

**FACTORS CONTRIBUTING TO LONG WAITING TIME AT BLOUBERG HEALTH
CENTRE, CAPRICORN DISTRICT, LIMPOPO PROVINCE**

by

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DISSERTATION

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DECLARATION

I, Mani Tshiangwa Adolphina, hereby declare that this dissertation, titled “**Factors contributing to Long Waiting Time at Blouberg Health Centre, Capricorn District, Limpopo Province**” is the result of my own investigations, and that all sources I have used and quoted have been duly indicated and acknowledged by means of text and list of references. This study has never been submitted by me for any degree at this or other institution.

Tshiangwa Adolphina Mani

: 

Date signed

: 2020/12/17

DEDICATION

This study is dedicated to:

My mother Moyahabo Johanna Thobakgale /Mani and my father Sila Wilson Mani for their encouragement, spiritual love and support.

My beloved daughters: Charnice, Alex and Linet Mani, in the recognition of their commitment, continuous support, abundance of love and understanding of my studies.

My beloved son, Jean Pierre Mani, in the recognition of his commitment, continuous support, abundance of love and understanding of my studies.

My sisters, Eunice and Joyce, for their love and caring for my children while I was held up in my studies.

My brothers, Solomon and Albert for their encouragement and support.

My grandmother, Puledi Thobakgale/Makgato for being in my genes.

May God bless them always, praise the Lord, Amen.

In memory of my beloved mother Moyahabo and brother Solomon Mani.

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ABSTRACT

Background: Long patient waiting time for services is demonstrated by daily long queues of patients in Primary Health Care (PHC) and hospitals Outpatients departments.

Aim: The aim of the study was to determine the factors contributing to long waiting time at Blouberg Health Centre (BHC), Capricorn District, Limpopo Province.

Methods: A quantitative, descriptive and cross-sectional research design was used to describe factors contributing to long waiting time. The study population consisted 31356 patients in the financial year 2017/2018. Simple random probability sampling was used to select 395 respondents. Data were collected using self-developed questionnaire. All questionnaires were completed and returned. The 395 questionnaires were then analyzed using the Statistical Package for Social Sciences (SPSS, version 25). Descriptive statistics were used to analyze and describe and summarized data.

Findings: The findings were presented in the form of distribution graphs and tables. Inferential statistics were used based on probability and allowed judgement to be made about variables. The study revealed factors considered most important were lack of commitment; full time study leaves at the same year; workshops; sick leaves; increased population; sitting in tearoom for hours; many foreign national without passports; staff shortages; laissez faire working style and transfers or escorting patients, while the nearby Hellen Franz Hospital (HFH) also transfer to the same hospitals, leading to mismanagement of budget reduced manpower and increased death rate.

Recommendations: The study recommends that all Primary Health Care (PHC) settings should use numbers for patients when entering facilities to monitor the queuing and prevent dissatisfaction that can result from long waiting.

Conclusion: It is of paramount importance to provide clearer, transparent information to the recipients of the Primary health care services that they might receive. The provincial coordinators are accountable to the waiting time management with the assistance of the PHC specialist nurse and Nursing Management.

Key-words: Factors, long waiting time, waiting time management, death rate, PHC

LIST OF ABBREVIATIONS

AT	Arrival time
BHC	Blouberg Health Centre
CBD	Central Business District
CDC	Centre for Disease Control and Prevention
DT	Departure Time
HBB	Helping Baby Breath
HFH	Helene Franz Hospital
LP	Limpopo Province
OPD	Outpatient Department
PHC	Primary Health Care
RSA	Republic of South Africa
SA	South Africa
SPSS	Statistical Package for the Social Sciences
TREC	Turfloop Research Ethics Committee
UNAIDS	United Nations Programme on HIV and AIDS
WHO	World Health Organization
WT	Waiting Time

DEFINITION OF CONCEPTS

Arrival time

Arrival time is the time the patient report to assessment center, seeking health care (Conrad, 2013). In this study, arrival time is the time the patient report to assessment center seeking health care.

Departure time

Departure time is the time the patient exits the clinic after reaching the last service point (Wafula, 2016). In this study, departure time is the time the patient leaves the assessment centre with or without receiving health care.

Factors

Factors is the influence that contributes to a result (Oxford English Dictionary, 2018). In this study, factors are all the causes of prolonged waiting time from time the patient enters the facility till patient's departure.

Health Centre

Health Centre is the premises owned by local authority, providing health care for the local community and usually housing a group of practice, nursing staff, a child health clinic, X-ray facilities (Oxford English Dictionary, 2018). In this study, Health Centre means a premise owned by the local government of the department of health, providing health care for the local community and usually housing a group of practice, nursing staff, a child health clinic, X-ray facilities, midwifery care, etc.

Outpatient

Out-patient refers to a patient that visit the clinic and leaves the same day immediately after treatment (Conrad, 2013). In this study, outpatient refer to a patient that visit the clinic and leaves the same day immediately after treatment.

Patient flow

Patient flow refers to the patient's movement through a set of sections from time they walk into a clinic facility to the time they are discharged by health worker or the time they choose to leave (Conrad, 2013). In this study, patient flow described the patient's

movement through a set of sections from time they walk into a clinic facility to the time they are discharged by health worker or the time they choose to leave

Section waiting time

Section waiting time is time the patients spends waiting to receive a service at a specific service point within the clinic (Conrad, 2013). In this study, section waiting time is time the patients spend waiting to receive a service at a specific point within the clinic. Specific service point such as family planning point or Ante-retroviral (ART) clinic point, EPI (Extended Programme of Immunization) point.

Service point

Service point refers to various stations within the clinic where the patient receives a specific service (Conrad, 2013). In this study, service point refers to various stations within the clinic where the patient receives a specific service.

Service time

Service time is the time patients spend receiving a service from the service provider at any service point (Conrad, 2013). In this study, Service time was the time patients spend receiving a service from the service provider at any service point.

Total waiting time

Total waiting time is the sum of all the section waiting times (Conrad, 2013). In this study, Total waiting time will be the sum of all the section waiting times. This was measured by national average waiting time which is 3hrs 45 minutes.

Waiting time

Waiting time refers to the time a patient waits in the clinic before being seen by one of the clinic medical staff (Conrad, 2013). In this study, waiting time is the time a patient waits in the clinic before being attended by a clinic medical staff.

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1. Introduction and background

Internationally, the ratio of patients to staff is enormous, and this factor contributes to long waiting times and thus lack of quality of care perceived by the patient (Umar, Oche & Umar, 2011). Worldwide, patients who visit health-care facilities usually wait very long to be attended by physicians and professional nurses. The Institute of medicine recommended that the patients should be attended within 30 minutes of their arrival to the facility or their appointment (Conrad, 2013). According to the World Health Organization (WHO) s ' 3 by 5' Report of 2006 and the UNAIDS (2006) Report on average waiting time spent is four hours or more at the clinic, with the longest wait being 12 hours internationally.

According to Horwitz, Green and Bradley (2010), the Institute of Medicine referred to the long waiting time as an international epidemic in developed countries like United States (US), based on the fact that many global health care systems continue to experience lengthy waiting time for patients. Hence, the average waiting time could be twice as much as the recommended time for acute patients. In the 2014 report from Center for Disease Control (CDC), it was found that the average patient treatment time was 90 minutes. Another international survey conducted by the Canadian Institute of Health (2012) showed that at least half of the patients take four hours to be given treatment. Consequences for long stays in health facilities have been linked to poor outcomes (Yeboah & Thomas, 2009).

In Sub-Saharan Africa, reports from Northern Nigeria indicate that in the public health sector, patients experience dissatisfaction within the health care service delivery because of long waiting and queues. The waiting time in the facility is more than four hours (Wafula, 2016). Several causes have been identified to be leading to long waiting time in many outpatient's units within and out of hospitals in the developing countries. According to Maluwa, Andre, Ndebele and Chilemba (2012), some of the causes of long waiting time are due to shortage of health personnel and high patient load. In busy hospital in Malawi, a study on moral distress in nursing practice

established that nurses develop a low morale for work and strain due to attending to many patients daily (Dimakou, Dimakou & Basso, 2015).

Furthermore, Masuthu (2017) stated that the subsequent long waiting time which are prevalent in the developing countries are due to insufficient equipment, long registration procedures and insufficient human resource. However, Oche and Adamu (2013) reported that a patient who wait for long to get a service perceives this as hindrance of care. In Pumwani maternity hospital, findings of the study showed that patients who waited less than 30 minutes were more satisfied than those who waited for more than 60 minutes, and therefore, longer patient waiting was found to affect patient' satisfaction (Nyongesa, Onyango & Kakai, 2014).

In South Africa, Primary Health Care (PHC) delivery is the pillar on which health care services are built. It is the first level of entry for a patient and focuses on prevention and promotion of health care problems. Patients are referred from this level to secondary and tertiary services for further management of the detected disease (WHO,UNAIDS 2014). In primary health care clinics, the concern was that patients usually wait too long for service delivery, even if they are very ill and need urgent hospitalization. The achievement of waiting time was done through the Cape Triage Score system, which was used to reduce waiting time in the private sector as well as in public hospitals (Swart, Anna-Therese, 2014).

All services, especially those funded by the taxpayer's money, are open to scrutiny by the public that funds them. The South African government has put a few measures in place to ensure to the taxpayer and the user of the public service that adequate, responsible and accountable services would be rendered. The constitution of the Republic of South Africa (RSA), Act No.108 (South Africa, 1996) stipulated that citizens have the right of access to effective health care services.

Jaffray and Miti (2010) stated that shortage of staff has a negative impact on the delivery of services, which is experienced as poor service by the patients who rely on the media, which acts as patients' spokesperson. Jooste and Maditla (2011) reported that several clinics in Limpopo Province (LP) showed alarming overcrowding, lack of equipment and crumbling infrastructure, which might influence the long waiting time.

Thus, the purpose of this study was to determine the factors contributing to long waiting time at Blouberg Health Centre.

1.2. Research problem

Primary Health Care centers are believed to be negatively affected by long waiting time globally and in South Africa. The researcher observed that long waiting time for services at Blouberg Health Centre is a challenge that affect health care service delivery. Long waiting time undermines the image of the Public Health Care Sector. The receiver of the health care, the patient, experiences long waiting on a daily, weekly or monthly basis. The patient's opinion is a valuable measurement regarding the quality of health care received and experienced.

Regardless of ideal clinic initiation, customer care and technological development, patients still experience unacceptable levels of waiting time. Furthermore, there is high mortality rate related to long waiting time existing in Capricorn District, Limpopo Province (Department of Health Statistics, 2018). The national acceptable waiting time is 3hours 45 minutes. There is no study conducted in the Blouberg municipality regarding factors contributing to long waiting time. Thus, the researcher sought to determine the factors contributing to long waiting time pertaining to reduce it to acceptable ones and to develop strategies to enhance quality care.

1.3. THEORETICAL FRAMEWORK

The theory which underpinned this study is the queuing theory. The queuing theory was developed from a French mathematician and is usually used to identify a set of analytic techniques in the form of closed mathematical formulas, to describe properties of processes dealing with scenarios of congestions and blockages. Therefore, it seems very logical to view the services or operations of outpatient department as a queuing system: patients need the services of the units wait in a queue to be served and leave the system after service (Conrad, 2013).

1.3.1 Basics of Queuing Theory

The basic structure of queuing model can be separated into input and output queuing system (Hillier & Lieberman, 2005).

Single-servers

Multiple phases

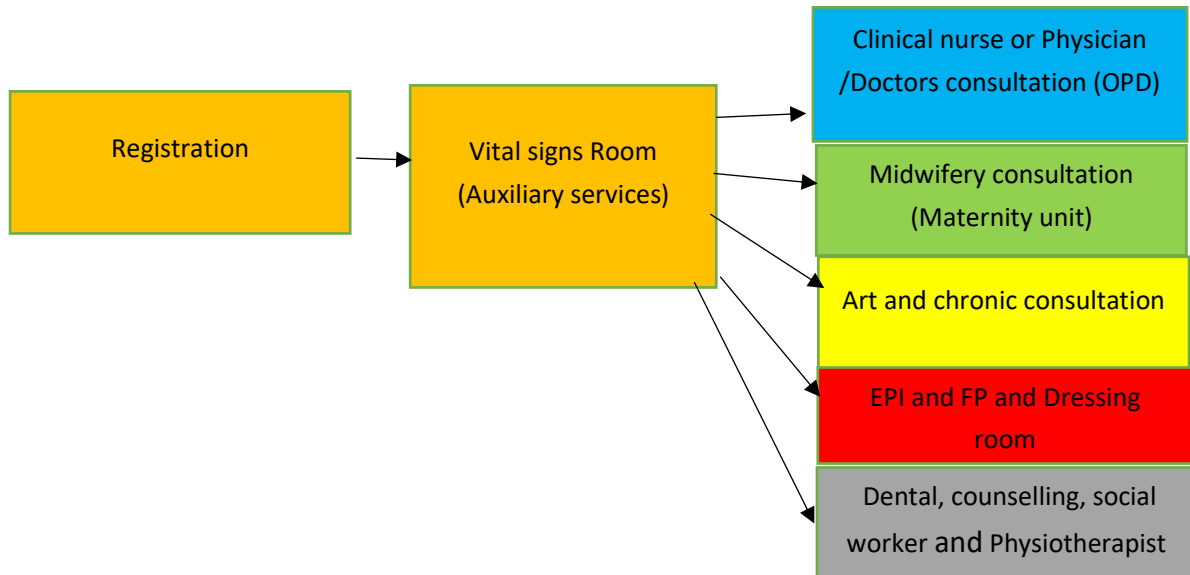


Figure 1.1: Queuing discipline showing a Single-serve and Multiple phase system (Obamiro, 2010), adapted

Figure 1 depicts the concepts of the Queuing discipline showing a single-serve and multiple phase system as follows:

- *Single-server, Multiple-phases System*

With this system, there is still a single queue, but patients receive more than one kind of service before departing the queuing system as shown in figure 2. At hospital outpatient department, patients first arrive at the registration desk, get the registration done and then wait in a queue to see a nurse for auxiliary services before being seen by the consultant (clinical nurse practitioner or physician). Patients have to join a queue at each phase of the system.

- *Description of the OPD patient queuing model (Input and output process)*

Input process is known as the arrival process. These Patients enter the queuing system and join a queue to be served. A patient in the queue is selected for service by some rules known as the queue discipline. The required service is then delivered to the patient by the service mechanism, after which the patient leaves the queuing

system (Hillier & Lieberman, 2005). The provision of services using certain rule and discharge of patients is referred to as output process.

- *Arrival*

Although most analytical queuing models assume a constant patient arrival rate, many healthcare systems have a variable arrival rate. In some cases, the arrival rate may depend upon time, but be independent of the system state. For instance, arrival rates change due to the time of day, the day of the week, or the season of the year. In other cases, the arrival rate depends upon the state of the system (Samuel & Jeffrey, 2007).

- *Waiting Line or Queue*

A waiting line or queue occurs when patients wait before being served, because the service facility is temporarily engaged. A queue is characterized by the maximum permissible number of patients that it can contain. Queues are called infinite or finite, depending whether the number is infinite or finite (Hillier & Lieberman 2001). An infinite queue is one in which for all practical purposes, an unlimited number of patients can be held there. Unless specified otherwise, the adopted queuing network model in this study assumes that the queue is an infinite queue.

- *Queue Discipline*

The queue discipline refers to the order in which members of the queue are selected for service (Hillier & Lieberman, 2001). In most healthcare settings, unless an appointment system is in place, the queue discipline is either first-in-first-out or a set of patient classes that have different priorities (as in an emergency department, which treats patients with life threatening injuries before others). Studies (Siddhartan et al., 1996) propose a priority discipline for different categories of patients and then a first-in-first-out discipline for each category. They find that the priority discipline reduces the average waiting time for all patients: however, while the waiting time for higher priority patients reduces, lower priority patients endure a longer average waiting time.

- *Service Mechanism*

According to Mosek and Wilson (2001), service mechanism describes how the patient is served. In a single server system, each patient is served by exactly one server, even though there may be multiple servers. In most cases, service times are random and they may vary greatly. The service mechanism also describes the number of servers. The first patient from the common queue goes to the server who becomes free first (Medhi, 2003).

- *Capacity of the System*

According to Medhi (2003) a system may have an infinite capacity-that is, the queue in front of the server(s) may grow to any length. Furthermore, there may be limitation of space and when the space is filled to capacity, an arrival will not be able to join the system and was lost to the system. This can happen at any service point in the OPD. The system is called a delay system or a loss system, according to whether the capacity is infinite or finite respectively (Medhi, 2003).

- *Departure*

Once patients are served, they depart through several routes. Once an OPD patient is served, many exit fates are possible:

- The patient may be admitted to maternity units.
- The patient may receive the service to their expectation and return to source population.
- The patient may experience delays and opt for a similar service elsewhere.
- A patient may be advised by the health worker at any point to seek services elsewhere due to capacity to handle the case.

The individual characteristics and experiences from this theory addressed by the study will be age, gender and educational level. Individual characteristics should not be viewed in isolation and need to be considered in terms of the complex inter-relations with other systems such as Input sources, queuing discipline, Service facility and Service patient departure affect, interpersonal influence and situational influence to create incentives from High-level of a Basic Queuing process. Queuing outcome

intention is carrying out plan of action, as identified in the plan of action, will lead patient satisfaction on service delivered in terms of waiting time (Obamiro, 2010).

1.4 Aim of the study

The aim of the study was to determine the factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo Province.

1.5. Research question

What are the factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo Province?

1.6. Objectives of the study

The objectives of the study were to:

- Identify the factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo Province.
- Describe the factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo Province.
- Develop strategies based on the findings of the study, to reduce a long waiting time thus enhance Quality Care at Blouberg Health Centre.

1.7. OVERVIEW OF RESEARCH METHODOLOGY

A quantitative research methodology applying the cross-sectional design was conducted to determine the perception of patients on factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo Province. Quantitative Research exhibits a set of decisions regarding what topics to be studied among what population with what research methods and what purpose (Babbie & Mouton, 2011). A policy on waiting time was developed based on the factors, questionnaires that were described by patients.

1.8. SIGNIFICANCE OF THE STUDY

The findings if the study could empower the staff with information on factors leading to long waiting time, promote patient satisfaction and quality of care described by patient. The findings may improve health of all patient and provide knowledge to patient. Furthermore, mortality rates may be reduced and assist staff in information on reducing waiting time effectively. Furthermore, the study will assist patients in information on understanding the causes of long waiting time. This may also benefit the department of health in improving effectiveness of staff on reducing waiting time. Policy on waiting time might be developed.

1.9 OUTLINE OF CHAPTERS

The study includes the following chapters: Chapter 1, chapter 2, chapter 3, chapter 4 and chapter 5.

Outline of subsequent chapters

Chapter 2: Literature review

Covers the literature review on Long Waiting Time.

Chapter 3: Research methodology,

Presents the research design, study sites, population and sampling, data collection method, method, data analysis, validity and reliability and ethical considerations.

Chapter 4: Results and discussion

Deals with report on the research finding in the context of the aim and objection of study.

Chapter 5: Summary, limitations, recommendations and conclusion.

Discusses the summary, limitation, recommendations and conclusion. Recommendations are based on the finding of the study in relation to factors contributing to Long Waiting time.

1.10 CONCLUSION

This chapter presented an overview of the research study, introduction and background, problem statement, aim of the study, research question, theoretical framework, methodology and description of research design and significance of the study the next chapter focuses on literature review.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Most of published researches about patient waiting time in health facilities cover large hospitals and outpatient's department within large hospitals. Most of them were done in developed countries (Whyte & Goodacre, 2016). A good data of literacy work has also been done in developing countries like Uganda (Conrad, 2013; Oche & Adamu, 2013). Several factors were established from findings of the studies which affect patient waiting time. Some of these factors are few health personnel, high patient load and inadequate equipment (Maluwa et al., 2012). Most of the research conducted revealed that patients experience long waiting time prior receiving the care in health facilities (Zhu, Li, & Yang, 2012).

Daniels, Johanna and Alexander (2016) stated that the impact of a waiting time survey in primary health care clinics in Cape Town, South Africa, showed the following: the reduction was manifest at individual clinic level with 55%, reduction of median waiting time by at least 15 minutes and no specific factors. Recommendations to reduce waiting times were implemented. Implementation of recommendations to reduce waiting times was 2.67 times (95% CI 1.33-5.40) more likely amongst those who received written recommendations and 2.3 times) 95% CI 1.28-4.19) more likely amongst managers with 5 or more years" experience (Daniels et al., 2016).

The increasing demand of outpatient services has led to overcrowded clinics, long waiting time for patients and extended staff working hours in outpatient clinics. Simulation tools have been used to ameliorate deficiency in appointment system's resource allocation (Hong, Shang & Arumugam, 2013). A two weeks waiting time from primary health care referral to first specialist assessment is recommended for patients with symptoms of suspected cancer, such as post-menopausal bleeding. Two different bookings systems were compared (Lawton, Rose, Pullon & Stanley, 2012).

2.2. Purpose of literature review

Conducting a literature review is a means of demonstrating the author's knowledge about a particular field of study. Including vocabulary, theories, key variables and phenomena, and its methods and history. Conducting literature review also informs the student of the influential researchers and research groups in the field (Radolph, 2009).

2.3. Reducing waiting time

- Gather patient information before their scheduled appointment.
- Delegate documentation to other trained staff
- Use secure messaging/ communicate important information to your patients.
- Create a policy for non-shows and late arrivals and stick to it.
- Design a survey to identify bottlenecks/ track each patient s timeline from arrival to exit.
- Implement a mobile queue solution Or allocate numbers.
- Embrace telehealth solution/home visit.
- Provide comfortable reception area (<https://blog.evisit.com>) by Teresa Lafolla.

2.4. Factors affecting long waiting time.

Factors considered most important were:

1. Gender has been noted as an important factor affecting patient satisfaction. more women attend the clinics than men. (Umar, Oche and umar)2011

2. Missing data requirements is another factor affecting patient's waiting time (Almomani, A Alsarheed 2016)

4. Appointment system

Johnson and Rosenfeld 1968 stated that Many patients require a fairly routine type professional management, and competent nurses who could listen to complain, evaluate the symptoms and laboratory results, and provide necessary guidance and emotional support. On the basis of such information the nurse would judge the necessity for patient to see physician during the current visit to the clinic and might schedule the next visit. In relation to patient flow through the clinic, nurse clinics with

reasonable staffing in relation to the volume of clinic visits could make a consideration inroad on the problems of waiting and congestion.

5. According to Aburayya, Alshurideh, Albqaeen, Alawadhi, and Ayadeh 2020, Study done reveals that data collected from employees denoted that the main causes of patients' WT were high workload level, insufficient work procedure, employees-supervisor interaction problems and adequate facilities availability. There is a need for healthcare leaders and managers in charges in this sector to reduce patients' complaints while waiting and to solve the WT problem in a planned manner.

6. Appointment interval, service time, patients' arrival pattern, number of no-shows, number of walk-ins, physicians' arrival pattern, and interruptions in patient services. patient loads, patients' early and late arrival times, physicians' promptness. Doctor idle time relationship and the effect of patient and physician tardiness on the same relationship in an ambulatory facility characterized by mixed input, partly scheduled and partly unscheduled. The importance of a realistic clinic load is stressed, and the critical effect of physician promptness is demonstrated. The effect of variation in patient load on the length of the working day. The effect of change in the statistics of patient. The effect of calls that take the physician away from the patients. (Fetter and Thompson 1966) (ncbi.nlm.nih.gov/pmc/PM1067309/?page=24)

7. Other factors affecting waiting time are resource realignment, operational efficiency, process improvement and organizational culture and person-centered attitude. (Naiker, FitzGerald and Dunlunty 2018).

8. time factor" (time spent at scheduling an appointment and waiting in the clinic, (Leiba, Weiss, Carrol Benedek and Bar-day 2002).

9 More attention should be focused on patients with a higher risk of mortality while waiting for a deceased donor kidney transplant, such as patients with diabetes, those of advanced age, and those who are male (Lee, Yoo, An, Oh, Lim, Kim and Lee 2019).

10. The study done by Wheeler, Hardie, Klemm, Akanji, Schonewolf, Scott, and Sterling, 2010 revealed that there was adequate power to detect the effect of pain in determining the length of waiting time to see a physician if it was present. In addition, African American had a statistically significant longer wait than whites. The effect of race might be interpreted as another example of health disparities.

The researcher also identified Transfers, Study leaves, sick leave and also a lot of foreign national without passports at the Blouberg municipality who are given free services, increasing population with same staff. Primary Health care settings should use numbers when patients enter facilities, so that a person who came late should not enter in front of others. Passports or identity documents should be produced. Delegation should be monitored. There are guidelines such as waiting time, and Integrated Management of Childhood Illnesses (IMCI) and using of numbers.

Almomani, I. and Alsarheed, A., 2016 Said in their study that the Five main problems that may cause high or unmeasured waiting time have been identified: appointment type, ticket numbering, doctor late arrival, early patient arrival and patients' distribution list. Solutions to these problems have been developed then substantiated, analytically or by simulation, to reduce patients' waiting time and eventually raise the level of satisfaction. The scope of this research includes the workflow inside the clinic, starting from patient arrival and then moving on to vital assessment, clinical or physical examination and then discharge. All internal procedures like vaccination and pulmonary tests and external ones like pharmacy and laboratory services are out of scope.

2.5. The goal of reducing long waiting time

The goal is to reduce time spent by patients to receive patient care services and increase patient satisfaction.

2.6. Service times

Waiting time of patients who present at Saint Rita's hospital Emergency Department, Limpopo province, South Africa was determined as the long as waiting time spent by stable patients (Cimona-Malua, 2012).

2.7 Quality of care

There has been prioritization of critically unwell children in low resource Primary Healthcare centres in Cape Town, South Africa (Hansoti 2017). Every day, sick children die from time sensitive preventable illnesses. Due to an inadequate number

of trained healthcare workers and high volumes of children presenting to Primary Health Care Centres (PHC), waiting times remain high and often result in significant delays for critically ill patients.

- *Waiting time norms*

Assessment of waiting and service times in public and private health care facilities has been conducted in Gondar district, North Western Ethiopia (Zegeye, Desalegn & Tegabu, 2008). The development and provision of equitable and acceptable standard of health services to all segments of the population has been the major objective in the Ethiopian National Health policy. However, community-based studies on satisfaction with public health care facilities revealed that most of the studies show that there is a long waiting time at facilities. Waiting time norm have different implications in different countries. In developed countries, waiting times have been well studied and several procedures have been designed to reduce it, such as an appointment system (Zegeye 2008).

2.8. Patient satisfaction

Despite the technological developments in medical care, patients still experience unacceptable levels of waiting time (Tegabu, Zegeye & Desalegn, 2014). Health care users perceive waiting time as a problem, and this is articulated by media reports on how citizens complain about long waiting time prior to receiving any medical care. Efficiency and effectiveness in reduction of long waiting time is important.

Tegabu et al. (2014) ascertained the assessment of waiting time and service times in public and private health care facilities in Gondar district, North Western Ethiopia. The patients were referred to the physician and professional nurse based on the severity of their conditions. There was no reduction in the overall waiting time for patients visiting primary health-care clinics due to the different components of the waiting-time.

The patients' Bill of Rights formulated in 1999 by the South African government confirms the patients' right of access to health care and patient needs to be treated with respect and dignity. Batho Pele Principles formulated and propagated since 1997 by the South African government attempts to encourage public servants to "put people first". All of these measures are concerned with treating the public that uses the services with courtesy, consideration and to redress the problems that the public have

with service delivery (Khoza, 2009). Thus, patients' needs, and interests must receive priority.

Measurement of client satisfaction can be used to comment on the quality of care that was rendered (Patro, Kumar, Goswami, Nongkynrih & Pandav, 2008). Clients' satisfaction needs to be measured frequently so that health care planners could take into consideration the actual needs of the population served (Ahmad & Din, 2010). This will ultimately improve health care outcomes and quality services (Fomba, Yang, Zhou, Liu & Xiao, 2010). Too often patients are disempowered and have the least say in what a quality health care service should look like. Patients are often emasculated, disenfranchised and ignored in the unionized fights for better salaries and packages by health care staff. Patients, rather than professionals, should define and evaluate their care needs.

The democratic right of citizens should be involved in issues that affect their lives. Thus, the patient should be at the Centre stage of the health care service, and the experience of service should be measured as one of the outcomes (Rossouw, 2010). Furthermore, Rossouw (2010) outlined that the Western Cape health care strategy for 2020 includes a focus on the patient's experience of service, to improve health outcomes through monitoring and evaluation and to enhance Primary Health Care services. Turkson (2009) stated that the Department of Health cannot claim delivering of quality health care service to the patients whilst patients are dissatisfied with the health care service delivery. The problem of perceived poor quality of service. Prentice and Pizer (2007) reported that the poor quality of care and poor management affect the service delivery negatively.

2.9. Conclusion

This chapter discussed literature review on factors that contribute to long waiting time in the Outpatient Department (OPD), maternity and at clinics. The literature review included factors affecting waiting time, goal of reducing long waiting time, service time, patient satisfaction and quality of care. Chapter 3 discusses the research methodology used for the study, the data collection instrument, as well as ethical considerations.

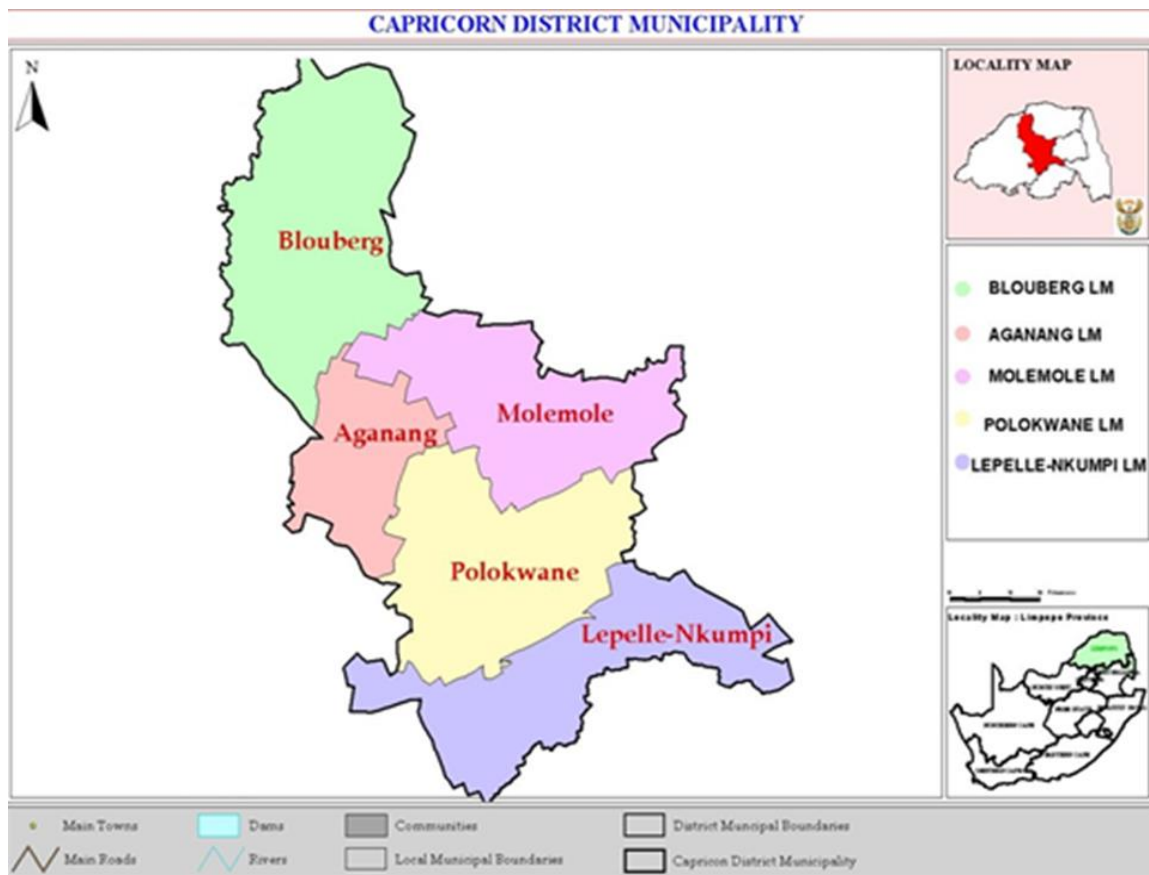
CHAPTER 3

RESEARCH METHODOLOGY AND DESIGN

3.1. Introduction

A quantitative research methodology, applying the cross-sectional design, was applied in determining the perception of patients on factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo Province. Quantitative Research exhibits a set of decisions regarding what topics to be studied among what population with what research methods and what purpose (Babbie & Mouton, 2011). In this study, strategies on waiting time was developed based on the factors, questionnaires that were described by patients.

3.1. Study Site



3.1: *The Blouberg Health Centre Map*

Research Setting:

3.1 shows the Blouberg Health Centre map which is the study site. Capricorn district consists of five municipalities, namely; Blouberg, Lepelle-Nkumpi, Aganang, Molemole and Polokwane.

The study was conducted at Blouberg Health centre (BHC), which is a primary health care centre, located at Blouberg Municipality, Capricorn district, Limpopo Province. BHC is situated in Inverran village also called Trestern village, north-western side of Polokwane City, a rural area in Blouberg Municipality, about 110km away from Polokwane city. Blouberg health centre serves the whole of Blouberg municipality clinics, area 1, 2 and area 3. It is a district health centre and also situated at Bochum (Senwabarwana), western side of the Central Business District (CBD) area and 20km away, on My Darling road which is located on the western side of Alldays' Road.

3.3. Quantitative research method

In this study, quantitative research method was used in order for the researcher to find out factors contributing to long waiting time in the Blouberg Health Center, of the Capricorn district, Limpopo province, South Africa. Brink et al. (2011) explain that quantitative research method is an approach that emphasizes the collection of numerical data and the statistical analysis of the hypothesis proposed by the research. Quantitative research focuses on a small number of concepts and strive to generalize research results to largest contexts (Botma, Greeff, Mulaudzi & Wright, 2010). In the context of this study, the researcher used the quantitative research method to obtain information about factors contributing to long waiting time. Copies of a self-developed questionnaire were distributed to patients to describe factors contributing to long waiting time in the Blouberg Health Centre of the Capricorn district, Limpopo province, South Africa.

3.4. Research Design

Quantitative research is a structured way of collecting and analyzing data obtained from different sources. Quantitative research design was used to collect numeric data regarding the factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo province. A descriptive and cross-sectional designs were used as follows:

3.4.1 Cross-sectional research design

A cross-sectional design will be adopted to collect data at one point at a time (Brink et al., 2012). A cross-sectional design will be used to identify and determine the factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo province.

3.4.2 Descriptive research design

The descriptive design is a method that gives accurate portrayal of the characteristics of target groups (Polit & Beck, 2012). In descriptive design, the researcher must not manipulate any variables and must determine the relationship between variables. This method will be interested in identifying and describing the factors contributing to long waiting at Blouberg Health Centre, Capricorn district, Limpopo Province. The researcher searches for accurate information about characteristics of a single subject (Brink, et al., 2012).

3.5 Population and Sampling

3.5.1 Population

The population in this study were all patients who came for services like immunization services, family planning services, HIV management services, chronic services, acutely ill patient services, midwifery services and mental health care services at Blouberg Health Centre. These patients visit the community health center on a daily basis and therefore of all the attending patients these patients experience the inconvenience of long waiting times the most. According to the statistical records of the Blouberg Health Centre, the total population of the patients are 31356 in the financial year 2017/2018.

3.5.2. Sampling

McMillan and Schumacher (2010) define a sample as a group of individuals from whom the data is collected. It should, however, be noted that there are different sampling strategies. "Probability sampling" was used. The technique used was simple random probability sampling to ensure that all the respondents have an equal chance of being selected.

3.5.3 Sample size

The researcher selected respondents based on inclusion criteria. The researcher sampled 395 patients using Slovin's formula for determining the sample size:

Patients sample size

$$n = \frac{N}{1+Ne^2}$$

$$n = \frac{31356}{1+31356(0.05)^2}$$

$$n = \frac{31356}{1+31356(0.0025)}$$

$$n = \frac{31356}{79.39}$$

$$n = 395$$

Therefore, the sample size of this study was 395 patients waiting to be seen was given an explanation about the study and asked to volunteer to participate in this study. The researcher assigned numbers to units of population and started at any point on table of random numbers and read consecutive numbers in any direction horizontal (Schneider et al., 2007).

3.5.4 Inclusion criteria

All patients who attend day to day clinic services, including caregivers who accompanying children for immunization.

3.5.5 Exclusion criteria

Exclusion criteria are all patients who were acutely ill or in labour and the caregivers accompanying the patients.

Reason for exclusion and inclusion is to produce reliable results. These criteria contain limitations elements and usually based on factors such as age, gender and other elements based on study.

3.6 Data collection

Brink, et al. (2012) argue that "survey studies are concerned with gathering information from a sample of the population and the emphasis in the collection of data in survey studies is on structured indirect observation, questionnaires, and interviews". It is in the researcher's view that, data collection entails a process of acquiring information

from the research subjects. Therefore, a data collection technique that will be used in this study is a primary data (self-constructed questionnaire).

3.6.1 Questionnaire

Bless and Higson-Smith (2013) define a questionnaire as an instrument of data collection consisting of a standardised series of questions relating to the research topic to be answered in writing by the respondents. The questionnaire was chosen because it is easy and inexpensive to administer. It saves time, money and effort, it guarantees confidentiality to the respondents as they remained anonymous, but also allowed them, freely and honestly express their views without fear of victimisation (Babbie & Mouton, 2011).

The self-developed questionnaire consisted of forty (40) item questions, arranged into five (5) sections namely: Section I: three (3) item questions of social demographic data; Section II: ten (10) item questions of areas where the patient waited; Section III: eight (8) item question of type of service sought by patient; Section IV: fourteen (14) item questions which consisted of reasons for not receiving care and Section V: consisting of five (5) item questions of recommendations regarding reduction of waiting time (see Appendix 1).

Questionnaire were administered by the researcher through descriptive method and sent to respondents by face to face contact. The researcher translated questionnaire into language known by the patient. A covering letter consisting of clear instructions for the completion of the questionnaire, research purpose, and the ethical aspects were compiled and attached as an introduction to the questionnaire.

3.6.2 Pilot study

According to Burns and Grove (2009), pilot study refers to a small-scale test of method and procedures, which is used in a large-scale test. Its purpose is to examine the feasibility of approach that is intended to be used in a large scale. Pilot study is a crucial element of a good study design. It increases likelihood of success. This can provide insight for researcher and the supervisors.

A self-designed questionnaire was sent to both statistician and supervisor for review. The pilot study also included experts in the field of study who are knowledgeable regarding questionnaire construction. The questionnaire was evaluated for content-related validity and face validity. The comments obtained from the experts were used to improve the quality of the questionnaire.

The questionnaire was tested on 10 patients who visited Blouberg Health Centre, seven (7) OPD units and three (3) maternity records files, all of whom were not part of the main study.

A pilot study was performed to determine the clarity of questions, correct ambiguous instructions and wording, improve the success and effectiveness of the instrument; and determine the completeness of the response sets and the time required to complete the questionnaire, and also to test the data-gathering techniques (Botma et al., 2010).

3.6.3 Pilot study results

All questionnaires were coded and analysed, but some respondents did not answer all the questions; apparently because instructions were not clear. These respondents used during pre-testing did not form part of the main study. Only 1 (10%) was male and 9 (90%) were female patients; not surprising given that there are more female dominating patients than males. The respondents did not answer all the questions as some instructions were not clear. Accordingly, it was later refined before being distributed for the major study. For instance, the instruction "Tick the correct answer according to the key below" was refined to "Tick answer on the availability of the following in your unit, according to the below".

- *Data collection process for the main study*

The respondents were approached in the Blouberg Health Centre and they were briefed about the nature and main purpose of the research. The respondents who agreed to participate in the study were requested to sign the informed consent forms. Then the researcher distributed the questionnaires to the respondents who were sampled, and they completed them independently. Of the 395 questionnaires distributed, all the questionnaires were completed. The completed questionnaires

were collected by the researcher after about 50 minutes on the same day. Data were collected over four weeks from the 12 May 2019 to 07 April 2019.

3.7 Data analysis

Statistical Package for the Social Sciences (SPSS) version 25 software is one of the most popular statistical packages which can perform highly complex data manipulation and analysis with a simple instrument (Burns & Grove, 2009). Data from the questionnaire were cleaned, verified and validated by detecting and correcting corrupt or inaccurate record to minimize errors, and missing values. Responses from the questionnaire were coded and entered into excel, then exported to IBM SPSS Statistics version 25, which were used for data analysis. With the assistance of university statistician, data were analysed using SPSS on perceptions of patients on factors contributing to long waiting experience at Blouberg Health Centre (Brink et al., 2012).

- *Statistical data analysis approach*

Statistical analysis was conducted during survey development phase, and also after data had been collected, for the final study. The Cronbach's Alpha was used to test internal consistency or reliability of a set of scale or test items. Descriptive for graphs and frequency whereas for comparisons of two populations used independent T- test.

3.8 Validity

Validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration (Babbie & Mouton, 2011). Specialists from University of Limpopo's Department of Nursing were asked to assist with the suitability and relevance of questions for validity of questionnaire instrument. Validity is the extent to which the instrument measures the attributes of a concept accurately. By adopting a single administered structured questionnaire, the demerits of a questionnaire are controlled. First, the questionnaire removed some of the threats to external validity. It assured participation of respondents, thus guaranteeing a high response rate and certainty in generalizability of findings to the sample of the study. Second, it minimized ambiguities.

3.8.1 Content Validity

Content validity is an assessment of how well the instrument represents all the components of the variable to be measured. Validity was ensured by the components with which items covered the important areas of waiting time (de Vos et al., 2011). The researcher based the claim on a literature review when constructing data collection instrument (Brink et al., 2011). Validity of the instrument was ensured by conducting intense literature review on factors contributing to long waiting time. Content validity was ensured when the self-developed questionnaire was presented to the study supervisor, co-supervisor, the statistician and the research committee in the field of study for evaluation of content validity of the instrument. All the items of the questionnaire were evaluated (Babbie & Mouton, 2011), **Appendix 6**.

3.8.2 Face validity

Face validity is a subjective determination that an instrument is adequate for obtaining the desired information. On the surface or the 'face', the instrument appears to be an adequate means of obtaining the desired data (de Vos et al., 2011). The questionnaire was submitted to the supervisor, senior degree panel and the statistician, to be checked for the ability to measure what it is expected to measure. The instrument will be checked whether it contained the relevant items to be measured; it had instructions and headings that guided the respondents (Goodman & Moule, 2014).

3.9 Reliability

Reliability is the ability of the instrument (questionnaire) to measure the attributes of a concept or construct consistently (LoBiondo-Woods & Harber, 2010). Internal reliability was verified by Cronbach's alpha that generally increased as the inter-correlations among test items increase and is thus known as an internal consistency estimate of reliability of test scores especially liker scale questions.

3.10 Bias

Bias is any influence that produces a distortion or misrepresentation of an outcome of a particular finding of a study (Brink et al., 2011). The researcher did bracket all what is known about the problem in order to avoid influencing the outcome of research and to avoid error which can affect the quality of results in the study. The researcher

avoided asking respondents leading questions. The participation was determined by “Probability sampling” design. The technique used simple random probability sampling before the study begins, to ensure that there is no systemic bias in their group. The researcher avoided too small or too large sample in order to get accurate answers. The researcher ensured that respondents understand all questions in a questionnaire and the question are clear (Brink et al., 2011).

3.11 Ethical considerations

Ethical clearance was granted by the Turfloop Research Ethics Committee (TREC), **find the approval of the Project Number in the Appendix: 3, TREC Certificate TREC/20/2019: PG**, allowing the researcher to conduct the research study.

Permission to conduct the study was obtained from the Limpopo Province, Department of Health Ethics Committee, **find the permission letter from LDoH in the Appendix: 4**, allowing the researcher to sought permission with the selected research setting.

Permission to collect data from Blouberg Health Centre was granted the Heath Centre management, find **the permission letter from Blouberg Centre, in the Appendix: 5**, allowing the researcher to conduct the study in Blouberg Health Centre.

Questionnaires were distributed, as well as from the respondents. At the beginning of each questionnaire survey each respondent was given a ‘Respondent Information Leaflet’ concerning the study and a written consent.

- *Informed consent*

Informed “consent implies that all possible or adequate information on the goal of the investigation, the procedures were followed during the investigation” be rendered to potential subjects or their legal representatives, respondents signed a consent form prior completing the questionnaires (Babbie & Mouton, 2011).

A respondent voluntarily agrees to participate in a research study in which he or she has full understanding of the study before the study begins (Brink et al., 2011).

The researcher ensured informed consent by explaining to the respondents what was going to be investigated, the expected during of the investigation, the possible

advantage, disadvantages and dangers to which respondents may be exposed (Brick et al., 2011; De Vos et al., 2011). The researcher informed the respondents that the information shared between the respondents and the researcher is not going to be divulged to anyone who is not involved with the study, ***find the informed consent in the Appendix: 2***, which the respondent was supposed to complete prior the completion of the questionnaire.

The respondents were informed that they had the liberty to withdraw from the study at any time without being harmed (De Vos et al., 2011). The respondents signed a consent form as evidence of granting the researcher permission. The research ensured that the signed consent form was treated with utmost discretion and stored away in a correct manner so that a particular form can easily be found if the need arises (De Vos et al. 2011). The researcher explained the data collection method used, namely questionnaires (Brick et al., 2011).

- *Confidentiality*

Brink et al. (2011); and LoBiondo-Wood and Haber (2010) defined confidentiality as the researcher's responsibility to prevent all data gathered during the study from being divulged or made available to any other person. The researcher assured the respondents that the information about the respondents would not be made available to anyone who not involved with the study, by keeping the completed consent form in a locked cupboard together with completed questionnaires. The researcher instructed the respondents not to write their surnames, but to put names only on the consent form. The researcher ensured that the names of the respondents were not used on the questionnaires, instead codes were used to trace in case of entry error. The respondents were informed that they had the right to withdraw from the research investigation at any point if they wished to. The respondents also had the right to refuse to answer any question asked and to have the confidentiality of their data protected (Brick et al., 2011; LoBiondo-Wood & Haber, 2010).

- *Anonymity*

Anonymity means that no one, including the researcher, should be able to identify any respondents afterwards (De Vos et al., 2011). Anonymity was ensured by keeping the respondents identify unknown, even to the investigator. The respondents were also assured that neither their names nor their hospital names would appear on the researcher that the collected data will be entered into the computer using codes. Codes were used during analysis. A contact person was used during data collection, so that the respondents could remain anonymous to the researcher.

- *Voluntary participation*

According to Babbie and Mouton (2011), voluntary participation refers to the willingness of an individual to participate in research, as no one should be forced to participate. Respondents in this study were informed that their participation in the study was voluntary and respondents could withdraw from the study anytime if they felt they could not continue without any consequences.

- *Beneficence and non-maleficence*

The researcher ensured that the participants and the institution that they would not be in any harm to the research. This was ensured by keeping all documents confidential. A researcher is responsible for carrying out sound research that is consistent with IRB approval. This should be included in protocol and study. The basic principle of ethical practice is important (stress the need to do well and do not harm).

According to Botma et al. (2010), the principle of beneficence is grounded on the premises that a person has the right to be protected from harm and discomfort and one should do good and, above all, no harm. The principal of beneficences was ensured by protecting the respondents from physical and/or emotional harm discomfort as Botma et al. (2010) stated. The respondents were informed beforehand about the potential impact of the investigation.

3.12 Conclusion

This chapter describe the research methodology and design in details. Ethical principles were adhered to throughout. In addition, the respondents' names remained anonymous and codes were used instead of names. Chapter four will present the results and discussion of results.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

This chapter discusses the results of data collected from the respondents. The data collected from the quantitative responses were analyzed using IBM SPSS Statistics version 25 with the help of the statistician. The descriptive statistics in the form of graphs, cross tabulations and other figures were used for closed-ended questions. Inferential techniques included the use of chi square test values and spearman correlation and interpreted using p-values. The inferential statistics provided a way for the researcher to look at the data in the study and decide how easily the results can be generalized to the population. It starts by describing the socio- demographic characteristics, and then followed by substantive findings of the study

The demographic data were collected to assess the variation in the distribution of respondents by the gender, age and status of patients.

4.2 Presentation of results

Data collected were presented with the aid of Figures and Tables.

4.2.1 Section I: Social Demographic data

This information comprised of age category (years) gender and patient status (staff, staff dependent and student) as shown in table below:

4.2.2.1 Gender of the respondents

There was a need to determine the gender of the respondents in order to enable the researcher to make their biographical inferences.

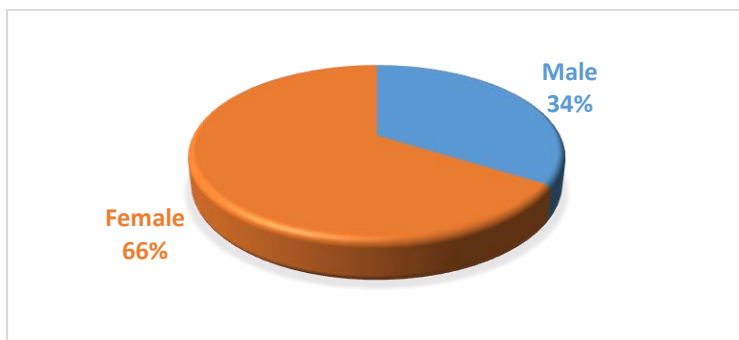


Figure 4.1: Gender of the respondents (n=395)

Figure 4.1 depicts the gender of respondents. In the study, the female participants were 260 (66%) and male were 135 (34%). The results show that majority of patients seen at the clinic are females.

4.2.2.2 Age distribution of respondents

The participants were required to indicate their ages in order to establish whether age had any influence on the factors contributing to long waiting time.

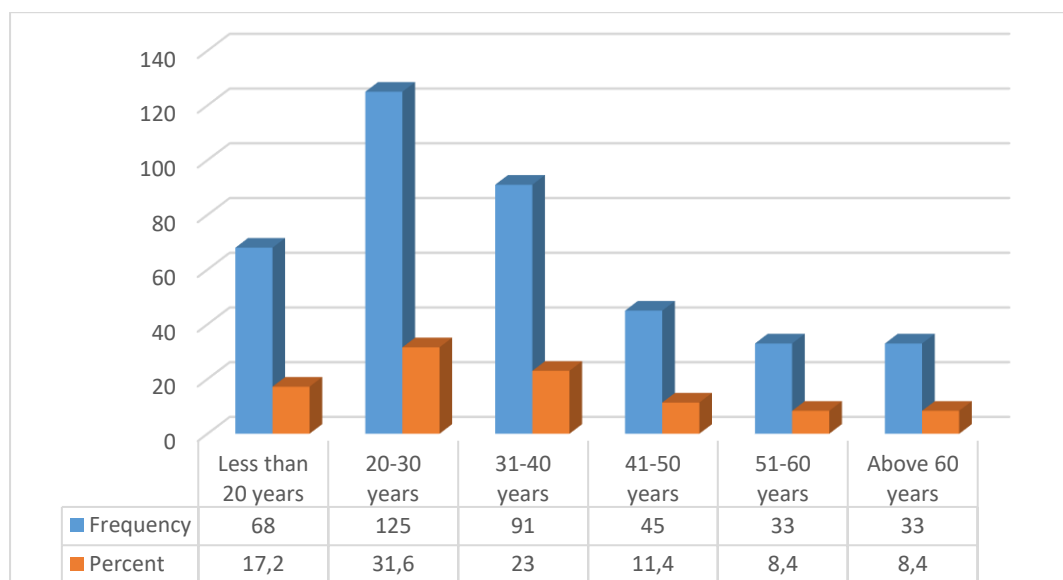


Figure 4.2: Age distribution of respondents

It was evident based on the figure 4.2 that majority of the responded were between 20 and 30 years 125 (32%) and 31 to 40 years 91 (23%), followed by age group less than

20 years with 68 (17%). Lastly, age group between 41 and 50 years 45 (11%), 51 and 60 years 33(8%) and above 60 years had 33 (8%), respectively.

4.2.2.3 Patient status

Patients' status was also considered in this study.

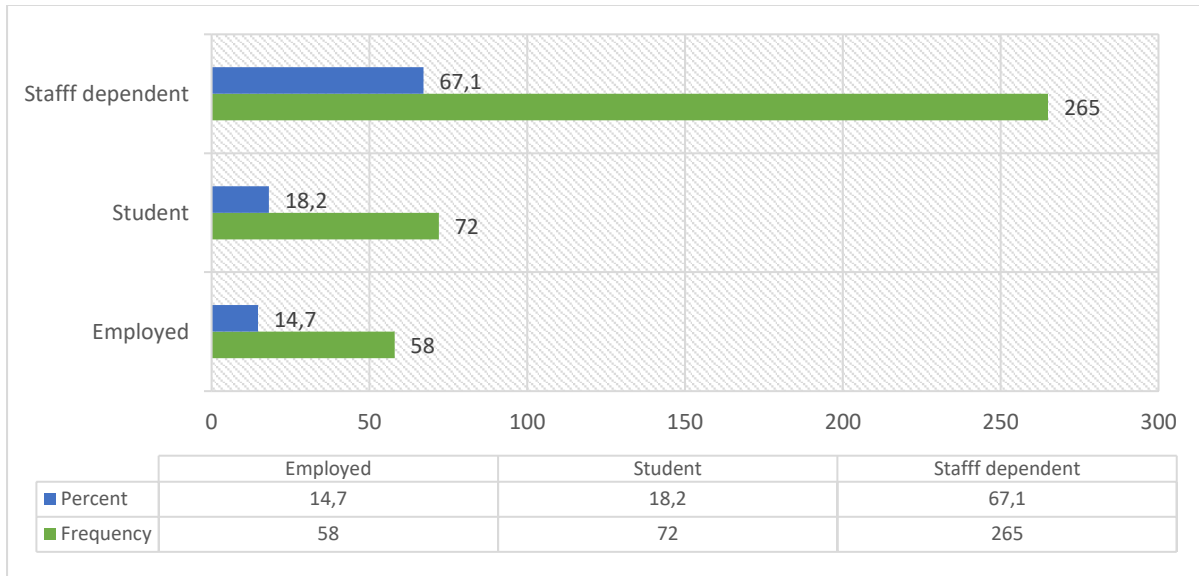


Figure 4.3: Patients status

Figure 4.3 shows the patient status. The results indicate that majority of patients were staff dependents 265 (67%), followed by students with 72 (18%) and employed with 58 (15%).

4.2.3 Section II: Patient rating waiting time at service points

4.2.3.1 Patient rating waiting time at service points

Patients were asked to rate the waiting time at service points. Results below show the responses of the respondents:

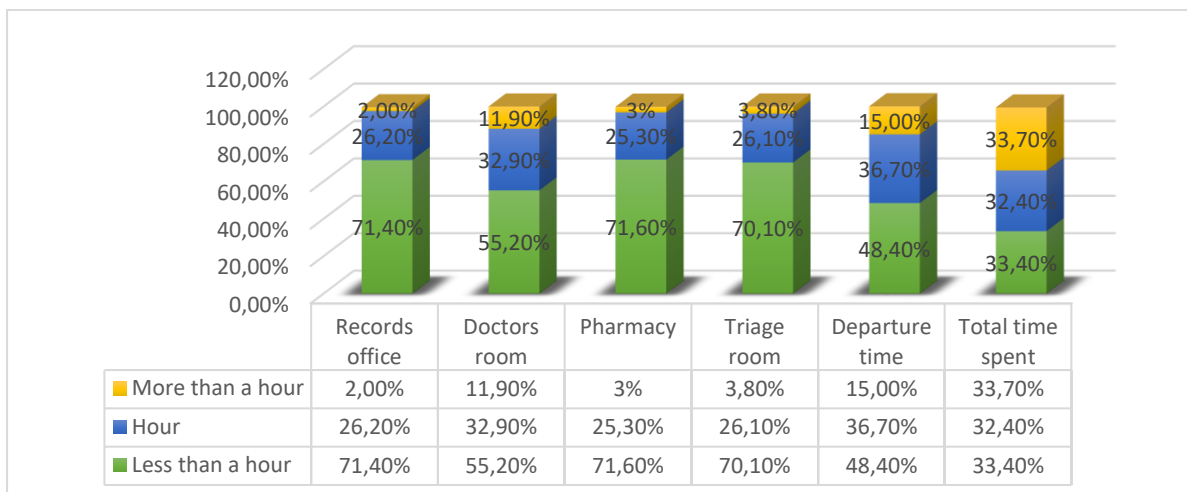


Figure 4.4: Rating of waiting time at service points

Figure 4.4 shows the rating of waiting time at service points. More than (70%) of the patients rated the waiting time at records office, pharmacy and triage room as appropriate (less than an hour), while the doctor's office scored the least for appropriate at only (55%). Generally, patients complained that they spent more than an hour in clinics (33.7%).

4.2.3 Section III: Type of service sought by the patient

4.2.3.1 Proportion of patients seeking various services at the Clinic

Patients come to the facility for various services. The services sought by various patients is as shown in figure 4.4 below

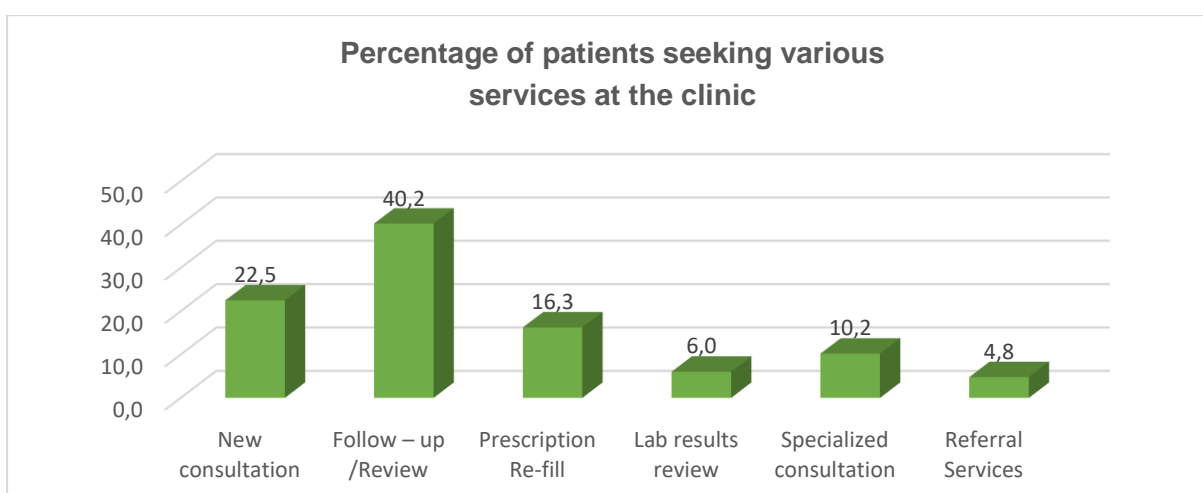


Figure 4.5: Proportion of patients seeking various services at the clinic

It is evident based on figure 4.5 that the results suggest that most patients visit the clinic for review 158 (40%) and new consultation 90(23%), while some came for

prescription refill 63(16%), specialized consultation 39(10%), lab results review 23(6%) and referral service 19(5%). Most of the patients selected more than two services. Since most patients chose more than two services it was not possible to do cross tabulation. The patients who sought others 3(1%) included checkup and filling of medical forms.

4.2.3.2 Proportion of patients who received all services

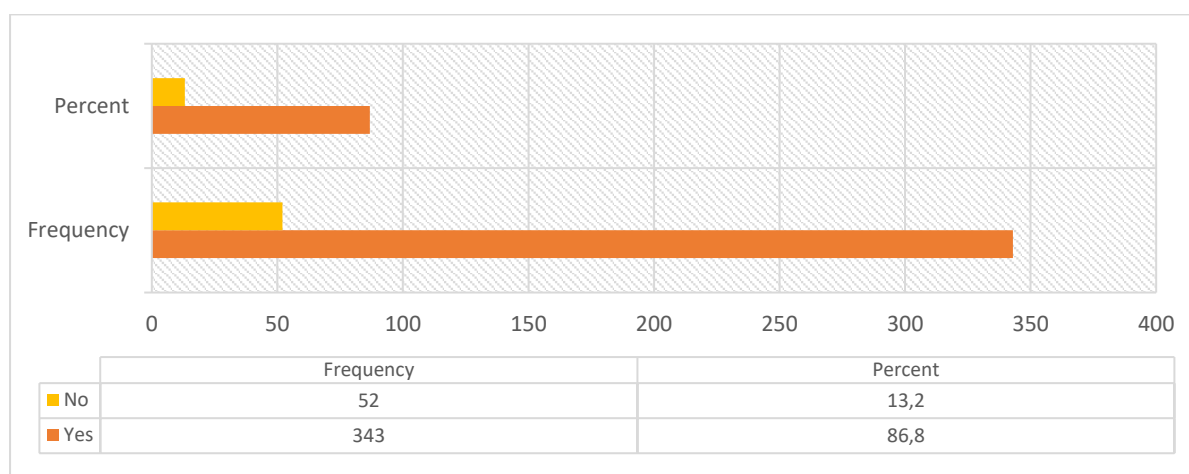


Figure 4.6: Services received

Figure 4.6 shows that 343 (87%) of patients who participated in the study received all the services while only 52 (13%) did not receive all the services. Most of the patients did not receive all the services due to shortage of drugs.

4.2.4 Section IV: Reasons for not receiving service at the clinic

4.2.4.1 Reasons for not receiving care service at the clinic

In this section, the researcher established how the respondents gave reasons for not receiving service at the clinic. Respondents had to indicate whether they agreed or disagreed with the reasons provided.

Table 4.1: Reason for not receiving the Services at the Clinic

Item. No	Statements	Strongly agree	Agree	Disagree	Strongly disagree	Total
SecIV17	Doctor not available	46(12%)	280 (71%)	25(6%)	44 (11%)	100%

SecIV18	Lab results not ready	14(4%)	28(7%)	291(74%)	62(16%)	100%
SecIV19	Drugs not available	56(14%)	266(67%)	42(11%)	31(8%)	100%
SecIV20	Left without being seen by doctor due to long waiting	18(5%)	35(9%)	267(68%)	75(19%)	100%
SecIV21	Professional nurse not available	272(69%)	75(19%)	35(9%)	13(3%)	100%
SecIV22	Left without being seen by professional nurse due to long waiting	18(5%)	26(7%)	275(70%)	76(19%)	100%
SecIV23	Equipment not available	63(16%)	261(66%)	57(14%)	14(4%)	100%
SecIV24	Material resources not available	49(12%)	252(64%)	79(20%)	15(4%)	100%
SecIV25	Do you think the availability of staff at their work stations affects how long your patient wait in the clinic?	126(32%)	120(30%)	138(35%)	11(3%)	100%
SecIV26	Do you think staffs in this clinic are available when you need them to attend to you?	125(32%)	153(39%)	78(20%)	39(10%)	100%

Table 4.1 shows the findings of ten statements related to reasons for not receiving the services at the clinic. Analysis of the responses from question SecIV13 to SecIV22 are as follows:

- *SecIV17: Doctors not available*

In the Table 4.1, SecIV17 shows that the majority of respondents agreed that doctors are not available. This is supported by a convincing majority of 280 (71%) agreeing plus 47(12%) strongly agreeing with the statement. The other 24(6%) of the respondents strongly disagree and 43(11%) agree with the statement. This implies that the long waiting time is caused by non-availability of doctors.

- *SecIV18: Lab results not ready*

In the Table 4.1, SecIV18 shows that the majority of respondents disagreed that lab results are not ready. This is supported by a convincing majority of 292(74%) disagreeing, plus 63(16%) strongly disagreeing with the statement. The other 16(4%) of the respondents strongly agree and 28(7%) agree with the statement. This implies that the long waiting time is not caused by availability of lab results.

- *SecIV19: Drugs not available*

In the Table 4.1, SecIV19 shows that the majority of respondents disagreed that drugs were available. This is supported by a convincing majority of 264(67%) agreeing, plus 55(14%) strongly agreeing with the statement. The other 32(8%) of the respondents strongly disagree and 43(11%) disagree with the statement. This implies that the long waiting time is caused by availability of drugs.

- *SecIV20: Left due to long waiting by Doctors*

In the Table 4.1, SecIV20 shows that the majority of respondents disagreed that they are left without being seen by doctors due to long waiting. This is supported by a convincing majority of 268(68%) disagreeing, plus 75(19%) strongly disagreeing with the statement. The other 20(5%) of the respondents strongly agree, while 36(9%) agree with the statement. This implies that the long waiting time is not caused by patients who are left unattended by doctors while they are still in long waiting.

- *SecIV21: Professional nurses not available*

In the Table 4.1, SecIV21 shows that the majority of respondents disagreed that professional nurse are not available. This is supported by a convincing majority of 272(69%) agreeing plus 75(19%) strongly agreeing with the statement. The other 12(3%) of the respondents strongly disagreeing, and 36(9%) disagreeing with the statement. This implies that the long waiting time is not caused by availability of professional nurse.

- *SecIV22: Left due to long waiting for the Professional nurses*

In the Table 4.1, SecIV22 shows that the majority of respondents disagreed that they are left without being seen by professional nurses due to long waiting. This is supported by a convincing majority of 276(70%) disagreeing plus 75(19%) strongly disagreeing with the statement. The other 20(5%) of the respondents strongly agree while 28(7%) agree with the statement. This implies that the long waiting time is not caused by patients who are left unattended by professional nurse while they are still in long waiting.

- *SecIV23: Equipment not available*

In the Table 4.1, SecIV19 shows that the majority of respondents disagreed that equipment are not available. This is supported by a convincing majority of 260(66%) agreeing, plus 63(16%) strongly agreeing with the statement. The other 16(4%) of the respondents strongly disagree, and 55(14%) disagree with the statement. This implies that the long waiting time is caused by availability of equipment.

- *SecIV24: Material resources not available*

In the Table 4.1, SecIV24 shows that the majority of respondents disagreed that materials are not available. This is supported by a convincing majority of 252(64%) agreeing, plus 47(12%) strongly agreeing with the statement. The other 16(4%) of the respondents strongly disagree, and 79(20%) disagree with the statement. This implies that the long waiting time is caused by lack of the availability of material resources.

- *SecIV25: Impact of availability of staff at their workstations*

In the Table 4.1, SecIV25 shows that the majority of respondents agreed that the availability of staff at their workstations affects how long your patient waits in the clinic. This is supported by a convincing majority of 138(35%) agreeing, plus 12(3%) strongly agreeing with the statement. The other 126(32%) of the respondents strongly disagree, and 119(30%) disagree with the statement. This implies that the long waiting time is caused by the non-availability of staff at their workstations affects how long your patient waits in the clinic.

- *SecIV26: Staff's availability at the clinic when in need of them to attend to you*

In Table 4.1, SecIV26 shows that the majority of respondents agreed that the staff's availability at the clinic when in need of them to attend to, is very poor. This is supported by the majority of 153(39%) agreeing and 125 (32%) strongly agreeing that the staff's availability is very poor. However, the 78(20%) disagree and 40(10%) strongly disagree that the staff's availability is very poor. This implies that the staff's availability when needed by the respondents is very poor, thus affect their waiting time negatively.

4.2.5. Section V: Patient arrival time

4.2.5.1 Patient arrival time at the clinic

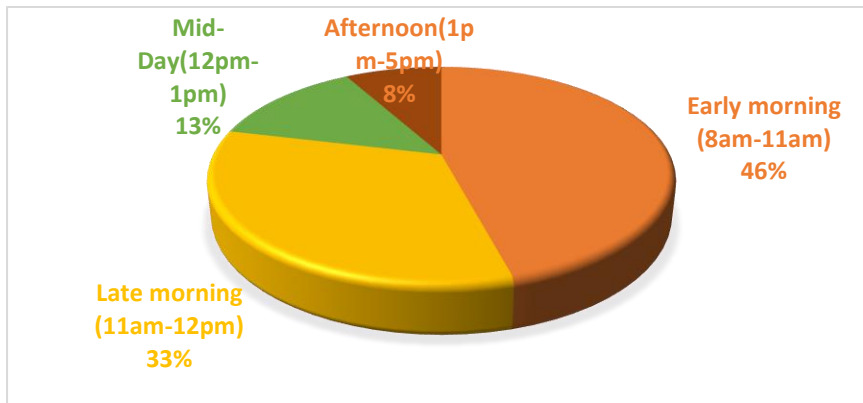


Figure 4.6: Patient arrival time at the clinic

Figure 4.6 shows the patient arrival time at the clinic. It is evident that the majority of patients 182(46%) arrive at the clinic in the early morning hours (8am-11am) and 130(33%) arrive late in morning (11am-12pm). Additionally, results show that only 51(13%) of patients who visit the clinic came during the mid-day (12pm-1pm) and 32(8%) in the afternoon between 1pm and 5pm.

4.2.5.2 Clinic appointment system

Results below present a classic appointment-scheduling problem that practitioners often encounter in processes in healthcare services in the selected clinic.

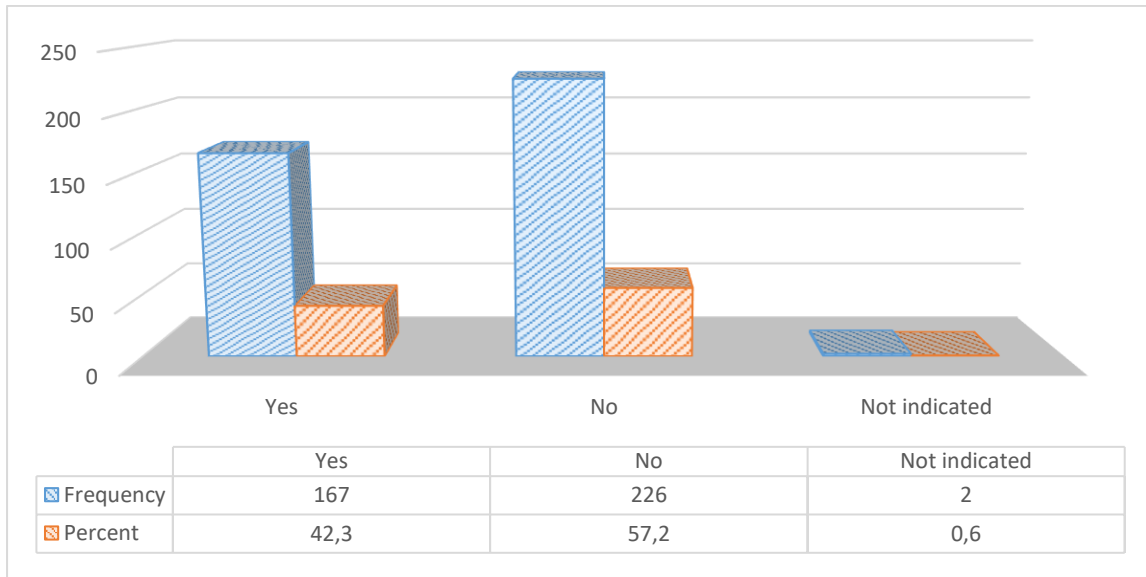


Figure 4.7: Clinic appointment system

Figure 4.7 shows clinic appointment system which indicates that only 166 (42.3%) of patients who visit the clinic are given appointment, while the majority 225 (57.2%) of the patients are just walk-in, with no appointment.

4.2.5.3 Arrival on time for the appointment

Patients were asked to indicate in terms of yes or no, if they arrive in for the appointment. Results are presented in the table below:

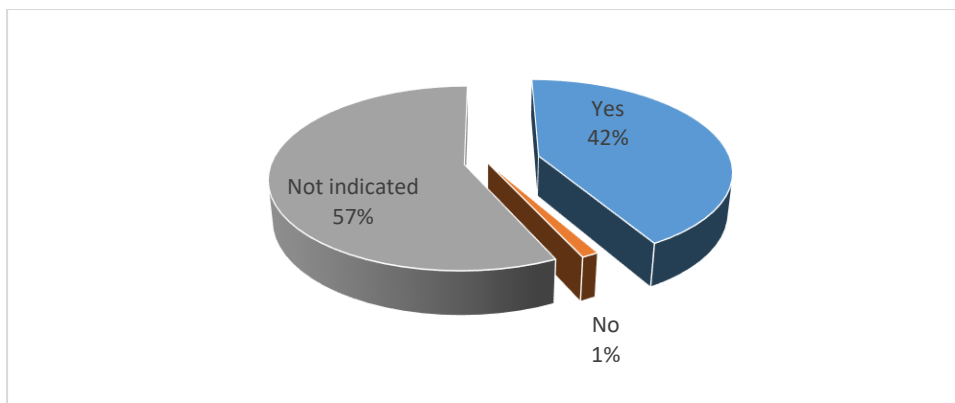


Figure 4.8: Arrival on time for the appointment

Figure 4.8 shows that majority 225 (57%) of patients did not indicate if they arrive in time. Moreover, 166 (42%) patients indicated that they arrive in time.

4.2.5.4 An appointment would help in reducing the waiting time

Respondents were asked if scheduled appointment would reduce waiting time. Table presents the finding.

Table 4.2: An appointment would help in reducing the waiting time

	<i>f</i>	%
Yes	324	82
No	71	18
Total	395	100

Table 4.1 shows an appointment that might help in reducing the waiting time. The 324(82%) respondents indicated that if appointment are scheduled would reduce waiting time, while 71(18%) felt it would not reduce time.

4.2.5.4 Acceptability of overall time spent

The researcher wanted to know how patients feel about the overall time spent in the facility. Figure below present the results of responses:

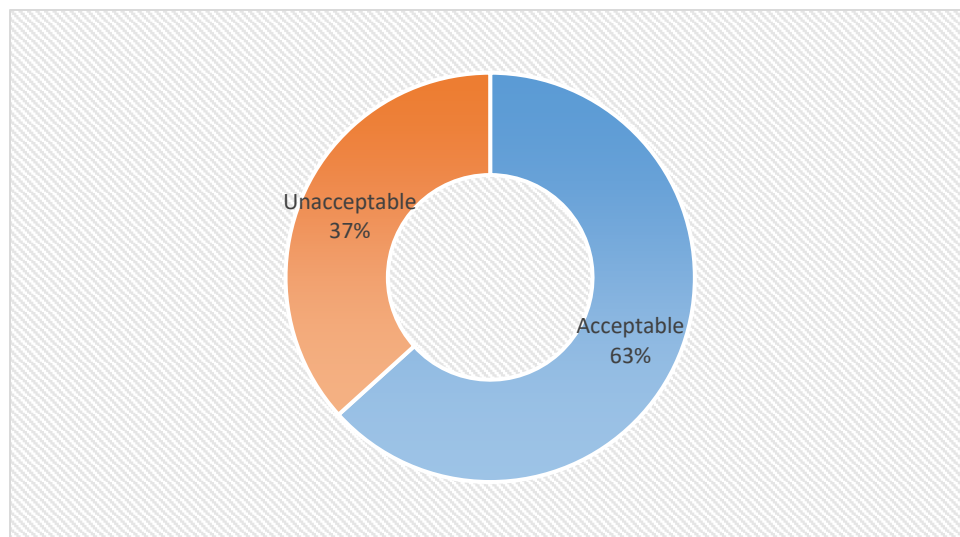


Figure 4.9: Acceptability of overall time spent

Figure above shows that 63% of patients felt that the time spent at the clinic is acceptable, while 37% felt that it was not acceptable.

4.2.6 Section VI: Areas that caused delays at the clinic

4.2.6.1 Areas that cause delay at the clinic

Researcher wanted to understand the area in the clinic contribute to delay of the service. Where exactly patients take long time. Results are presented below:

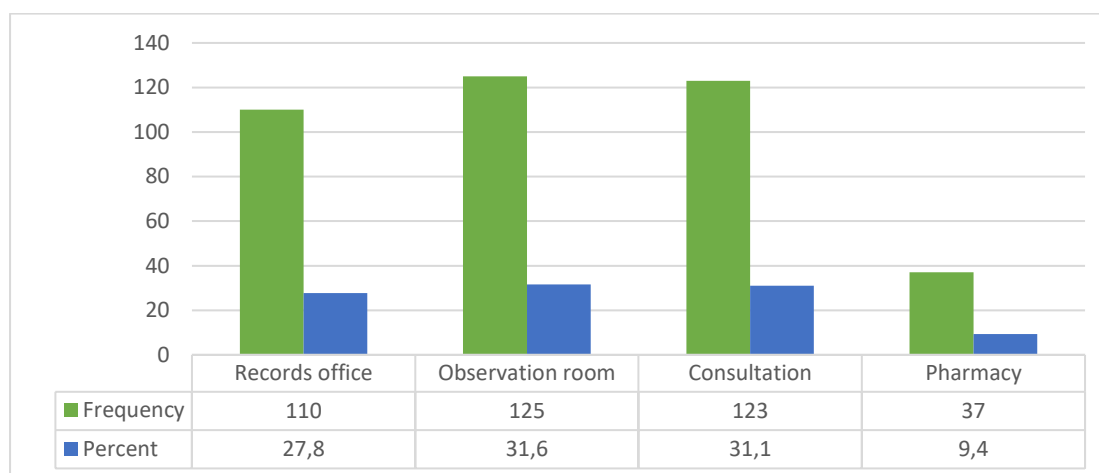


Figure 4.10: Areas that caused delays at the clinic

Figure 4.10 indicates that the patients who delayed at the clinic attributed this to the doctor's office. The results show that 31% of patients felt they waited the most at the observation and consultation rooms. They also indicated the records office take time (29%), while there is little complain about pharmacy at 9.4%.

4.2.6.2 Other Causes of long waiting time at the clinic

The researcher wanted to determine the other causes of long waiting time at a community Health Care Centre. Respondents were asked to identify the causes.

Table 4.3: Other causes of long waiting time at a community health care centre

Questions	Yes	No	Don't know
39. Do you pay for services?	12(3%)	363(91.90%)	20(5.10%)
40. Do you queue with people from other countries like Zimbabwe, Malawi, Nigeria, Mozambique and etc.?	299(75.70%)	49(12.40%)	47(11.90%)
41. Do foreign nationals pay for PHC services?	16(4.10%)	187(47.30%)	192(48.70%)
42. Do foreign national pay tax?	20(5.10%)	153(38.70%)	222(56.20%)
43. Are foreign nationals' population causing long queues?	252(63.80%)	57(14.40%)	86(21.80%)

44. Do you think 50 percent of foreign nationals occupy the maternity is the cause of long waiting?	241(61%)	41(10.40%)	112(28.70%)
45. Should the foreign national pay for services?	245(62%)	63(15.90%)	87(22.10%)

The table above presents the responses from the majority of respondents who indicated that they don't pay for services (92%) which are rendered by clinics. About 75.7% indicated that the causes of long waiting is because they queue with people from other African countries, such as Zimbabwe, Malawi, Nigeria, etc. who do not pay for PHC. However, more than one third (62%) of the respondents think that foreign national should pay for services instead of receiving them for free like the locals

4.2.7 Section VII: Suggestions by respondents on ways to reduce long waiting time

4.2.7.1 Suggestions by respondents on ways to reduce long waiting time

In terms of reducing patient waiting time, most of the respondents suggested that there is need to improve staff availability, enhance appointment system, increase service points and increase staff per shift. Results of responses are presented below:

Table 4.4: Response on suggestions on ways to reduce long waiting time

Item. No	Statements	Strongly agree	Agree	Disagree	Strongly disagree	Total
SecVII46	Increase staff per shift	270(69%)	113(29%)	9(2%)	2(1%)	100%
SecVII47	Improve staff availability at their status	225(57%)	154(39%)	12(3%)	3(1%)	100%
SecVII48	Introduce appointment system	218(55%)	138(35%)	32(8%)	6(2%)	100%
SecVII49	Increase service points	240(61%)	144(37%)	6(2%)	4(1%)	100%
SecVII50	Don't know	8(2%)	11(3%)	82(21%)	293(74%)	100%

- **SecVII46: Increase staff per shift**

In the Table 4.4, SecVII46 shows that the majority of respondents strongly agreed that increase staff per shift could improve patients' waiting time. This is supported by a convincing majority of 69% strongly agreeing, plus 29% agreeing with the statement. The other 1% of the respondents strongly disagree, and 2% disagree with the statement. This implies that increased staff per shift can improve patients long waiting time.

- **SecVII47: Improve staff availability at their status**

In the Table 4.4, SecVII47 shows that the majority of the respondents strongly agreed that an improvement in staff availability at their respective clinics could improve patients' waiting time. This is supported by a convincing majority of 57% strongly agreeing, plus 39% agreeing with the statement. The other 1% of the respondents are strongly disagreeing, and 3% disagree with the statement. This implies that improved staff availability at their respective clinics could improve patients' waiting time.

- **SecVII48: Introduce appointment system**

In the Table 4.4, SecVII48 shows that the majority of the respondents strongly agreed that introduction of appointment system could improve patients' waiting time. This is supported by a convincing majority of 55%, who strongly agree, plus 35% agreeing with the statement. The other 2% of the respondents strongly disagree and 8% disagree with the statement. This implies that the introduction of the appointment system could improve patients' waiting time.

- **SecVII49: Increase service points**

In the table above, SecVII49 shows that the majority of the respondents strongly agreed that the increase in service points could improve patients' waiting time. This is supported by a convincing majority of 61% strongly agreeing, plus 37% agreeing with the statement. The other 1% of the respondents are strongly disagreeing, and 2% disagree with the statement. This implies that an increase service points could improve patient waiting time.

- **SecVII50: Don't know**

In the table above, SecVII50 shows that the majority of the respondents strongly disagreed and disagreed 293 (74%) + 82 (21%) respectively, that they don't know what they can suggest how to decrease the long waiting time. The increase in service points could reduce the long waiting time. However, the other 8(1%) of the respondents are strongly agreeing, and 11(3%) agree with the statement.

4.8 Association between variables

4.8.1. Association between gender and overall acceptability of time spent

		How do you feel about the overall time spent in the facility today?		Total
		Acceptable	Unacceptable	
Gender	Male	92	41	133
	Female	158	103	261
Total		250	144	394

The results above show that 92 out of 394 male patients felt that the overall time spent in the facility is acceptable, while 41 out of 394 disagree, stating that they felt unwelcomed. In terms of female patients, 158 of 394 felt that it is acceptable to wait, while 103 of 394 said it is not acceptable. A cross tabulation to check overall acceptability of time spent in the clinic by respondents by gender showed that there is no significant difference with a chi square test value of 2.834 and $P = 0.092$.

4.8.2 Descriptive and Inferential between gender and availability of doctors

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Availability	Male	134	28.5597	2.86149	.24720
	Female	261	27.4330	4.38445	.27139

Based on the results, there is a sufficient evidence to say that the levels of overall availability of doctors of male and female patients are different ($F(393) = 2.694, p = 0.007$). The mean and standard deviation of male patients are $M = 28.56$ and $SD = 2.86$, and for female patient are $M = 27.43$ and $SD = 4.38$, indicating a significant difference in the overall availability of doctors between clinic female and male patients, using the 5% level of significance. The null hypothesis is rejected in favor of the hypothesis. There is evidence of the difference between male and female with regard to the overall availability of doctors.

A one-way analysis of variance on gender and total time spent at the clinic showed a insignificance difference between male and females ($P = 0.490$).

4.8.3 Patient arrival time and mean waiting time

There is a significant difference in the time spent at the clinic depending on patient status. Since there was a significant difference ($P = 0.041$) for patient status against waiting time a post hoc test, Tukey HSD was conducted to detect where the difference was. From the results, the significant difference is between employed/ staff and students ($P = 0.012$).

This is shown in table 4.10.

Table 4.5: Post Hoc test - Tukey HSD for patient status and total waiting time

(I) Patient status	(J) Patient status	Mean Difference (I-J)	Std. Error	Sig.
Employed	Student	0.072	0.144	0.012
	Staff dependent	0.208	0.119	0.187
Student	Employed	-0.072	0.144	0.012
	Staff dependent	0.136	0.109	0.423
Staff dependent	Employed	-0.208	0.119	0.187
	Student	-0.136	0.109	0.423

4.8.4 Univariate analysis of variance: Patient waiting time and Gender, Patient status and availability of doctors

To check for confounding, the three variables (gender, patient status and availability of doctors) that were significant in one-way ANOVA were run in a univariate analysis variance where gender and availability of doctors were found to be significant, and patients' status was, however, not significant as shown in table 4.5. This shows that patient status is a confounder.

Table 4.6: Univariate analysis of variance: Patient waiting time and Gender, patient

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	41.818a	193	0.217	0.936	0.677
Intercept	256.52	1	256.52	1108.4	0.000
Patient status	0.053	2	0.027	0.115	0.891
Total time spent	0.659	2	0.329	1.424	0.243

Gender	0.58	3	0.193	0.835	0.476
Availability of doctors	5.067	24	0.211	0.912	0.585

4.9 Discussion of Results

4.9.1 Social Demographic characteristics

More than half 260 (66%) of the respondents were females, and this was shown to be significant. These findings are similar to other studies done in Nigeria, (Oche & Adamu, 2013) and other developed countries (Whyte & Goodacre, 2016) but percentage for the female was higher than that found in another study in Nigeria (Umar., Oche & Umar, 2011). This study found that gender of the patient influenced waiting time which concurs with findings in similar studies (Oche & Adamu, 2013).

The results revealed that majority of chronic patients had knowledge about appointment system, though they were no longer adhering to appointment due to long waiting time and population rise due to high immigration rate including illegal immigrants in South Africa. Literature did not reveal this, but it was supported by the statement done on 14 November 2018 by Health Minister, DR Aaron Motsoaledi said foreign nationals are burdening the South African health system (SABC news) at one of the hospitals in Pretoria were patients were even sleeping on the floor, majority of those patients were not South Africans. DR A Motswaledi was the minister of health at that time in 2018. He was also interviewed at Thobela F.M with regard to long waiting time.

The study also reveals that majority of younger nurses are not dedicated to their work, which lead to long waiting time. More than 50% of patients at BHC were females, as statistics South Africa is female dominant, and most female patients utilize the clinic facility than males. Most of the respondent in BHC were from rural areas, Blouberg Health Centre is situated in Senwabarwana, which is a rural area. Patients preferred mobile clinics for service delivery.

4.9.2 Mean Patient Waiting Time

The mean patient waiting time was found to be comparable to other findings in Nigeria (Okotie et al., 2008). While these findings contrast with findings in Malawi in a rural health centre (Jafry, et al., 2016) which had a higher mean time. While most of the respondents spent one hour in the facility this average patient waiting time is lower than the average waiting time in Nigeria which was much higher (Umar, et al., 2011) but much higher than another (Chen et al., 2010). The mean waiting at Blouberg Health Centre may further be improved therefore if the areas of delay are addressed.

4.9.3 Type of services sought

The services sought at the facility were categorised as new general consultation, follow up consultation, prescription refill, specialised consultation, lab results and referrals. Most of the respondents sought for new consultations and specialised consultations. There was however no significant association between the services sought and the patient waiting time. This concurs with other studies done in India (Singh, et al., 2013). The explanation for the services sought could be because this is a workplace facility mainly for staff and students who therefore seek services because of convenience of access to services while at work. While majority of the patients who participated in the study received all the services they sought at the clinic, a few did not which was mainly due to lack of drugs. This study is similar to (Umar, I., Oche, M. O & Umar, 2011; Musinguzi 2015) however, the type of service sought by a patient was found not to affect the patient waiting time for this study.

4.9.4 Availability of Health Workers at their Station

From the findings, most of the health workers were available at their workstations with the least availability being reported at the doctors' area. In addition, communication to patients at the various service points on how long it would take before a health worker is available to help them was minimal in all the service areas with the least communication being at the records office. The reason for this finding could be that the record office is the start point for all patients. While this may be one of the first studies to address how availability of health workers at their station affect patient

waiting time. It is noteworthy that other studies have identified availability of health workers as important in reducing patient waiting time (Ameh et al. 2013; Oche & Adamu 2013). This study found that availability of health workers affected patient waiting time.

4.9.5 Patient Arrival Time

Like the findings of this study, similar studies found that majority of patients arrive in the health facility in the morning hours (Wanyenze et al. 2010; Tiwari et al. 2014). The arrival pattern of patients in this study could be more or less explained by the fact that majority are employees of the university who would like to be treated for the various health needs before they report to their work station. This could further be the reason for their response from majority that they feel being given an appointment will reduce patient waiting time and they prefer walking in for services as and when they need them. The respondents rating of waiting time of services at each service points showed that most of them waited longest at the doctor's consulting room. This concurs with other findings in similar studies (Wanyenze et al. 2010; Singh, et al., 2013) but contrasts with another (Musunguzi 2015) in Uganda that found out that registration and pharmacy areas had the longest waiting time.

The two main suggestions from the respondents on how to reduce patient waiting time in the clinic were to improve the availability of health workers at their station and to increase staff per shift. These suggestions are more or less the same with some given in another study (Ameh et al., 2013) and different from those suggested by respondents in Malaysia (Ir , et al., 2011). However, patient arrival time was not found to be a significant factor affecting patient waiting time in this study. It was also noted that the few patients who were given an appointment were not given a specific time for the appointment similar to another study in Uganda (Wanyenze, et al., 2010). According to the National Guidelines to manage the patients waiting time in Health facilities (2019), the last service point, record the time the patient leaves the facility. Note if patient is to return to facility for follow-up appointments then this time of departure should be recorded at reception when the patient makes their appointment.

4.9.6 Acceptability of Overall Time Spent in the Clinic

In general, more than half of the respondents found the overall time spent in the facility acceptable while most of the respondents waited for at least one hour to receive services and felt that this waiting time could be further improved if the areas of delay can be addressed. The results of the acceptability compare well with other studies in Nigeria (Oche & Adamu 2013; Ameh et al., 2013) and (Ho, 2014) in Singapore while they were slightly lower than that of a similar study (Ir , et al., 2011).

4.10 Develop strategies to reduce a long waiting time thus enhance quality care at Blouberg Health Centre



Figure 4.11: Strategies to reduce the long waiting time and enhance Quality Care

Figure 4.11 depicts the strategies to reduce the long waiting time at the Blouberg Health Centre, in order to enhance Quality Care based on the evidence-based suggested by respondents’.

- *Increase staff per shift*

This implies that increased staff per shift can improve patients waiting time.

- Patient and staff should work together to resolve challenges on long waiting time at comprehensive Primary Health Care (PHC) and Maternity Obstetric unit (MOU).
- Clinic committee meetings with the operational managers and acting OPMs should be maintained quarterly to enhance quality primary health care service.
- Liaison with the chiefs, community leaders, pastors, indunas with regard to clinic operation to be annually maintained in the form of imbizos.
- Consensus should be reached in the form of referral criteria to maternity unit, wellness and outpatient OPD in the form of internal policy.

- *Improve staff availability at their station*

This implies that improved staff availability at their respective clinics could improve patient waiting time

- Induction of newly appointed PHC employees should be emphasized.
- Gather patient information before scheduled time.
- Consultation of patient should start immediately after monitoring of vital data.
- Staff members in their respective stations starting with the ones issuing files should always be available and relieve each other when going for breaks so that the health care services could continue to avoid long waiting time.

- *Introduce appointment system*

This implies that the introduction of the appointment system could improve patients’ waiting time.

- Appointment system should be implemented effectively, each client should be allocated the appointment time and be adhered to by patients and primary health care workers.
- The security officers should assist with provision of the numbers at the main entrance (Gate) or implement a mobile queue solution to maintain order and reduce the patients waiting time.
- Card numbers provided to patients at the main entrance should be submitted at the exit gate.
- In case of emergencies which will interrupt the appointment times of other patients, the health care workers should redress the patients.
- *Increase service points*

This implies that an increase service points could improve patient waiting time.

- Sorting patients according different service points.
- Environment should be clean; a waiting area should be comfortable with social distance of 1 meter maintained. Crowded and noisy waiting rooms can agitate other customer.
- Time of arrival and time of departure should be indicated at exit gate by security.

4.11 Integration of findings to the theoretical framework

This study sought to assess the patient waiting time and identify associated factors using the queuing theory. Blouberg Health Centre, like many health facilities, utilizes the single channel and several phases. Application of this theoretical framework is therefore important to help in predicting how long a patient should take to receive a particular service, and this can be used to design facility specific patient management guidelines. This is where all patients register at one records office for file retrieval, then move to one nursing station for vital signs observation. They are then sent to several consultation rooms.

4.12 Conclusion

The present study examined the factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo Province to the associations between the social demographic characteristics, mean patient waiting time, type of services sought, availability of health workers at their station, patient arrival time and acceptability of overall time spent in the clinic. The researcher conducted a cross-sectional time study and questionnaire survey of 395 respondents.

Patients who were less satisfied with the social demographical status, were more females than male gender seemed to agree that the time they spent waiting and receiving care is long as less acceptable. However, several improvements in care services can be considered. Based on the findings of the study, the researcher developed some few strategies that would reduce a long waiting time thus enhance the quality care at Blouberg Health Centre. The developed strategies are increase of staff per shift, improve staff availability at their station, introduction of appointment system and increase of service points.

CHAPTER 5

SUMMARY, LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

5.1. Introduction

The chapter present the summary, limitations, recommendations and conclusion Of this study. The aim of the study was to determine the factors contributing to long waiting time at Blouberg Health Centre of the Capricorn District, Limpopo Province.

5.2 Achievement of the aim and objectives

5.2.1 The aim of the study

The aim of the study was to determine the factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo province.

5.2.2 The objectives of the study

The objectives of the study were to:

5.2.2.1 Identify the factors contributing to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo Province.

Based on the results of the study, these objectives were achieved as follows:

This objective was achieved as respondents identified factors that contributed to long waiting time at Blouberg Health Centre, Capricorn district, Limpopo province. The study revealed factors considered most important were lack of commitment; full time study leaves at the same year; workshops; sick leaves; increased population; sitting in tea room for hours; many foreign national without passports; staff shortages; laissez faire working style and transfers or escorting patients, while the nearby Hellen Franz Hospital (HFH) also transfer to the same hospitals, leading to mismanagement of budget reduced manpower and increased death rate. Females were the most dominant and are more than men (statistics south Africa).

5.2.2.2 Describe the factors contributing to long waiting time at Blouberg Health

Centre, Capricorn district, Limpopo Province.

This objective was achieved as the descriptive statistics was use to describe the factors contributing to long waiting time. More than half of the respondents rated the waiting time at records office, pharmacy and triage room as appropriate (less than an hour), while the doctor's consulting rooms, they waited longer than one hour.

5.2.2.3 Develop strategies based on the findings of the study, to reduce a long waiting time thus enhance Quality Care at Blouberg Health Centre.

This objective was achieved because the strategies to reduce a long waiting time thus enhance Quality Care were developed. The following strategies were developed increase staff per shift, improve staff availability at their station, improve staff availability at their station and enhance appointment system. The results revealed that majority of chronic patients had knowledge about appointment system, though they were no longer adhering to appointment due to long waiting time and population rise due to high immigration rate including illegal immigrants in South Africa.

5.3 Summary

This study sought to assess the patient waiting time and identify associated factors using the queuing theory. Blouberg Health Centre, like many health facilities, utilizes the single channel and several phases. Application of this theory is therefore important to help in predicting how long a patient should take to receive a particular service, and this can be used to design facility specific patient management guidelines. This is where all patients register at one records office for file retrieval, then move to one nursing station for vital signs observation. They are then sent to respective consultation rooms.

The descriptive cross-sectional quantitative method was used to determine factors that contributed to long waiting time in Blouberg Health Centre of the Capricorn district, Limpopo Province. The study population included the patients who were coming for consultation at maternity unit, chronic unit and acute outpatient department of

Blouberg Health Centre. Simple random sampling was used to ensure that all patients had an equal chance of been included in the study. Respondents were randomly selected from the incoming patient of the day of data collection and from appointment system of the day.

Questionnaires were used to collect data from patients and staff who were present on day of data collection and those who were coming for appointments at maternity, chronic, ART clinic, immunization and outpatient department. Data were collected by the researcher with the aid of contact person to ensure privacy and confidentiality and avoid bias. Analysis and interpretation of data was presented in the frequency tables and graphs.

This study sought to assess the patient waiting time and identify associated factors using the queuing theory. Blouberg Health Centre, like many health facilities, utilizes the single channel and several phases. Application of this theory is therefore important to help in predicting how long a patient should take to receive a particular service, and this can be used to design facility specific patient management guidelines. This is where all patients register at one records office for file retrieval, then move to one nursing station for vital signs observation. They are then sent to several consultation rooms. Therefore, this study, sought to answer three questions; how does the type of service sought by a patient affect the patient waiting time at Blouberg Health Centre? How does the patient arrival time at the clinic affect the waiting time? And how does the availability of health care workers at their workstation influence patient waiting time at Blouberg Health Centre?

Majority of patients stay in long queues and do not communicate with the employees with fear of not getting proper assistance leading to death in the facility such as maternal death and FSB (fresh still birth) or death related to difficulty in breathing in the referral hospitals. Some patients will leave the facility without help, due to some known nurse who will sit for tea for more than an hour. The results revealed that most of the respondents were dissatisfied with the waiting time at the queues to the consulting rooms of various clinics which was more than an hour. However, they were satisfied with waiting time at the records office, pharmacy and triage room which was less than one hour.

5.4 Limitations of the study

The study was limited to the outpatients who attended the public Blouberg Health Centre, Capricorn district, and the findings cannot be generalized to other public health centers in other districts and provinces.

5.5 Recommendations

Recommendations are arranged according to the points based of the results presented in chapter 4.

Findings in this study showed that there are still many gaps existing which need to be closed. Thus, there is a need for Blouberg Health Centre operational managers to address the areas of delay identified, in order to enable patients to get timely services.

5.5.1 Professional nurses (Midwifery Practice/ Clinical Nurse Practitioners/ and non-midwives)

- All staff should adhere to delegated duties.
- Duty schedules or allocation should be ready 2 weeks before month end.
- In-service training for the following:
 - Clerks on HPRS and data capture by AOPM
 - Nurses and data capture on TIER.net, quality of data management of T.B or ART Patients
 - All professional nurses on SVS updates and CCMDD synch registration of patient on computers.
- All midwives should be encouraged to attend perinatal or should be given morning perinatal report monthly.
- All midwives should utilize maternity case record effectively, from ANC
- All statistics, including Covid 19, TB, CCMDD, HIV, chronic should be collected, checked for errors by staff before verified by AOPM .after verification it the then be submitted to the next level till district.
- Staff should arrive early at the clinics especially clerks and assistant nurses to reduce delay in consulting patients by clinical nurse practitioners.
- More staff should be employed where there is shortages.

5.5.2 PHC practice

- Long waiting time to be monitored by OPM or AOPM daily and taking rounds.
- I recommend that Foreign national should pay for health care services at PHC. Those without passport should be reported to the police, reason being they will be bypassing Covid 19 regulations and they should be taken back to their countries.
- Id document or Passport to be produced by patients at the entrance of facility to prevent the patient from collecting treatment in different PHC facilities.
- Clerks or data captures should not open file for patient who do not produce the id document when opening files to monitor Covid 19 regulations, to make it easy for midwives to mom connect the antenatal patient who are coming for first booking or visit and to be able to insert the patient on the online CCMDD program.
- Emergencies such as bleeding patient, patient with respiratory distress or difficulty in breathing and pregnant woman who are in Labour should be given priority even though they do not have file.
- All foreign national should pay for primary health care services to prevent depleting of PHC resources as most foreign nationals were found to collect same medicine from different facilities for same patients such as Ante retroviral medicine.
- Identify areas that causes delay.
- All PHC patients to be given numbers at entrance of the facility to promote patient satisfaction and first come first served rule.
- Triage system should be used so that emergencies could be attended first.

5.5.3 Health Education

Patients to be educated about:

- Queuing adhere to appointments, early booking, social distance should be maintained at 1 to 2 meters.
- The provision of health education on specific health issues constitutes an acceptable and useful way of utilizing waiting time in the outpatient clinic (Ajayi, 2002).

5.5.4 Research

- Further research on the factors contributing to long waiting time that can investigate in both qualitative and quantitative research including a larger scale.
- Research on the study supermarket approach can be included in primary health care.

5.6 Conclusion

This study found that the mean waiting time in the consultation room of the health center was about an hour to get the services needed, which most patients felt was acceptable. Availability of healthcare workers, and especially the auxiliary nurses, was found to affect the patient waiting time at Blouberg Health Centre, with the majority of patients suggesting that improving availability of health workers at their stations will help reduce patient waiting time.

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APPENDICES

Appendix 1(a): Questionnaire

INSTRUCTIONS

Please indicate with an “X” in the appropriate space that which most closely represents your personal situation. Please mark one item only per question.

NUMBER..... DATE:

SECTION I: Socio-demographic data

1. Gender

Male	1
Female	2

2. In which age category do you belong?

Less than 20 years	1
21-30 years	2
31-40 years	3
41-50 years	4
51-60 years	5
60 years and above	6

3. What is your patient status?

Employee	1
Student	2
Staff dependent	3

SECTION II: Patient rating waiting time at service points

Areas the patient waited	Actual Time waited		
	↓ hour	1 hour	↑ hour
4.Patient arrival time at records office	1	2	3
5.Time the patient is called into the doctor's room	1	2	3
6.Time the patient spent at Pharmacy	1	2	3
7.Time the is received in triage room	1	2	3
8. Departure time to home	1	2	3
9. Total time spent in the clinic	1	2	3

SECTION III: Type of services sought by the patient

Proportion of patients seeking various services at the clinic	Yes	No
10.New consultation	1	2
11.Follow – up /Review	1	2
12.Prescription Re-fill	1	2
13.Lab results review	1	2
14.Specialized consultation	1	2
15.Referral Services	1	2

16. Proportions of patients who received all services.

Yes	1
No	2

SECTION IV: Reasons for not receiving service at the clinic

SA= Strongly agree; A= agree; D= disagree; SD=Strongly disagree.

Why did you not receive the service today?	SA	A	D	SD
--	----	---	---	----

17. Doctor not available	1	2	3	4
18. Lab results not ready	1	2	3	4
19. Drugs not available	1	2	3	4
20. Left without being seen by doctor due to long waiting	1	2	3	4
21. Professional nurse not available	1	2	3	4
22. Left without being seen by professional nurse due to long waiting	1	2	3	4
23. Equipment not available	1	2	3	4
24. Material resources not available	1	2	3	4
25. Do you think the availability of staff at their work stations affects how long your patient wait in the clinic?	1	2	3	4
26. Do you think staffs in this clinic are available when you need them to attend to you?	1	2	3	4

Section V: Patient arrival time

What time did you arrive at the clinic today?		
27. Early morning	(8a.m. – 11 a.m.)	1
28. Late morning	(11a.m. – 12.00pm)	2
29. Mid-day	(12p.m. – 1. p.m.)	3
30. Afternoon	(1p.m. – 5.p.m.)	4

31. Did you have an appointment for your visit today?

Yes	1
No	2

32. If yes in above, did you arrive on time for the appointment?

Yes	1
No	2

33. Do you think if you were given an appointment it would help in reducing the waiting time?

Yes	1
-----	---

No	2
----	---

34. How do you feel about the overall time spent in the facility today?

Acceptable	1
Unacceptable	2

SECTION VI: Areas that caused delay in the clinic

Areas that caused delay in the clinics	
35.Records office	1
36.Observation room	2
37.Consultation room	3
38.Pharmacy	4

Other causes of long waiting time at the Community Health Centre	Yes	No	Don't know
39Do you pay for services?	1	2	3
40. Do you queue with people from other countries like Zimbabwe, Malawi, Nigeria, Mozambique and etc.?	1	2	3
41. Do foreign nationals pay for PHC services?	1	2	3
42. Do foreign national pay Tax?	1	2	3
43. Is foreign national's population causing long queue?	1	2	3
44. Do think 50 percent off for foreign nationals to occupy maternity is the cause of long waiting?	1	2	3
45. Should the foreign national pay for services?	1	2	3

Section VII: Suggestions of respondents on ways to reduce long waiting time

SA= Strongly agree; A= agree; D= disagree; SD=Strongly disagree.

	SA	A	D	SD
46.Increase staff per shift	1	2	3	4
47.Improve staff availability at their status	1	2	3	4
48.Introduce appointment system	1	2	3	4
49.Increase service points	1	2	3	4
50.Don't know	1	2	3	4

This is the end of the questionnaire

Thank you

Appendix 1(b): Questionnaire (Sepedi)

INSTRUCTIONS

Hle, bontsha ka "X" mo lefelong leo le emelago kgetho ya boemo bja gago. Hle kgetha e tee feela mo go potsiso ye nngwe le ye nngwe.

NOMORO..... LETSATSI GWEDI:

KAROLO I: data ya tirela-leago

1. Bong

Monna	1
mosadi	2

2. O wela go mengwaga efe?

Ka fase ga 20 ya mengwaga	1
21-30 ya mengwaga	2
31-40 ya mengwaga	3
41-50 ya mengwaga	4
51-60 ya mengwaga	5
60 ya mengwaga go ya godimo	6

3. Maemo a gago ke afe?

Moshumi	1
Morutwana	2
Molwetsi	3

KAROLO II: Balwetsi hlatha nako yam o ba emago gona

	Nako ya tetelo ya nnete.
--	---------------------------------

Lefelo leo molwetsi a letelago thuso gona	↓ iri	1 iri	↑ iri
4.Nako yeo moletsi a fihlago ka yona ko defiling, nako yeo file e tlogago defiling go ya lefelong la baoki.	1	2	3
5.Nako yeo file e fihlago pele ga ngaka	1	2	3
6. Nako yeo Molwetsi a betswago ka mo ngaka a hlahlobelago gona.	1	2	3
7. Nako yeo molwetsi a beago file ka dihlareng.	1	2	3
8.Nako yeo molwetsi a tseago dihlare.	1	2	3
9. Nako yeo file e fihlago lepanteng le lekaleng.	1	2	3
10.Nako yeo molwetsi a betswago lepanteng le skaleng.	1	2	3
11. Nako ya o fihla kiliniking	1	2	3
12. Nako ya go tswa go ya gae	1	2	3
13. Nako ka moka ya go hlwa ka kliniking	1	2	3

KAROLO III: Mohuta wa thuso wo o hlokwago ke molwetsi

14. O hloka thuso e bjang lehono?

	Ee	Aowa
Go bonwa ke setsibi la pele	1	2
Go bowa gape ka letsatsi leo ba mphilego lona	1	2
Go tlatsa foromo ya dihlare	1	2
Go hwetsa dipoelo tsa laborotari	1	2
Go gwetsa thuso ya Mooki wa setsibi	1	2
Go gwetsa thuso ya go iswa pele.	1	2
Se sengwe e ka ba eng?		

15. O hweditse thuso ka moka tse o be o di hloka lehono?

Ee	1
Aowa	2

16. Ge karabo ele aowa, mo go 2 ka godimo,ke thuso e efe ye o sa e hwetsang?

Go bonwa (ka kakaretso)	1	Go bonwa ga ke setsibi	4
Tshekatsheko	2	Go fitisetswa pele	5
Dipoelo tsa laboratoro	3	Dihlare	6
Tse dingwe	7		

KAROLO IV: Mabaka a go se hwetse hlokomelo ya maleba

SA= Go dumela kudu; A= Go dumela; D=Go se dumele ; SD=Go se dumele kudu.

Ke ka lebaka la eng o sa gwetsa thuso lehono?	SA	A	D	SD
17. Go sebe gona ga ngaka	1	2	3	4
18. hlokego ya dipoelo tsa laborotari	1	2	3	4
19. hlokego ya dihlare dihlare	1	2	3	4
20. go sepela o sa bonwa ke ngaka ka baka la go ema nako e telele.	1	2	3	4
21. mooki wa setsebi ga a kgona	1	2	3	4
22. ke tlogile ke sa bonwa ke mooki wa setsebi ka baka la go ema nako e telele	1	2	3	4
23. hlokego ya didiriswa	1	2	3	4
24. hlokego ya mehuta ya mothopo	1	2	3	4
25. O nagana go re go ba gona ga bashumi mo lefelong la moshumo go dira gore balwetsi ba eme nako e telele mo Kliniking naa?	1	2	3	4
26. o nagana gore bashumi ba clinic ye ba gona ge o ba hloka gore ba o thuse naa?	1	2	3	4

Karolo V: Nako ya go fihla

27. ka masa	(8a.m. – 11 a.m.)	1
28. mesong	(11a.m. – 12.00pm)	2
29. Mosegare	(12p.m. – 1. p.m.)	3
30. Ka meriti	(1p.m. – 5.p.m.)	4

31. O na le taletso ya go tla ga gago kliniking lehono?

Ee	1
Aowa	2

32. Ge o re ee ka godimo, o fihlile ka nako go letsatsi la go bowa ya gago?

Ee	1
Aowa	2

33. O nagana gore ge ba o file letsatsi la go bowa , go tlo thusa go fokotsa nako ya go ema?

Ee	1
Aowa	2

34. O e kwa bjang ka nako ye o e dulang mo kliniking?

E a amogelega	1
Ga e amogelegi	2

Karolo VI: Didiriswa mabakeng a go fokotsa nako wa go ema.

Ke lefelo le lefe ko kliniking leo le dirilego gore o eme nako e telele ka sekgonagatsing sa kgoro ya maphelo?

35.Difiling	1
36.Lepanteng	2
37.Mo go bonwang molwetsi	3
38.Dihlareng	4

Mabaka a go dira gore go emiwe nako e telele mo kgorong ya tsa maphelo ya setshaba e kaba eng?

	Ee	Aowa	Ga ke tsebe
39.Le patella ditefelo?	1	2	3
40. Le ema le batho ba ko mafaseng a kantle ga naga go swana le Zimbabwe, Malawi, Nigeria, Mozambique and etc.?	1	2	3
41. Batho ba ka ntle ga naga bona ba patela ditefelo tsa go bonwa mo kliniking?	1	2	3
42. Batho ba ka ntle ga naga bona ba patela ditefelo tsa Tax?	1	2	3

43. batho ba ka ntle ga naga ke ba bantshi kudu mo ba dirago gore go emiwe di line tse telele?	1	2	3
44. o nagana gore ekaba 50 ya dipercente ya batho ba go tswa ka ntle ga naga ya rena ba ba thuswago ka tirelong tsa go belegisa ba dirang gore go emiwe nako e telele?	1	2	3
45.ba swanetse go patela ditirelo batho ba ba ka ntle ga naga?	1	2	3

Karolo VII:O nagana gore nako ya go ema ga molwetsi e ka fokotswa bjang?

SA= Go dumela kudu; A= Go dumela; D=Go se dumele ; SD=Go se dumele kudu.

	SA	A	D	SD
46. Go oketsa bashomi mo sehlopheng	1	2	3	4
47 Thusa gore bashomi ba be gona lefelong la bona.	1	2	3	4
48. Go tlisa mokwa wa go fa letsatsi la go bowa	1	2	3	4
49. Go oketsa lefelo la thuso	1	2	3	4
50.Ga ke tsebe	1	2	3	4

Ke mo mafelelong a letlakala la dipotsiso

Ke a Leboga

Appendix 2: Consent Form

DEPARTMENT OF NURSING SCIENCE ENGLISH CONSENT FORM

Statement concerning participation in a Clinical Research Project.

Name of Project / Study: **Factors contributing to long waiting time at Blouberg Health Centre, Capricorn district Limpopo Province**

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

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

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

I know that this Study / Project have been approved by the Turfloop Research Ethics Committee (TREC). I am fully aware that the results of this Study / Project will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

The Study/Project envisaged may hold some risk for me that cannot be foreseen at this stage.

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

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

If any medical problem is identified at any stage during the research, or when I am vetted for participation, such condition will be discussed with me in confidence by a qualified person and/or I will be referred to my doctor.

I indemnify the University of Limpopo and all persons involved with the above project from any liability that may arise from my participation in the above project or that may be related to it, for whatever reasons, including negligence on the part of the mentioned persons.

I hereby give consent to participate in this Study/Project.

Signature of researched person.....

Signature of researcher.....

Signed at.....this.....day of.....2018

Contact No:

Appendix 3: Ethical Clearance Certificate



University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: anastasia.ngobe@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE
ETHICS CLEARANCE CERTIFICATE

MEETING: 06 February 2019

PROJECT NUMBER: TREC/20/2019: PG

PROJECT:

Title: Factors Contributing to Long Waiting Time at Blouberg Health Centre, Capricorn District, Limpopo Province.

Researcher: TA Mani
Supervisor: Prof MK Thopola
Co-Supervisor/s: Mrs MG Mathebula
School : Health Care Science
Degree: Master of Nursing


PROF P MASOKO
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) This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.
- ii) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.
- iii) PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

Finding solutions for Africa

Appendix 4: Department of Health Permission Letter



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Ref: LP 201903_003
Enquiries: Stander SS
Tel: 015 293 6650
Email: research.limpopo@gmail.com

Mani TA

University of Limpopo
Private Bag X 1106
Sovenga
0727

Greetings,

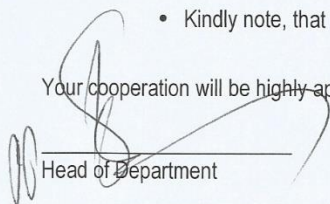
RE: FACTORS CONTRIBUTING TO LONG WAITING TIME AT BLOUBERG HEALTH CENTER , CAPRICON DISTRICT , LIMPOPO PROVINCE

Permission to conduct the above mentioned study is hereby granted.

1. 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, or incur any cost on the Department.
- 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 1 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

02/04/2019
Date

Private Bag X9302 Polokwane
Fidel Castro Ruz House. 18 College Street. Polokwane 0700. Tel: 015 293 6000/12. Fax: 015 293 6211.

The heartland of Southern Africa – Development is about people!

Appendix 5: Blouberg Health Center Permission Letter



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
CAPRICORN DISTRICT
BLOUBERG HEALTH CENTRE

Enq. MAPONYA M.M
Contact No. 015 501 0505
Date: 07.05.2019

The supervisor
University of Limpopo
Turfloop campus
Private bag x 1106
Sovenga
0727

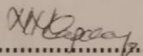
Sir/madam

APPROVAL TO CONDUCT THE RESEARCH STUDY MANI T.A PERSAL NO: 81763000

The above mentioned officer has been granted an opportunity to conduct a research study at Blouberg health Centre. The title of the study is "factors contributing to long waiting time at Blouberg health Centre.

Hoping that the research will impact positively to the facility

Thanks


.....
Assistant manager

Appendix 6: Statistician Letter



University of Limpopo
Research Administration and Development Department
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3702, Fax: (015) 268 2306, Email: Mmbengeni.netshidzivhani@ul.ac.za

07 November 2019

TO : WHOM IT MAY CONCERN

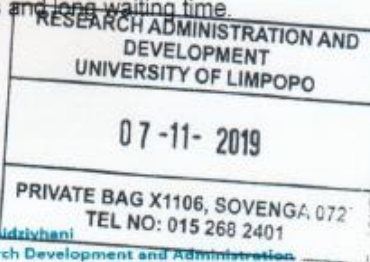
FROM : MR MV NETSHIDZIVHANI
RESEARCH STATISTICIAN: RESEARCH ADMINISTRATION AND DEVELOPMENT

SUBJECT: Letter of Confirmation

Dear Sir/ Madam

I hereby confirm that I have read the protocol of Ms Tshiangwa Adolphia Mani (201001770), who is trying to find Factors contributing to long waiting time at Blouberg Health Centre Capricorn District, Limpopo Province. Based on the nature of his research design and the objectives, she was advised to use Cronbach alpha for reliability testing, descriptive analysis, T test, Chi-squared, ANOVA test and post hoc test, Tukey HSD was conducted to detect the difference between patients status and long waiting time.

Regards



Mr Victor Mbeneni Netshidzivhani
Chartered Statistician: Research Development and Administration
Tel : +27 15 268 3702
Fax : +27 86 696 0812\ 015 268 2306
Mobile : +27 72 246 4551
E-mail : mmbengeni.netshidzivhani@ul.ac.za
mnetshid23@gmail.com

Appendix 7: Language Editor Letter



University of Limpopo
T.W Molotja (PhD)
School of Education
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 2391/0736266621 Email:wilfred.molotja@ul.ac.za

TO WHOM IT MAY CONCERN

This letter serves to confirm that I, **Dr T.W Molotja** of the Department of Language Education (English Language Teaching), School of Education, University of Limpopo, have proofread and edited the research report for **MANI TA**, entitled: **FACTORS CONTRIBUTING TO LONG WAITING TIME AT BLOUBERG HEALTH CENTRE, CAPRICORN DISTRICT, LIMPOPO PROVINCE**

The report is edited focusing on the following:

- Coherent writing.
- Eliminating spelling errors.
- Fluency in reading.
- Academic writing.

I therefore recommend for its submission.

Yours Sincerely

Date: 06 August 2020

A handwritten signature in black ink, appearing to read 'T.W. Molotja', is written over a large, faint background image of a tree.