number of patients that were self-employed was 36 (10.8%). The number of patients that were employed was 23 (6.9%). The number of patients that were unemployed was 180 (54.1%) whilst the number of the retired patients was 94 (28.2%).

The reason there were less patients who were employed could be attributed to the fact that more than 50% of patients were over the age of 60+ years. The other possible reasons could be the 48.1% unemployment rate at Lepelle-Nkumpi municipality as cited by StatsSa (2011). Following a study by Potkul (2018), it was found that patients with low socio-economic status had increased risk for chronic diseases. The patient socio-economic status is represented by Figure 4.12 below.

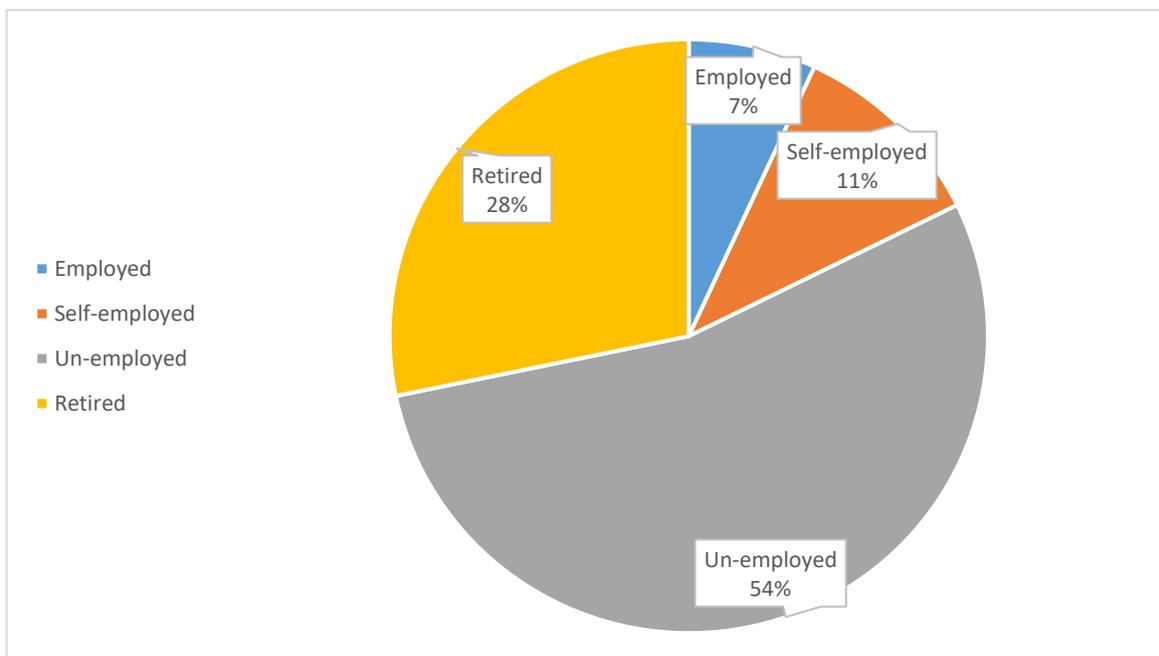


Figure 4.12: Patient socio-economic status pie chart

4.3.3.6 Patient chronic disease profile

For this question, the response rate was 97.9% and there were 327 responses and seven missing responses. Patients were asked to tick the different chronic disease conditions out of the four; though they were also instructed to indicate if they had more than one or all. From the dichotomy group table (Table 4.1), it shows that there were 209 (50.9%) patients with hypertension in 63.9% of the cases. Diabetes mellitus had 74 patients (18%) in 22.6% of the cases whilst epilepsy had 18 patients (4.4%) in 5.5% of the cases. The other chronic conditions not listed had 110 patients (26.8%) in 33.6% of the cases. It is therefore assumed that these other chronic conditions comprised of stigmatised illnesses such as mental health and HIV/Aids among others. It is also worth noting that the majority of patients, 25.7% had more than one chronic disease as the total for the percentage of cases was 125.7%.

Table 4.1: Patient chronic disease profile frequency distribution n=327

Disease	Responses		Percent of Cases
	N	Percent	
Diabetes mellitus	74	18.0%	22.6%,
Hypertension	209	50.9%	63.9%
Epilepsy	18	4.4%	5.5%
Other	110	26.8%	33.6%
Total	411	100.0%	125.7%

a. Dichotomy group tabulated at value 1.

4.3.3.7 Patient's rating of their current health status

Out of these 334 patients, there were 329 answers. The results show that 17 patients (5.2%) indicated their health as very poor; another 38 (11.6%) indicated their health as poor, another 192 (58.4%) indicated their health as moderate. The other 68 patients (20.7%) have indicated their health as being good, 14 patients (4.3%) have also indicated their health as very good. Figure 4.13 below represents the patients' rating of their current health status.

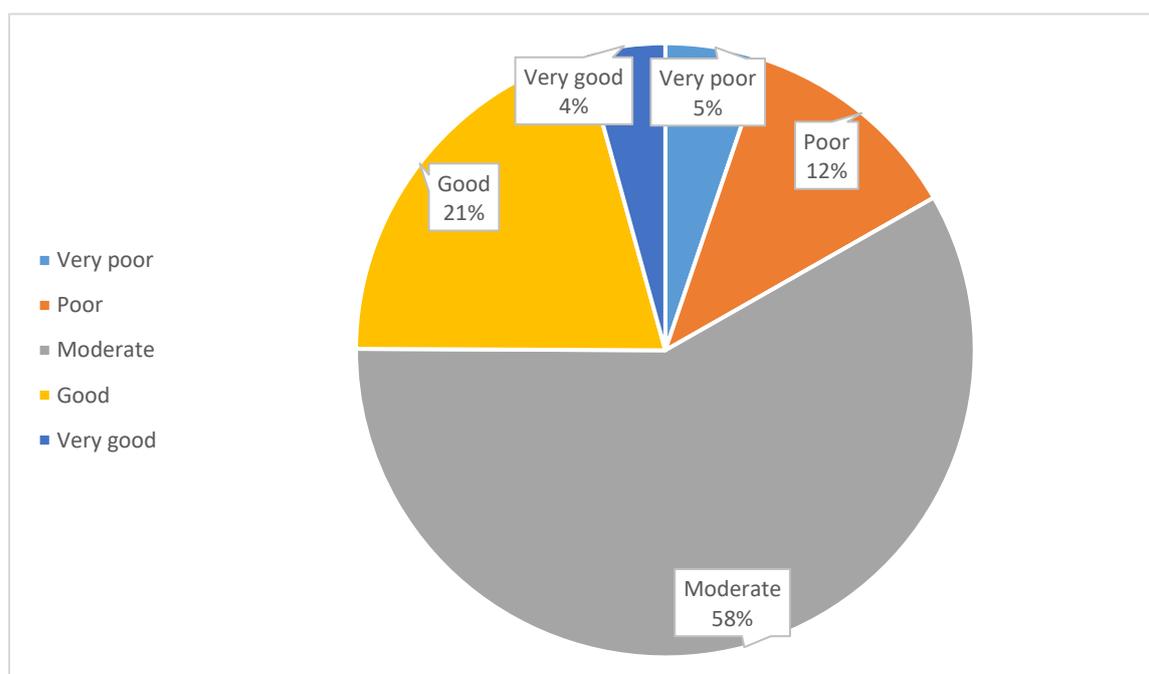


Figure 4.13: Patients' rating of their current health status pie chart

The percentage mentioned suggests that patients on the PCCOP do not generally rate their health as that bad. The patients' high rating of their own health correlates with their satisfaction with the PCCOP programme where 87.7% of patients indicated satisfaction. In a study titled 'Self rated health and mortality: a long-term prospective study in Finland', it was concluded that self-rated health is a strong predictor of subsequent mortality among men and women; and that self-ratings usually deteriorates with age (Heistaro *et al.*, 2001).

4.3.3.8 Relationship between demographics and health status.

Patients' rating of their current health status is a nominal variable. To find out if a relationship existed between the variable and other demographic variables, a chi-squared test was run on SPSS to verify if the p-value was greater or less than an α of 0.05. The null hypothesis was that there is no relationship between patients' rating of their health status and other patients' demographic variables.

Table 4.2 below depicts patients' rating of their current health status versus age range. The p-value was less than 0.05, therefore the null hypothesis was rejected and it was concluded that there was a relationship between patients' age range and the rating of their current health status.

Table 4.2: Patients' rating of their current health status versus age range n=165

Age range	No of patients	Patients' rating of their current health status					Chi-squared test
		Very poor	Poor	Moderate	Good	Very good	
20-30 years	13	2	1	4	6	0	P=0.036
31-40 years	21	1	4	12	3	1	
41-50 years	43	3	4	17	14	5	
51-60 years	88	5	7	54	19	3	
60+ years	162	6	22	103	26	5	
Total	327	17	38	190	68	14	

Table 4.3 below depicts patients' rating of their current health status versus gender. The p-value was greater than 0.05, therefore the null hypothesis was maintained and it was concluded that there was no relationship between patients' gender and the rating of their current health status.

Table 4.3: Patients' rating of their current health status versus gender n=327

Gender	No of patients	Patients' rating of their current health status					Chi-squared test
		Very poor	Poor	Moderate	Good	Very good	
Male	76	5	8	41	19	3	P=0.804
Female	251	12	30	149	49	11	
Total	327	17	38	190	68	14	

Similarly, table 4.4 below depicts patients' rating of their current health status versus race. The p-value was greater than 0.05, therefore the null hypothesis was maintained and it was concluded that there was no relationship between patients' race and the rating of their current health status. However, this could be attributed to the fact that majority of patients (98%) of them were of same race group resulting in insignificant effect.

Table 4.4: Patients' rating of their current health status versus race n=326

Race	No of patients	Patients' rating of their current health status					Chi-squared test
		Very poor	Poor	Moderate	Good	Very good	
Black	320	17	35	186	68	14	P=0.782
White	2	0	1	1	0	0	
coloured	2	0	0	2	0	0	
Other	2	0	1	1	0	0	
Total	326	17	37	190	68	14	

Patients' rating of their current health status by educational status is depicted in table 4.5. The p-value was greater than 0.05, therefore the null hypothesis was maintained and it was concluded that there was no relationship between patients' educational status and the rating of their current rating health status.

Table 4.5: Patients' rating of their current health status versus education n=328

Education	No of patients	Patients' rating of their current health status					Chi-squared test
		Very poor	Poor	moderate	Good	Very good	
Never went to school	59	4	9	35	10	1	P=0.334
Primary school level	133	8	16	84	22	3	
High school level	109	3	10	59	29	8	
Post high school	27	2	3	13	7	2	
Total	328	17	38	191	68	14	

Similarly, table 4.6 below depicts patients' rating of their current health status by socio-economic status. The p-value was greater than 0.05, therefore the null hypothesis was maintained and it was concluded that there was no relationship between patients' socio-economic status and the rating of their current health status.

Table 4.6: Patients' rating of their current health status versus socio-economic status n=328

Socio-economic status	No of patients	Patients' rating of their current health					Chi-squared test
		Very poor	Poor	Moderate	Good	Very good	
Self-employed	35	4	4	19	5	3	P=0.645
Employed	22	1	4	13	4	0	
Unemployed	178	10	21	103	38	6	

Retired	93	2	9	56	21	5
Total	328	17	38	191	68	14

The above outcomes indicated for relationship between demographics and health status correlates well with similar studies conducted in South Africa. In a study conducted in South Africa by Phaswana-Mafuya *et al* (2013), it was indicated that the age and race had a significant correlation to health status, where the age group of 60 to 69 years were associated with higher number of NCD risk factors among the black and coloured populations. Marital status, educational level, wealth and residence were not significantly associated with the number of NCD risk factors experienced.

4.4 SECTION B: GENERAL FACILITY AND HEALTHCARE PROVISION.

In this section, the PCCOP was assessed for those factors which affect the general facility and healthcare provision. Most programme evaluations are done to assess either programme inputs, programme processes, programme outputs and/or programme outcomes. All those above-mentioned programme components were regarded as factors affecting the delivery of PCCOP services. In this section, these factors were being investigated.

4.4.1 Pharmacy personnel allocated to offer PCCOP service

Pharmacy personnel were asked to indicate the allocation and adequacy of allocated personnel to deliver the PCCOP services to patients at clinics. One participant (5.6%) reported that the number is usually two to three whilst 17 (94.4%) reported a more than three. Consequently, 14 (77.8%) indicated that the “more than three” pharmacy personnel were needed to deliver the services efficiently. However, only 4 (22.2%) indicated that two to three would suffice.

To achieve the effective running of the outreach programme, the pharmacist to patient ratio should be set at a level that is acceptable. The correct pharmacy

personnel staffing therefore helps the patients to receive quality pharmacy services such as medicine counselling. For the outreach programme at Zebediela, it was important to find out how many pharmacy personnel go out for the PCCOP. Haggan (2018), stated that pharmacists were concerned about low pharmacist-to-patient ratios which meant high workloads, leading to patients being put at risk and conflict with other health professionals.

4.4.2 Mode of transport used

The mode of transport used by pharmacy personnel for delivering PCCOP services were tabulated to find their frequent mode of transport to clinics. Table 4.7 indicated that majority of pharmacy personnel (71.4%) have always used the hospital transport to get to PCCOP sites.

Table 4.7: Mode of transport used to reach PHC clinics n=18

		Responses		Percent of Cases
		N	Percent	
Mode of transportation to the clinics.	Never use public transport	1	4.8%	5.6%
	Sometimes use private /own transport	2	9.5%	11.1%
	Always use hospital transport	15	71.4%	83.3%
	Sometimes use hospital transport	3	14.3%	16.7%
Total		21	100.0%	116.7%

a. Dichotomy group tabulated at value 1.

4.4.3 Arrival of pharmacy team at the clinic

As much as waiting time is important, it can be lengthened by the pharmacy team's arrival time at the clinic. Arrival time was therefore also evaluated. The responses

were from pharmacy personnel, nursing personnel and patients. Below are the responses as obtained.

4.4.3.1 Response from pharmacy personnel

Out of the 18 pharmacy personnel who participated, there were 17 answers and one missing answer to the question. For this question, 76.4% (13) of pharmacy personnel showed that they sometimes arrived at the clinic on time. The other two pharmacy personnel (11.8%) replied that they never arrived on time. For the options “always” and “rarely”, each respondent (valid 5.9%) chose the options.

4.4.3.2 Response from nursing personnel

Ten nursing personnel (22.7%) indicated that pharmacy personnel always arrived on time for their PCCOP visits. Thirty-four nursing personnel (77.3%) have indicated that pharmacy personnel sometimes arrived on time for their PCCOP visits.

4.4.3.3 Response from patients

Out of the 334, there were 329 responses for this question while 5 were missing. There were 125 patients (38%) who indicated that pharmacy personnel always arrived on time at the clinic for their PCCOP visits. There were also 139 patients (42.2%) who indicated that pharmacy personnel sometimes arrived on time at the clinic. However, another 44 patients (13.4%) have indicated that pharmacy personnel rarely arrive on time whilst 21 patients (6.4%) indicated that pharmacy personnel never arrive on time for their PCCOP visits.

It is a fact that the pharmacy personnel arrival time at the clinic will affect the waiting time for a patient that waits for service. To investigate the waiting time in this study, the researchers were prompted to investigate the pharmacy arrival time for the PCCOP. Tegabu (2008), highlighted that long waiting times at public health facilities were primarily due to mismatch of patient arrival (arrived too early) and service commencement, and staff inefficiencies in prioritizing attending to patients. Other common causes of high waiting times such as logistical problems, flow problems,

queuing problems and a high workload, were surprisingly not causal factors at these facilities.

4.4.3.4 Reasons for late arrival at the clinic

Table 4.8 shows the number of valid responses and the percentages. The majority of pharmacy personnel (36.6%) responses reported that pharmacy personnel covered more than one clinic per day. A lower number of 14.6% responses reported that pharmacy personnel were burdened with additional responsibilities as the main reason.

Table 4.8: Reasons for PCCOP teams to arrive late at PHC clinics n=18

		Responses		Percent of Cases
		N	Percent	
Reasons for PCCOP team to arrive late at PHC clinics.	The pharmacy team covers more than one clinic per day to offer PCCOP services	15	36.6%	93.8%
	Time is lost at the hospital level when pharmacy personnel fill up PCCOP medicine kit boxes	11	26.8%	68.8%
	Time is lost at hospital level waiting for transport	9	22.0%	56.3%
	Pharmacy personnel team offering PCCOP services are burdened with additional responsibilities	6	14.6%	37.5%
Total		41	100.0%	256.3%

a. Dichotomy group tabulated at value 2.

Pharmacy personnel were given a chance to state their other own reasons why PCCOP teams arrived late at the clinics. For this question, only two pharmacy personnel stated their own reasons as cited below;

1. *“Some personnel arrive at work late.”*

2. *“Time is lost at hospital level when junior pharmacy personnel are waiting for their seniors for supervision purposes.”*

4.4.4 Standard Operating Procedures

4.4.4.1 Response from pharmacy personnel

The majority of pharmacy respondents, eight (47.1%) reported that they do not have a PCCOP standard operating procedure. The respondents that were not sure about the answer were four (23.5%) whilst five (29.4%) respondents said that the SOP is available.

4.4.4.2 Response from nursing personnel

The number of nursing personnel who said they had the PCCOP model SOP in their facility is 21 (47.7%). The number of nursing personnel who indicated that they do not have an SOP was 14 (31.8%). However, nine nursing personnel (20.5%) indicated that they were not sure if they had the PCCOP model SOP in their facility.

4.4.5 Dispensary conditions at clinics

As part of medicines management, the storage conditions of medicines and dispensary conditions had to be evaluated. Pharmacy personnel also gave suggestions to improve dispensary conditions. The responses were gathered from pharmacy personnel and nursing personnel.

4.4.5.1 Response from Pharmacy personnel

Out of 18 pharmacy personnel who participated in the study, the response rate to this question was 100%. 77.8% (14) of the respondents indicated that there is a space problem in the clinics, whilst four (22.2%) believed that there was user-friendly space in the clinic for storage of medicine and PCCOP dispensing.

Nine respondents (52.9%) indicated that the dispensaries in PHC clinics were fitted with air-conditioners for temperature control, whilst eight (47.1%) did not believe so.

4.4.5.2 Response from nursing personnel

Eighteen respondents out of forty-four nursing personnel (40.9%) indicated that the clinics do have facilities of the right standard for the pharmacy personnel to perform their job effectively. However, 24 nursing personnel out of 44 (54.5%) do not agree that the clinics have the facilities of the right standard for the pharmacy personnel to perform their job effectively. The other nursing personnel with a frequency of two (4.5%) were not sure.

4.4.5.3 Suggestions for improving dispensary conditions

There were three possible solutions suggested in the questionnaire. Out of these three, the participants responded around only two. Nine (75%) of respondents preferred that the Limpopo Department of Health provide an insulated vehicle to serve as a mobile pharmacy whilst seven (58%) preferred that the Limpopo Department of Health build spacious dispensaries in state clinics.

Out of all respondents, only one had an additional own recommendation that was not included in the suggestion list.

1. *“Adequate room created at the pharmacy will also assist clinic staff to keep said stock at the clinic, avoiding the issue of always having to carry stock around.”*

4.4.6 Waiting time for collecting medicines

To understand the PCCOP further, the study assessed waiting time to collect medicines. Responses came from patients and nursing personnel. Below are the responses from the afore-mentioned participants.

4.4.6.1. Response from patients

There were 27 patients (8.2%) who indicated that they spend less than 30 minutes collecting medication from the pharmacy clinic; another 51 (15.4%) indicated that

they spend 30 minutes to an hour whilst 217 (65.6%) showed that they waited more than two hours to collect medicines. Regarding patients' travelling time to the clinic, 46 patients (14%) who indicated that they travel in 1 hour to two hours whilst the other 217 (65.6%) indicated that they spend more than two hours.

There were 233 patients (71%) who agreed that they were satisfied with the pharmacy timing for medicine collection; however, another 85 (25.9%) disagreed that they were satisfied with the pharmacy timing for medicine collection. The number of patients who were not sure if they were agreeing with the pharmacy timing for medicine collection stood at 10 (3%).

4.4.6.2 Response from nursing personnel

Thirty nursing personnel (68.2%) indicated that they think that the PCCOP model reduces patient waiting time. Ten nursing personnel (22.7%) on the contrary, indicated that they do not think the PCCOP model reduces patient waiting time. Four nursing personnel (9.1%) have indicated that they are not sure if the PCCOP model does reduce patient waiting time.

Oche & Adamu (2013) emphasized that the amount of time a patient waits to be seen is one factor which affects utilization of healthcare services. Patients perceive long waiting times as barrier to actually obtaining services and keeping patients waiting unnecessarily can be a cause of stress for both patient and doctor.

4.4.7 Management of the PCCOP patient booking

For this question, there was only one missing response from the 18 pharmacy personnel who participated. Ten pharmacy personnel (58.8%) indicated that all booked patients sometimes get help on time. However, two of pharmacy personnel (11.8%) reported that all booked patients at PHC clinics rarely get help on time.

Sixteen out of eighteen respondents (88.9%) indicated that they believed the PCCOP patient booking system and registration system needed to be managed efficiently by the nursing personnel to enable proper delivery of the services. On the

contrary, only 11.1% did not believe that the PCCOP patient booking system needed to be managed.

Nine pharmacy personnel (45% response rate) indicated that the major reason for delayed PCCOP services at the clinic was that the clinic personnel book an uneven and large number of patients. The other reason for delayed PCCOP services as indicated by pharmacy personnel was that there were only a few PCCOP members as a consequence of work absenteeism or unmanaged leaves. The number of respondents to this reason was 5 (25%). The least scored reason on the list was that delayed service is caused by lack of a driver, with 3 respondents (15%). Table 4.9 below shows the reasons for delayed PCCOP services.

Table 4.9: Reasons for delayed PCCOP services n=18

		Responses		Percent of Cases
		N	Percent	
Reasons for delayed PCCOP service at clinic^a	The clinic personnel book an uneven and big number of patients	9	45.0%	81.8%
	There is no driver	3	15.0%	27.3%
	Few PCCOP team members as a consequence of work absenteeism or unmanaged leaves	5	25.0%	45.5%
	There is no vehicle	3	15.0%	27.3%
Total		20	100.0%	181.8%

a. Dichotomy group tabulated at value 2.

4.4.8 The effect of PCCOP on workload at the clinics

To understand the effect of PCCOP on the workload at clinics, nursing personnel were asked for their response as it affects them directly. Twenty-three nursing personnel out of forty-four (52.3%) have indicated that they think the PCCOP model

increases workload to the nursing personnel. On the other hand, twenty out of forty-four nursing personnel (45.5%) have indicated that they do not think the PCCOP model increases workload to the nursing personnel. Only one nursing staff member (2.3%) indicated that they were not sure if the PCCOP model does increase workload to the nursing personnel.

4.5 SECTION C: MEDICINE MANAGEMENT

In this section, particular focus is put on the medicine management element of the PCCOP. The factors that were assessed include medicines availability, medicines labelling and others. Improvement in patient clinical outcomes was also assessed as it emanates from good medicine management.

4.5.1 Availability of medicines

The aim of the PCCOP is to provide medicines to patients on chronic care. The aim cannot be achieved without availability of medicines. It was therefore necessary to evaluate the availability of medicines to see if patients got all their medicines as prescribed. Responses were gathered from patients, nursing personnel and pharmacy personnel. The results are shown below.

4.5.1.1 Response from patients

There were 217 patients (66%) who indicated that they always received their medicines as prescribed by the doctor; another 84 (25.5%) indicated that they sometimes received their medicines as prescribed by the doctor; another 23 (7%) who indicated that they rarely received their medicines as prescribed by the doctor whilst the other 5 (1.5%) indicated that they never received their medicines as prescribed by the doctor.

4.5.1.2 Response from nursing personnel

Twenty-six nursing personnel out of forty-four (59.1%) indicated that with the PCCOP model in place, there are less incidences of out-of-stock medicines to

patients. Twelve patients out of forty-four nursing personnel (27.3%), conversely believe that the PCCOP model does not reduce incidences of out-of-stock medicines to patients. However, six nursing personnel (13.6%) have indicated that they are not sure if the PCCOP model reduced incidences of out-of-stock medicines to patients.

4.5.1.3 Response from pharmacy personnel

Nine out of 18 pharmacy personnel participants (50%) indicated that they always carry sufficient stock to cover every patient’s prescription whilst the other nine (50%) indicated that they sometimes carry sufficient stock to cover every patient’s prescription during PCCOP outreach. There were no tallies for the options “never” and “rarely”.

4.5.1.4 Reasons for stock out’s during PCCOP

As shown in Table 4.10, eleven pharmacy personnel participated as respondents. The number of missing participants was seven. Nine responses (81.8%) indicated that the reasons for not carrying sufficient stock were that stock availability levels were down at the Limpopo Province Pharmaceutical Depot. Two pharmacy personnel however felt that the reason for not carrying sufficient stock was that it was not possible to carry every medical/medicinal item on the PCCOP.

Table 4.10: Reasons why PCCOP teams do not carry sufficient stock n=11

	Responses		Percent of Cases
	N	Percent	
Reasons for not carrying sufficient stock^a			
Stock availability levels are down at the Limpopo Province Pharmaceutical Depot	9	81.8%	90.0%
It is not possible to carry every medical/medicinal item	2	18.2%	20.0%

Total	11	100.0%	110.0%
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a. Dichotomy group tabulated at value 1.

Under remarks for this question, one pharmacy staff member expressed what the other reasons for not carrying enough stock were:

1. “Responsibilities of refilling stock are often given to one person, then they tend to forget certain items.”

4.5.2 Receiving of medicines on time

Out of the 334 participants, there were 329 responses to this question and 5 were left open. There were 214 patients (65%) who indicated that they always received medicines on time; another 71 (21.6%) indicated that they sometimes received medicines on time; 39 (11.9%) who indicated that they rarely receive medicines on time whilst the other 5 (1.5%) indicated that they never receive medicines on time.

On receiving medication from both clinic and pharmacy on the same day, 156 patients (47.9%) indicated that they always receive medicines from the clinic and Zebediela Hospital Pharmacy on the same day; another 39 (12%) indicated that they sometimes receive medicines from the clinic and Zebediela Hospital Pharmacy on the same day; another 16 (4.9%) indicated that they rarely receive medicines from the clinic and Zebediela Hospital Pharmacy on the same day whilst the other 115 (35.3%) indicated that they never receive medicines from the clinic and Zebediela Hospital Pharmacy on the same day.

4.5.3 Medicine labelling and directions

There were 334 patients who participated in the study. Out of this 334, there were 323 completed for this question and 11 did not answer. There were 293 patients (90.7%) who agreed that the medicines were labelled with clear directions on how to use; however, another 23 (7.1%) disagreed that the medicines were labelled with

clear directions on use. The number of patients who were not sure if the medicines were labelled with clear directions on how to use stood at 7 (2.2%).

4.5.4 Improvement in patient clinical outcomes

4.5.4.1 Response from pharmacy personnel

During PCCOP visits, it is understood that pharmacy personnel dispense medicines to patients. It is therefore questionable what is it that pharmacy personnel were doing to maximise medication therapy. One of the questions in this survey was to check if pharmacy personnel track patients' health outcomes to check if therapy was working. Only 27.8% said they track patients over time to check their progress. 16.7% said that they never track patients over time whilst 33.3% said they rarely track patients over time.

4.5.4.2 Response from nursing personnel

This question was answered by 44 nursing personnel and there were no missing answers. Twenty-seven nursing personnel out of 44 (61.4%) indicated that they agree that the PCCOP model has improved patient clinical outcomes. The other ten nursing personnel (22.7%) indicated that they were not sure if the PCCOP model improved patient clinical outcomes. The remaining seven nursing personnel (15.9%) have however disagreed that PCCOP model improved patient clinical outcomes.

4.5.5 Pharmacy personnel's as medication therapy management experts

The number of nursing personnel who responded to this question was 44 and there were no missing answers. Twenty-nine nursing personnel (65.9%) had indicated that pharmacy personnel do fulfil their role as medication therapy experts during PCCOP visits. Eight nursing personnel (18.2%) however disagreed with the statement that pharmacy personnel fulfil their role as medication therapy experts. The frequency of nursing personnel that were not sure was seven (15.9%).

4.6 SECTION D: COMMUNICATION

In this section, communication during the PCCOP is evaluated. Pharmacy personnel were surveyed if they provided information to patients, whilst patients were surveyed if they had freedom to discuss their disease conditions with the pharmacy personnel during PCCOP visits. Below are the responses as obtained.

4.6.1 Provision of information

4.6.1.1 Response from pharmacy personnel

The majority of pharmacy personnel, 61.1% agreed that they offer counselling to patients. The other 22.2% indicated that they agree more that they offered counselling. This brought the number of pharmacy personnel participants providing counselling to a cumulative percent of 83.3% or of fifteen.

4.6.1.2. Response from patients

There were 334 patients who participated in the study. Out of this 334, there were 320 answered for this question and 12 were left open. There were 246 patients (76.9%) who indicated that pharmacy personnel always take sufficient time to advise them on how to use medicines correctly; another 48 (15%) indicated that pharmacy personnel sometimes take sufficient time to advise them on how to use medicines correctly; another 16 (5%) who indicated that pharmacy personnel rarely take sufficient time to advise them about how to use medicines correctly whilst the remaining 10 (3.1%) indicated that pharmacy never take sufficient time to advise them on how to use medicines correctly.

4.6.2 Freedom to talk about disease conditions

4.6.2.1 Response from pharmacy personnel

Half of the pharmacy personnel, 50% indicated that they always allow patients to ask questions. The other seven, 38.9% have however indicated that they sometimes do. For the options “rarely” and “never”, only one pharmacy personnel per option (5.6%) indicated accordingly.

4.6.2.2 Response from patients

There were 334 patients who participated in the study. Out of this 334, there were 324 valid for this question and 10 were left unanswered. There were 281 patients (86.7%) who agreed that they felt free to talk about their disease conditions with the pharmacy personnel; however, another 37 (11.4%) disagreed that they felt free to talk to pharmacy personnel about their disease conditions. The number of patients who were not sure if they felt free to talk to pharmacy personnel about their disease conditions stood at 6 (1.9%).

4.7 SECTION E: SATISFACTION WITH THE PROGRAMME

In this section, pharmacy personnel and nursing personnel gave recommendations of what can be done to improve the PCCOP. Furthermore, patients were evaluated for their PCCOP satisfaction levels. Below are the recommendations and patient satisfaction levels.

4.7.1 Pharmacy personnel recommendations

The percentage of participation stood at 94.4%. Table 4.11 indicated that 58.8% of the cases there has been 10 out of 18 tallies (35.7%) suggesting that the PCCOP should be continued, provided infrastructure is improved. The second popular option of 8 out of 28 (28.6%) was that the PCCOP should be complemented with an alternative chronic care programme. The least popular option tallied, 4 out of 28 tallies (14.3%) suggest that the PCCOP should be continued as it is.

Table 4.11: Pharmacy personnel recommendations n=18

		Responses		Percent of Cases
		N	Percent	
Recommendation	Continued as it is	4	14.3%	23.5%
	Continued, but human resource should improve	6	21.4%	35.3%

	Continued, but infrastructure should improve	10	35.7%	58.8%
	Complemented with an alternative chronic care programme	8	28.6%	47.1%
<hr/>				
Total		28	100.0%	164.7%
<hr/>				
a. Dichotomy group tabulated at value 1.				
<hr/>				

4.7.2 Nursing personnel Satisfaction recommendations

The recommendation with the highest dichotomy frequency (Table 4.12) was the PCCOP model should continue, but infrastructure must improve. The above-mentioned recommendation had a frequency of thirty-one (31.6% response rate) out of 72.1% of the cases. The second popular recommendation was that while the PCCOP model continues, the human resources should improve. The above-mentioned recommendation had a frequency of twenty-eight (28.6% response rate). The least favourable recommendation was that the PCCOP should be discontinued, with a frequency of one (1% response rate).

Table 4.12: Nursing personnel recommendations n=98

		Responses		Percent of Cases
		N	Percent	
Recommendations	I think the PCCOP model should be continued as it is	23	23.5%	53.5%
	I think the PCCOP model should be continued, but human resources should improve	28	28.6%	65.1%
	I think the PCCOP model should be continued, but infrastructure should improve	31	31.6%	72.1%

I think the PCCOP model should be complemented with an alternative chronic care programme	15	15.3%	34.9%
I think the PCCOP model should be discontinued	1	1.0%	2.3%
Total	98	100.0%	227.9%
a. Dichotomy group tabulated at value 1.			

4.7.3 Patient satisfaction levels

As shown below, there were 210 patients (64.2%) that indicated that they were very satisfied; another 77 (23.5%) indicated that they were slightly satisfied with the services provided by the pharmacy personnel. The number of patients who were not sure if they were satisfied or dissatisfied with the services stood at 23 (7%). However, 15 patients (4.6%) indicated that they were slightly dissatisfied whilst 2 patients (0.6%) indicated they were very dissatisfied. Figure 4.14 represents the information as discussed.

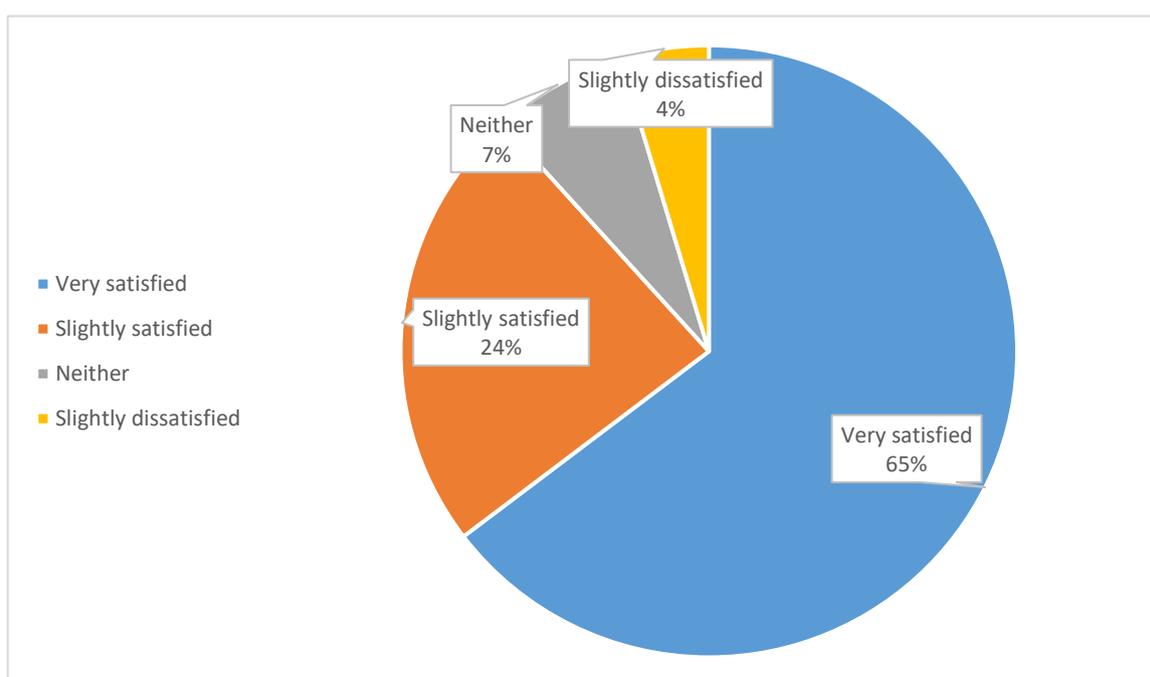


Figure 4.14: Patients' satisfaction pie chart

4.8 Summary

In this chapter, the results were analysed and discussed. The chapter started by analysing demographic results from pharmacy personnel, nursing personnel and patients. Then, the patients' rating of their current health status was cross-tabulated with patients' demographics. A chi-squared test was also performed to determine if a relationship existed between other demographics and the health status of patients. The responses from different participant groups were correlated to verify participant responses. In closing, patients' satisfaction levels were interpreted and depicted by Figure 4.14 above.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

In this chapter, a summary of the study and its' interpretations is discussed, followed by most importantly the study recommendations. As the chapter nears the end, study contributions and limitations are also mentioned. The chapter closes off with a paragraph on concluding remarks.

5.2 CONCLUSIONS

In order to improve service delivery, new programmes will intermittently be introduced in government. It is therefore justifiable to review a programme so as to ascertain its effectiveness, its impact and feasibility and most importantly public perceptions.

The main aim of the study was to observe and describe the impact of the PCCOP at feeder clinics attached to Zebediela hospital. To evaluate the PCCOP programme at Zebediela, the perceptions of the stakeholders and the factors affecting the perceptions were surveyed. The PCCOP recommendations from nursing personnel and pharmacy personnel were also as assessed.

Regarding demographics, the majority of pharmacy personnel at Zebediela hospital were in the 18-30 years age range. For nursing personnel, the highest age range was 41-50 years at 38.6% whilst the highest patient age range was the 60+ years group at 49.7%. The pharmacy personnel gender with the highest tally was females at 66.7% whilst the males stood at 33.3%. For nursing personnel staff at the feeder clinics, the highest tally was for females at 90.9% whilst for males it stood at 9.1%.

For general facility and healthcare provision, the survey findings showed that pharmacy personnel were satisfied with a duty roster of more than four personnel to offering PCCOP services competently. The majority of pharmacy personnel on the PCCOP used hospital transport to go on outreach at the feeder clinics.

Waiting time during the PCCOP was influenced by two parameters; namely arrival time of pharmacy personnel at the clinic and the waiting time for collecting medicines by patients. When pharmacy personnel were asked about their arrival time at the clinic, only 5.9% responded that they always arrived on time. Contrasting the responses, the nursing personnel who believed that pharmacy personnel always arrived on time was also small (22.7%), with the other 72.3% indicating that arrival on time only happened sometimes. Patients were also not content with the pharmacy personnel's arrival time. Only 38% of patients showed that pharmacy personnel always arrived on time. Regarding waiting time for collecting medicines, patients indicated that they waited in excess of two hours. In concluding the aforementioned parameters, the nursing personnel have however hailed PCCOP services as reducing patient waiting time.

Feeder clinic infrastructure is another aspect determining the delivery of PCCOP services. The research findings showed that most pharmacy personnel (77.8%) identified space problems at the feeder clinics. In addition to this, 54.5% of the nursing personnel indicated that the clinics did not have a facility of the right standard for pharmacy personnel to perform their job effectively. However, 75% of pharmacy personnel suggested an insulated vehicle to serve as a mobile pharmacy for PCCOP services as the main suggestion.

The pharmacy personnel indicated the main reason for delayed PCCOP services as caused by clinic personnel who book a large number of patients. To resolve the issue, pharmacy personnel have suggested that the patient booking and registration system be managed by nursing personnel. The issue around patient booking and registration system therefore seems to be operational, which would be solved by

implementing and widely communicating a standard operating procedure (SOP). The introduction of the SOP is backed up by the fact that 23.5% of the pharmacy personnel and 20.5% of nursing personnel were not sure if there was a PCCOP SOP available.

For medicines management, about 66% of patients indicated that they always receive all their medicines prescribed without out-of-stock items. When nursing personnel were surveyed on incidences of out-of-stock items, 59.1% of them reported fewer incidences. In addition to that, half of the pharmacy personnel conceded in reporting that they sometimes carry sufficient stock. During the root cause identification of the out-of-stock issue, the pharmacy personnel indicated low stock availability levels at the Limpopo Province Pharmaceutical Depot (LPPD) as the contributing factor.

On medicines labelling and directions, almost every patient (90.7%) agreed that the medicines were being labelled with directions on how to use. This led to the improvement in patient clinical outcomes as agreed by the majority of nursing personnel (61.4%). A further 61.4% of nursing personnel perceived pharmacy personnel as fulfilling their role as medication therapy experts.

Regarding communication, 61.1% of pharmacy personnel agreed to be giving patients enough information regarding medicine use. The above correlated well with the sentiments by patients that pharmacy personnel sometimes take sufficient time to advise them on how to use medicines effectively. 86.7% of patients agreed that they felt free to talk about their disease conditions with the pharmacy personnel.

In conclusion, both pharmacy personnel and nursing personnel recommended that the PCCOP model be continued as long as infrastructure is improved. In general, the patients were grateful and had high satisfaction levels.

5.3 CONTRIBUTIONS OF THE STUDY

This study focused on the care of patients with chronic conditions. The study therefore contributes towards non-communicable diseases and health systems. The results will therefore help policy makers outline strategies for implementing effective chronic care options towards meeting the Universal Health Coverage goal.

5.4 LIMITATIONS OF THE STUDY

The PCCOP study was conducted at Zebediela hospital and its feeder clinics. The results of the study therefore represent the situation at Zebediela, an area under Lepelle-Nkumpi municipality in Limpopo province. Therefore, the results cannot be generalised or purported to be a reflection of other areas and municipalities in Limpopo or South Africa.

5.5 RECOMMENDATIONS

- The researchers recommend further research on how the PCCOP model inputs, processes and outputs can be refined.
- Stakeholders such as pharmacy personnel, nursing personnel and patients need to collude and transition the PCCOP model into a multidisciplinary integrated outreach programme, in consultation with a technical advisor.
- A PCCOP standard operating procedure (policy) needs to be created to identify roles expected from the different stakeholders involved, and be timeously communicated to all the stakeholders.
- The PCCOP model or the multidisciplinary integrated outreach programme should be used as complimentary to the CCMDD programme on patients that are not yet stable and therefore would not be moved to the CCMDD programme.
- The researchers recommend a pilot phase of the PCCOP model to the hospitals that do not have more than ten feeder clinics.

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APPENDIX 1: PHARMACY PERSONNEL QUESTIONNAIRE ON PCCOP SERVICES

SECTION A: DEMOGRAPHICS

1. Age

18-30 years

31-40 Years

41-50 years

51-60 years

2. Gender

Male

Female

3. Occupation

Pharmacist

Post-basic pharmacist
assistant

Other (Please specify):

4. Please indicate the length of time roughly spent by you on the pharmacy chronic care outreach programme (PCCOP).

6 months

12 months

18 months

24 months

More than 30 months

SECTION B: GENERAL FACILITY AND HEALTHCARE PROVISION (Tick the most appropriate box).

1. Number of pharmacy personnel allocated per clinic to offer PCCOP services.

One

One to Two

Two to Three

More than three

2. Number of pharmacy personnel allocated per clinic is sufficient to deliver PCCOPP services effectively.

Yes

No

Remarks:

3. Is there adequate and use-friendly space in the clinic for the PCCOP dispensing and storage of medication?

Yes

No

4. If the answer is no in question 3, what can be done to address the aforementioned challenge? You may tick more than one option.

The department of health must build spacious dispensaries in state clinics.

The department of health must provide an insulated vehicle to serve as a mobile pharmacy

Nothing must be done

Other recommendations:

5. Are the dispensaries in all PHC clinics fitted with air conditioners for temperature control?

Yes

No

6. Mode of transportation used to reach clinics

Always

Some times

Never

Public transport

Private/Own transport

Hospital transport

7. Do you have a PCCOP Standard Operating Procedure (SOP) to guide you?

Yes

Not sure

No

8. Do the pharmacy team offering PCCOP services arrive at the clinic on time?

Always

Sometimes

Rarely

Never

9. If the answer is sometimes or never to question 8, what could be the reasons for delayed service?

Disagree Agree

The pharmacy team covers more than one clinic per day to offer PCCOP services

Time is lost at hospital level when pharmacy personnel fill up PCCOP medicine kit boxes.

Time is lost at hospital level waiting for transport

Pharmacy personnel team offering PCCOP services are burdened with additional responsibilities

Other reasons:

10. At the PHC clinics, do all the booked PCCOP patients get help on time?

Always Sometimes Rarely Never

11. If the answer is sometimes or never to question 10, what could be the reasons for delayed/no service?

Disagree Agree

The clinic personnel book an uneven and big number of patients

There is no driver

Few PCCOP team members as a consequence of work absenteeism or unmanaged leaves

There is no vehicle

Other reasons:

12. I believe the PCCOP patient booking and registration system needs to be managed to enable proper reporting.

Yes

No

Remarks:

13. PCCOP dispensing service outcomes (Please tick the answer that is more relevant)

(a) Do you offer counselling to patients on how to use the dispensed medicines and surgical items during PCCOP?

Agree more Agree Neutral Disagree Disagree more

(b) Do you allow patients time to ask questions after PCCOP dispensing?

Always Sometimes Rarely Never

(c) Do you track patients over time to help those not getting well manage their chronic conditions better during PCCOP visits?

Always Sometimes Rarely Never

SECTION C: MEDICINE MANAGEMENT (Tick the most appropriate box)

1. Do you carry sufficient stock to cover every patient's prescription during the outreach?

Always

Sometimes

Never

2. If the answer is sometimes or never, what is the reason? (You can tick on more than one item on the options below).

Zebediela Hospital Pharmacy bulk stores not ordering enough

Stock availability level are down at the Limpopo pharmaceutical depot

It is not possible to carry every possible medicinal item

Other reason:

SECTION D: PCCOP RECOMMENDATIONS

1. I think the PCCOP model should be (You can tick on more than one item on the options below).

Continued as it is

Continued, but human resources should improve

Continued, but infrastructure should improve

Complemented with an alternative chronic care programme

Discontinued

APPENDIX 2: NURSING PERSONNEL QUESTIONNAIRE ON PCCOP SERVICES

SECTION A: DEMOGRAPHICS

1. Age

20-30 years

31-40 years

41-50 years

51-60 years

60+ years

2. Gender

Male

Female

3. Occupation

Professional nurse

Enrolled nurse or other

SECTION B: GENERAL FACILITY AND HEALTHCARE PROVISION (Tick the most appropriate box).

1. Do the pharmacy personnel arrive on time for their PCCOP visits?

Always

Sometimes

Never

2. Do you think the PCCOP model reduces patient waiting time?

Yes

Not sure

No

3. With the PCCOP model, are there less incidences of out-of-stock medicines to patients?

Yes

Not sure

No

4. Do you think the PCCOP model increase workload to the nursing personnel?

Yes

Not sure

No

5. Do you think the PCCOP model has improved patient clinical outcomes?

Yes

Not sure

No

6. Do you have a PCCOP model Standard Operating Procedure (SOP) in your facility?

Yes

Not sure

No

7. During the PCCOP visit, do pharmacy personnel fulfil their role as medication therapy management experts?

Yes

Not sure

No

8. Does the clinic have the facility of the right standard for the pharmacy personnel to perform their job effectively?

Yes

Not sure

No

SECTION C: PCCOP RECOMMENDATIONS

2. I think the PCCOP model should be (You can tick on more than one item on the options below).

Continued as it is

Continued, but human resources should improve

Continued, but infrastructure should improve

Complemented with an alternative chronic care programme

Discontinued

APPENDIX 3: PATIENT QUESTIONNAIRE ON PCCOP SERVICES

SECTION A: DEMOGRAPHICS (Tick the appropriate box).				
1. Age				

20-30 years				

31-40 years				

41-50 years				

51-60 years				

60+ years				

2. Gender				

Male				

Female				

3. Race				

Black	White	Coloured	Other	

4. Educational status				

Never went to school	Primary level	High school level	Post high school	

5. Employment status				

Self-employed	Employed	Unemployed	Retired	

6. Chronic profile (Diabetes/hypertension/epilepsy/other) (You can tick more than one box).				

Diabetes	Hypertension	Epilepsy	Other	

7. On a scale of 1 to 5, please rate your current health status:				

1 (Very Poor)	2 (Poor)	3 (Moderate)	4 (Good)	5 (Very Good)

SECTION B: GENERAL FACILITY AND HEALTHCARE PROVISION (Tick the most appropriate box).				
1. Do pharmacy personnel arrive on time at the clinic?				

Always	Sometimes	Rarely	Never	

2. How long does it take you to reach the clinic pharmacy?				

Less than 30 minutes				

2. Do you feel free to talk about your disease conditions with the pharmacy personnel?				
Yes	No		Not sure	
3. Do you have enough privacy to discuss your health issues with pharmacy personnel?				
Yes	No		Not sure	
4. Do pharmacy personnel give you sufficient time to ask questions?				
Always	Sometimes	Rarely	Never	
SECTION E: SATISFACTION WITH PROGRAM (Tick the most appropriate box)				
1. What is your level of satisfaction with the services provided by the pharmacist?				
Very satisfied	Slightly satisfied	Neither satisfied nor dissatisfied	Slightly dissatisfied	Very dissatisfied

APPENDIX 4: SEPEDI TRANSLATED PCCOP QUESTIONNAIRE FOR PATIENTS

KAROLO A: DINYAKIŠIŠO KA MAEMO A BATHO (Swaya lepokisi la maleba).				
4. Mengwaga				
Mengwaga e 20-30				
Mengwaga e 31-40				
Mengwaga e 41-50				
Mengwaga e 51-60				
Mengwaga e 60+				
5. Bong				
Monna				
Mosadi				
6. Morafe				
Yo Moso	Yo Mošweu	Wa Mmala	O Mongwe	
7. Boemo bja thuto				
Ga sa nka ka tsena sekolo	Thuto ya tlasana	Sekolo se phagamego	Thuto ya ka Morago ga Marematlouol	
8. Boemo bja mošomo				
Ke a itšhomela	Ke thwetšwe	Ga ke šome	Ke tlogetše mošomo ka bogodi	
9. Pego ya bolwetši bja go se alafege (Bolwetši bja tswikiri/madi a magolo/bolwetši bja go way/le a mangwe) (O ka swaya lepokisi la go feta le tee).				
Bolwetši bja tswikiri	Madi a magolo	Bolwetši bja go wa	A magwe	
10. Sekaleng sa go tloga go 1 go ya go 5, hle re botše gore boemo bja gago bja tša maphelo bo wela kae:				
1 (Fokola Kudu)	2 (Fokola)	3 (Magareng)	4 (Bjo bo botse)	5 (Bjo bo botse kudu)
KAROLO B: THUŠO YA KAKARETŠO LE TOKIŠETŠO YA TLHOKOMELO YA TŠA MAPHELO (Swaya lepokisi leo e tlogago e le la maleba).				

7. Na sehlopha sa bao ba šomago ka dihlare tša kalafo se fihla tlilining ka nako?			
Ka mehla	Ka dinako tše dingwe	Ka sewelo	Le ka mohla
8. O tšea nako e kaaka'ng go fihla tlilining ya dihlare tša kalafo?			
Kat lase ga metsotso e 30			
Metsotso e 30 go iša go iri e 1			
Iri e 1 go iša go tše to 2			
Go feta diiri tše 2			
9. O leta nako e kaaka'ng ge o latile dihlare tša kalafo tlilining?			
Ka tlase ga metsotso e 30			
Metsotso e 30 go iša go iri e 1			
Iri e 1 go iša go diiri tše 2			
Go feta diiri tše 2			
10. Na lefelo leo le letago go lona tlilining ya dihlare ke la maleba?			
Ee	Aowa	Ga ke Kgodišege	
11. Na dinako tša go lata dihlare tša kalafo tlilining di ya go kgotsofatša?			
Ee	Aowa	Ga ke Kgodišege	
12. Na motho yo a neago dihlare tša kalafo o thuša balwetši ka gore go tlile ofe pele?			
Ee	Aowa	Ga ke Kgodišege	
KAROLO C: GO NEWA DIHLARE TŠA KALAFO KA TSELA YA MALEBA (Swaya lepokisi leo e tlogago e le la maleba)			
6. Na ka mehla o hwetša dihlare tša gago tša kalafo go etša ge ngaka e laetše?			
Ka Mehla	Ka Dinako tše Dingwe	Ka Sewelo	Le ka Mohla
7. Na o hwetša dihlare tša gago tša kalafo ka nako?			
Ka mehla	Ka dinako tše dingwe	Ka sewelo	Le ka mohla

8. Na o hwetša dihlare tša kalafo tliiniking le lefapheng la dihlare tša kalafo sepetleleng sa Zebediela ka letšatši le swanago?

Ka Mehla	Ka Dinako tše Dingwe	Ka Sewelo	Le ka Mohla
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9. Na dihlare di beilwe leipole yeo e ngwadilwego ditaelo tšeo di bonagalago gabotse tša mabapi le kamoo di swanetšego go dirišwa ka gona?

Ee	Aowa	Ga ke kgodišege
----	------	-----------------

10. Nla sehlopha sa bašomi ba dihlare tša kalafo di diriša nako e lekanego go go nea temošo ya kamoo o ka dirišago dihlare tša gago ka mo go swanetšego?

Ka Mehla	Ka Dinako tše Dingwe	Ka Sewelo	Le ka mohla
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KAROLO D: POLEDIŠANO (Swaya lepokisi leo e tlogago e le la maleba).

5. Na sehlopha sa bašomi ba dihlare tša kalafo ba diriša polelo ya gago?

Ee	Aowa
----	------

6. Na o ikwa o lokologile go bolela ka boemo bja bolwetši bja gago le shlopha sa bašomi ba dihlare tša kalafo?

Ee	Aowa	Ga ke Kgodišege
----	------	-----------------

7. Na o ba le lefelo leo le lekanego moo go se nago batho gore o kgone bolela ka maemo a gago a tša maphelo le sehlopha sa bašomi ba dihlare tša kalafo?

Ee	Aowa	Ga ke Kgodišege
----	------	-----------------

8. Na sehlopha sa bašomi ba dihlare tša kalafo ba go nea nako e lekanego gore o ba botšiše dipotšišo?

Ka Mehla	Ka Dinkao tše Dingwe	Ka Sewelo	Le ka Mohla
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KAROLO E: GO KGOTSO FATŠWA KE LENANEO (Swaya lepokisi leo e tlogago e le la maleba)

2. Ditirelo tšeo motho yo a fanago ka dihlare tša kalafo di go kgotsofaditšwe gakaaka'ng?

Di nkgotsofadiš kudu	Di nkgotsofadutše go senene	Ga se tša nkgotsofatša	Ga se tša nkgotsofatša kudu	Di tloga di sa nkgotsofatša
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APPENDIX 5: CONSENT FORM

Project title: an evaluation of the pharmacy chronic care outreach programme at Zebediela.

Project leader/supervisor: Mr M.S. Poka.

I agree to participate in this project, whose conditions are as follows;

The project is aimed at investigating the pharmacy chronic care outreach programme, as run by Zebediela hospital pharmacy department.

Participation in this research study is voluntary and I can withdraw my participation at any stage.

The University of Limpopo, Turfloop Research and Ethic Committee (TREC) has approved that individuals may be approached to participate in the study.

The research team will inform me of any new information that may become available during the research, which may influence my willingness to continue with my participation.

Access to the records that pertain to my participation in the study will be restricted to persons directly involved in the research.

Any questions I may have regarding the research, or related matters, will be answered by the researcher/s.

If I have any problems regarding the study, or experience any undesirable effects, I may contact a member of the research team or Mr M.S. Poka on (015) 268 2345.

Signature of the respondent..... Date.....

Signature of the researcher..... Date.....

APPENDIX 6: APPROVAL FROM UNIVERSITY OF LIMPOPO TURFLOOP RESEARCH AND ETHICS COMMITTEE



University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 2212, Fax: (015) 268 2306, Email:noko.monene@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE CLEARANCE CERTIFICATE

MEETING: 31 August 2017

PROJECT NUMBER: TREC/285/2017: PG

PROJECT:

Title: An evaluation of the pharmacy chronic care outreach programme at Zebediela

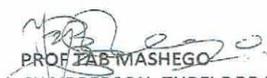
Researcher: PJ Ngoepe

Supervisor: Mr MS Poka

Co-Supervisor: Prof PH Demana

School: Health Care Sciences

Degree: Masters in Pharmacy


PROF ZAB MASHEGO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: REC-0310111-031

Note:

- i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
- ii) The budget for the research will be considered separately from the protocol.
PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

Finding solutions for Africa

APPENDIX 7: APPROVAL FROM LIMPOPO DEPARTMENT OF HEALTH



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Enquiries: Stols M.L (015 293 6169)

Ref:4/2/2

Ngope P (LP 2017 09 005)
PO Box 846
Koringpunt
0632

Greetings,

RE: An Evaluation of the Pharmacy Chronic Care Programme at Zebediela.

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
 - Research must be loaded on the NHRD site (<http://nhrd.hst.org.za>) by the researcher.
 - Further arrangement should be made with the targeted institutions, after consultation with the District Executive Manager.
 - In the course of your study there should be no action that disrupts the services.
 - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
 - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
 - The above approval is valid for a 3 year period.
 - If the proposal has been amended, a new approval should be sought from the Department of Health.
 - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.



Head of Department

13/10/2017

Date

**APPENDIX 8: REQUEST TO CONDUCT A STUDY TO CAPRICORN PRIMARY
HEALTHCARE SERVICES**

P.O. Box 846
Koringpunt
(0632)

phutingoepe65@gmail.com
+27845772017

13 October 2017

Attention:
Assistant Director
Primary Health Care Services
Lepelle-Nkumpi
Limpopo Department of Health
Lebowakgomo
(0737)

Application for permission to conduct research.

Dear Sir/Madam.

I hereby apply for permission to conduct a research in your institution, namely the Limpopo Province Department of Health. I am currently employed in the Limpopo Province Department of Health as a Pharmacist, and also studying at the University of Limpopo Turfloop Campus towards a Master in Pharmacy degree.

As part of the qualification, each M.Pharmacy student has to conduct a research and write a full dissertation. I have identified **Zebediela Hospital** and its' feeder clinics, namely; **Byldrift clinic, Slypsteen clinic, Moletlane clinic, Mogoto clinic and Zebediela Estate clinic.**

The study I am working on is titled: **An evaluation of the pharmacy chronic care outreach programme at Zebediela.** I have enclosed the University of Limpopo Turfloop Research Ethics Committee Clearance certificate, and the research proposal together with this application.

I hope you find the above in order.

Permission granted.
17/10/2017

Phuti Ngoepe (Mr)



(Ass Director)

APPENDIX 9: REQUEST TO CONDUCT A STUDY AT ZEBEDIELA HOSPITAL

P.O. Box 846
Koringpunt
(0632)

phutingoepe65@gmail.com
+27845772017

31 August 2017

The Chief Executive Officer
Zebediela Hospital
Private Bag X 342
Gompies
(0631)

Application for permission to conduct research.

Dear Sir/Madam.

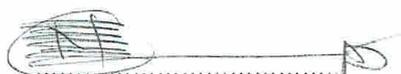
I hereby apply for permission to conduct a research in your institution, namely Zebediela Hospital. I am currently employed in the Limpopo Province Department of Health as a Pharmacist, and also studying at the University of Limpopo Turfloop Campus towards a Master in Pharmacy degree.

As part of the qualification, each M.Pharmacy student has to conduct a research and write a full dissertation. I have identified **Zebediela Hospital** and its' feeder clinics, namely; **Byldrift clinic, Slypsteen clinic, Gateway clinic, Slypsteen clinic, Moletlane clinic, Mogoto clinic and Zebediela Estate clinic.**

The study I am working on is titled: ***An evaluation of the pharmacy chronic care programme at Zebediela.*** I have enclosed the University of Limpopo Turfloop Research Ethics Committee Clearance certificate, and the research proposal together with this application.

I hope you find the above in order.

Phuti Ngoepe (Mr)



**APPENDIX 10: APPROVAL TO CONDUCT A STUDY FROM ZEBEDIELA
HOSPITAL CEO**



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH AND SOCIAL DEVELOPMENT

TEL: (015) 662 0787
0173/0108

ZEBEDIELA HOSPITAL

FAX: (015) 662



PRIVATE BAG X342
GOMPIES
0631



Date: 24 OCTOBER 2017
Ref: NGOEP 01/10/17 /01

Enq: DR T P M Masemola

From: The Chief Executive Officer
Zebediela Hospital

To: NGOEPE P J
P O Box 846
KOORINGPUNT
0632

REQUEST FOR PERMISSION TO CONDUCT RESEARCH: YOURSELF

1. Your application letter received 16 October 2017, on the above matter, hereto refers.
2. I am glad to confirm the granting of the permission to do the research at Zebediela hospital as requested.
3. And do, hereby, further confirm, our conditions , as follows:
 - 3.1 No action should disrupt service delivery at Zebediela hospital and its subsidiary service points,
 - 3.2 Adherence to the full research ethics, including obtaining of informed consent from the targeted participants.

Wishing you well in your study

Yours in Health Service Delivery

CHIEF EXECUTIVE OFFICER