DETERMINANTS OF OVERCROWDING IN THE REGIONAL HOSPITAL OF VHEMBE DISTRICT, LIMPOPO PROVINCE

by

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DECLARATION

I, Raulisa Mulalo (student number: 11521426), hereby declare that this dissertation titled **'Determinants of overcrowding in the regional hospital of Vhembe District, Limpopo Province'** has not been submitted before for any degree or examination at this or any other university; and that is my own work in design and execution. All materials and sources used have been duly acknowledged by means of complete references.

Signature: MRaulisa Date: 2022/2/25

DEDICATION

This dissertation is dedicated to the following people:

To my late father Mphidi Matodzi, aunty Mutavhatsindi Marubini and her sisters, aunty Mutshinye Tshinakaho and her two brothers, my two sisters Muedi Sarina and Mulaudzi Tshimangadzo, who did not witness my achievement.

My mother, Ndou Nyadzanga, brothers and sisters who supported me throughout the process.

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- The participants for their willingness to participate in this study.
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LIST OF ACRONYMS AND ABBREVIATIONS

CT SCAN	:	Computerised tomography
OPD	:	Outpatients Department
PHC	:	Primary Health Care
SA	:	South Africa

ABSTRACT

Introduction: The overcrowding of patients in regional hospitals is a challenge in developing countries, primarily in the tropics and subtropics, including Africa, India, Indonesia and South Africa.

Purpose: The study aims to explore and describe the determinants of patient overcrowding in the Vhembe District regional hospital.

Methodology: The cause of overcrowding of patients at a regional hospital was investigated using a qualitative, exploratory, descriptive and contextual design. The population was registered and enrolled nurses. The participants were selected using non-probability convenience sampling. A pre-test study was carried out to test the applicability of the research question and the time required to complete the interview. The participants who participated in the pre-test were excluded from the sample during data analysis. Data were collected through individual interviews until data saturation was reached and analysed using Tesch's open coding. Trustworthiness was ensured by credibility, transformability, dependability and conformability. For this study, the following ethical considerations were taken into account: confidentiality, anonymity, avoiding harm from others and informed consent.

Results: The findings revealed that shortage of resources, institutional factors, patient's behavioural factors and disease outbreaks contribute to overcrowding. The impact of patient overcrowding includes patient-and staff-related effects.

Recommendations: The study recommends providing adequate equipment and employing qualified nurses, giving priority to those trained by them who are unemployed to address the shortage of resources. Developing policies on patients' referral system and educating the community members on Primary Health Care (PHC) system policies and avoiding self-referral to the hospital.

Keywords: Determinants, overcrowding, regional hospital

TABLE OF CONTENTS

List of Figures

List of Tables

Chapter 1

Introduction and Background

1.1 Introduction

There is overcrowding in regional hospitals in developing countries, mostly in the tropics and subtropics, including Africa, India, Indonesia and South Africa (SA). According to Babatabar et al. (2020:382), there are insufficient beds, and large numbers of patients in state hospital facilities and specialists prefer working in private sectors that is not affordable for most patients. Consequently, there is a shortage of specialists in the government institutions, causing delays in patients' treatment and recovery, as well as the overflow of patients (Babatabar et al., 2020:382).

A study by Baker and Berman (2017:33) demonstrated that these negatively impact quality of patient's care and increase medical errors and patient mortality worldwide. This study found that all licensed beds are occupied when the unit is overcrowded and surplus patients are placed in beds in hallways where they receive care. Nurses and doctors find it challenging to provide care to these patients due to the lack of privacy in taking their full history and carrying out physical examinations. Overcrowding of patients leads to nurses and doctors fatigue, further contributing to errors such as incorrect diagnosis and patients receiving the wrong medication (Baker & Berman, 2017:33).

Bahadori, Teymourzadeh and Raabadi (2017:21) indicate overcrowding and the inadequate referral system as the primary point of contact contribute to the increased number of patients in the hospitals due to the lack of physicians in the clinics. Even though patients transfer from PHC to the hospital, they are often discharged without seeing a specialist due to unavailability of dates to see specialists as there is a shortage of specialists in the hospital. Shortages of medical equipment in the hospital and the absence of a proper referral system have led to the overcrowding of patients in hospitals (Bahadori et al., 2017:21).

Gaieski and Pines (2017:89) demonstrated that overcrowding in hospitals could delay the ward routine or patient care, increasing the number of deaths among patients. Also, this could, in turn, result in infections or severe sepsis due to the delayed administration of antibiotics and intravenous infusions (Gaieski & Pines, 2017:89).

Internationally, overcrowding is becoming a significant concern in patient care and medical education. For instance, it prevents effective instruction as the medical professionals do not have enough time to teach future doctors and nurses (Jonathan et al., 2018:55).

According to Hanadi (2018:90), the number of readmitted patients has increased hospital-acquired infections. The most effective method of reducing this overflow of patients is through teamwork and communication between stakeholders, for example, doctors, nurses, family members and staff for support.

In the patient system, each family must be assessed for discharge planning tolerance and arrange discharge planning support, including the multidisciplinary team, to decrease readmission numbers. This multidisciplinary team must include nurses, pharmacists, physicians and social workers (Hanadi, 2018:90).

1.2 Background

Overcrowding in hospitals is a public health problem worldwide. In the United States of America, a survey found that 94 percent of the public hospitals and 91 percent of the private hospitals are overcrowded. This overcapacity in patient numbers leads to an increased rate of mortality of five percent (Arrug & Yuwares, 2015:5). Some of the factors associated with overcrowding were inappropriate visiting and the severity of the patient's conditions. Repeated blood testing and delays in receiving blood tests results were other contributory factors to the overcrowding of patients (Arrug & Yuwares, 2015:3).

Many hospitals in the Netherlands confront similar capacity problems resulting in the cancellation of operations, staff being overloaded with extra patients and turning away emergency patients who are then transported to other hospitals (Zonderland, Booncherie & Stanford, 2017:22). These authors further stated that introducing the short-stay units in the Netherlands improves emergency department flow and decreases pressure. Patients remain in the short stay unit until a bed is available, providing an additional buffer capacity for those patients who require hospitalisation (Zonderland et al., 2017:22).

Research has established that patients admitted to hospitals for long periods sometimes develop staphylococcus bacteria, nosocomial infection and change

condition (Kumar & Agarwal, 2021:479). Bhana and Thompson (2018:138) state that in their study, most hospitalised patients in tertiary care centres developed resistance to drugs, and prolonged hospitalisation impacted the excess numbers of patients (Bhana & Thompson,2018:135). Arrug & Yuwares (2015:4) found that age-related factors contribute to extended stays since elderly patients take time to heal and often develop complications such as pneumonia due to their low immune systems (Arrug & Yuwares, 2015:4).

In Australia, Anthony and Anurag (2016:7) established that overcrowding was related to the reduced numbers of nurses and doctors allocated to the hospital. The lack of space and delays in delivery of treatment were reported as contributing factors to overcrowded hospitals in the country. These factors cause frustration for patients and staffs as patients do not receive treatment causing poor patient care outcomes and further delays in discharges (Anthony & Anurag, 2016:7).

In China, patients choose higher-level hospitals leaving lower facilities with a low utilisation rate. The study by Liu et al. (2018:8) found that factors influencing the choice of health system access levels in China included available drugs and shortages of equipment as these move patients from lower-level hospital care to higher levels. At present, Wuhan is attempting to build new hospitals to accommodate the influx of patients waiting to receive medical care related to the coronavirus (Liu & Van de Klundert 2018:8).

Bahadori et al. (2017:22) carried out research in Saudi and found that patient overcrowding is frequently caused by patients who are not sick but visit the hospital environment for reassurance as they feel cared for in a quiet medical environment. This causes further overloading as staff fatigue and shortages lead to poor assessment resulting in some patients being admitted. Some patients visit the hospital with minor ailments because it is close to their homes. Another cause of overcrowding is the lack of sufficient space as the beds available are frequently fewer than the number of patients referred to the ward (Bahadori et al., 2017:22).

In the study by Nkosi et al. (2019:19) in SA, poor medicine supply was associated with the overcrowding of patients in hospitals. Excess numbers of patients remained unchanged as approximately 57 percent of the hospitals in Johannesburg were overloaded according to international guidelines. The insufficient space in the

hospitals increases the risk of nosocomial infection among patients and delayed discharges causing further overcrowding (Nkosi et al., 2019:19).

A study by Kgole et al. (2016:518) in the Limpopo Province in SA revealed that overcrowding has increased because of various factors, including the lack of knowledge of care for the patient at home by family members. After being discharged, most patients need follow-up care at home to continue medication compliance. Also, overcrowding negatively impacts the health care system, which has inadequate medical supplies, fails to implement policies and prevent infection. Nurses in SA are experiencing tremendous amounts of stress as they struggle with an increased workload due to the number of patients. The ability to cope in this environment is challenging for nurses because there is little support from their employers, and counselling for work-related stress is seldom available (Kgole et al., 2016:518).

1.3 Problem statement

Brink and Cristiva (2016:45) describe the problem statement referring to the subject to be studied. While working as a night supervisor at the Vhembe District regional hospital in the Limpopo Province in SA, the researcher observed the overcrowding of patients in the hospital. Patients were treated while lying on the floor or stretchers while others were transferred to wards unrelated to their primary diagnosis at admission, putting them at risk of cross-infection. The researcher aimed to investigate the causes of the overcrowding and explore its impact at the Vhembe District regional hospital through discussions with the nursing staff. The lowest number of patients in hospital per day from nursing administration of year 2020 is as follows: January = 460 patients, February 500, March =509, April=600, May=570, June=600 in a 400 bedded hospital.

1.4 Rationale of the study

Studies on the overcrowding of patients have been conducted internationally, but the literature on its determinants remains limited. In reviewing the literature related to the determinants of overcrowding of patients in Limpopo Province, the researcher found little available. In SA, the overcrowding of patients remains high in rural areas and townships where most poor people live. Like many other countries, SA has failed to build and create enough space contributing to overcrowding (Makhado 2018:20).

There is no known study on the determinants and impact of overcrowding conducted in the regional hospital of the Vhembe District in the Limpopo Province.

1.5 Significance of the study

The findings of the study have the potential to increase and improve the body of scientific knowledge, health practices and policies to benefit nurses, patients and policymakers. From this study, nurses can acquire additional knowledge concerning the causes of overcrowding and its impact on nursing practice, possibly resulting in developing quality patient care and early recovery of patients and reducing the risk of nosocomial infection. Hospitals may reduce costs incurred related to staff errors. Improved knowledge on determinants of overcrowding of patients may assist policymakers in reviewing policies, protocols and guidelines regarding the prevention of overcrowding in hospitals.

1.6 Research purpose and objective

1.6.1 Research purpose

The study explores the determinants related to patient overcrowding in a regional hospital in Vhembe District, Limpopo Province.

1.6.2 Research objectives

The objectives of this study are:

- To explore and describe the determinants of patients' overcrowding in the regional hospital of Vhembe District, Limpopo Province.
- To explore the impact of patients' overcrowding in the regional hospital of Vhembe District, Limpopo Province.

1.7 Definition of concepts

Overcrowding refers to a place that contains too many people (Beth & Penfold, 2015:34). In this study, overcrowding relates to an excess number of patients and insufficient space or beds for new patients.

Determinant: A factor that decisively affects the nature or outcome of something (Houghton, 2016:67). Determinant in this study refers to the causes of overcrowding of patients and outcomes at the regional hospital in the Vhembe District.

1. 8 Research methodology

Research methodology involves selecting the research approach and design used by the researcher in the study. It includes the population, sampling, data collection and data analysis. Chapter 3 explains more details about the research methodology.

1.8.1 Research design

The overall plan of how the study has been conducted is referred to as the research design. This study used a descriptive, explorative and contextual design. A descriptive design provides a comprehensive summary of events where more information is required in a particular field of study (Brink & Cristiva, 2016:128). It aims to explore and describe the phenomena in real-life situations and identify problem with current practice. It presents the specific details of a situation, social setting or relationship and focuses on the how and why (Neuman, 2017:126). The researcher went beyond description; each participant had had the opportunity to explain the determinants of patient overcrowding. The context of this study is a natural setting because individuals take their meaning from their context. It is appropriate as it provides the opportunity to identify the determinants of overcrowding of patients in a regional hospital where patients are admitted, and nurses are at work

1.8.2 Research setting

The study setting is a specific place or places where the data will be collected; a real-life situation or environment (Brink & Cristiva, 2016:67). This study was conducted in the selected regional hospital in the Vhembe District. The district is one of the five regions situated on the north-eastern side of the Limpopo Province. There are seven hospitals; six are district hospitals and one is a regional hospital in the Thulamela municipality (Figure 1). The hospital was chosen because it is a referral hospital to which other hospitals in the district transfer their patients. Chapter 3 describes the research setting of this study in detail.

1.8.3 Population and sampling

The population for this study was composed of enrolled and registered nurses aged 21-65 years who have been working in the regional hospital for at least six months. According to Burns and Grove (2018: 4), sampling is a process of taking a portion of

a population as representative of the total population. In the current study, the wards were purposively selected while selection of participants was done using the non-probability purposive sampling method. Chapter 3 describes the population and sampling used for this study.

1.8.4 Inclusion and exclusion criteria

Inclusion criteria refer to those characteristics that are necessary for people to be included in the sampling process (Polit & Beck 2016:339).

1.8.4.1 The inclusion criteria for this study were:

- Both male and female enrolled and registered nurses 21-65 years of age.
- Enrolled and registered nurses who have been working in the regional hospital for six months and more.
- Participants who agreed to be part of the study.

1.8.4.2 Exclusive criteria

According to Brink and Cristiva (2016:49), exclusive criteria are criteria which are being used to identify participants who will not be included in the study. The exclusion criteria for this study were:

- Nurses less than 21 years
- Nurses with less than six months work experience

1.8.5 Data collection tool

According to Polit and Beck (2016:420), the data collection instrument refers to the means used to collect data. The interview guide was used to collect data in the current study. The interview guide supports researchers in considering the aim of the interview and the possible difficulties they may encounter in terms of the wording of questions and sequence. It also helps to generate questions with appropriate content and

structure and the themes to be covered. The measurement instrument used in this study will be explained in detail in Chapter 3.

1.8.6 Pre-test study

According to Brink and Cristiva (2016:48), a pre-test is about verifying the ability of the research instrument to collect data and ensuring that there are clear instructions for the instrument. In the current study, the pre-test intended to evaluate whether the interview guide questions were clear for the participants to modify vague and ambiguous questions. The other reason for the pre-test was to assess if the time allocated for the interview was sufficient.

1.9 Trustworthiness

Trustworthiness is a method of establishing validity and reliability in qualitative research and achieved when it accurately represents the participant's experience (Lincoln &Guba, 1985:4). It encompasses four criteria: credibility, dependability, confirmability and transferability, which were ensured in this study and described in Chapter 3.

1.10 Data collection

The researcher used semi-structured interviews to collect the data. De Vos et al. (2018:352) define semi-structured interviews as a method of collecting data from the participants through direct interchange with individuals who possess the knowledge sought by the researcher. The interview guide had two questions. The first question was: ‘What do you think are the determinants of patient overcrowding?' The second question was: ‘What are the impacts of overcrowding of patients in your hospital?'

1.11 Data analysis

Data analysis refers to the process of reducing the volume of raw information into data, removing trivia and constructing a framework for communicating what the data reveals when analysed (De Vos et al., 2018:397). In the current study, data analysis was done immediately after data collection, whereby data was transcribed verbatim. Tesch’s open coding method was used. The data analysis process is described in detail in Chapter 3.

1.12 Ethical considerations

Ethical consideration refers to the proper care required when doing research. The researcher must respect the rights of individuals and communities taking part in a study. All human beings' rights need to be respected at all times, and any research should avoid doing or exposing harm to their participants (Brink & Cristiva, 2016:32). In the current study, the ethical principles were adhered to, and Chapter 3 discusses these principles.

1.13 Limitations of the study

The study was limited to registered and enrolled nurses working in the regional hospital. The sample was purposively selected based on the researcher's judgment, and its findings cannot be attributed to the whole population.

1.14 Dissemination of results

Communicating the research findings is the final step of the research process. The findings are communicated through presentations, publications to audiences of nurses, health care professionals, policymakers and health care consumers (Grove, Burns & Gray, 2013:615). A copy of the published dissertation will be submitted to the Provincial Department of Health in Limpopo. The dissertation will be summarised into an article and sent to peer-reviewed journals for possible publication. Also, the researcher will present the findings at relevant conferences.

1.15 Chapter outline

Chapter 1: Overview of the study.

Chapter 2: Literature review.

Chapter 3: Research methodology.

Chapter 4: Presentation of results.

Chapter 5: Discussion, limitations and recommendations.

Chapter 2

Literature Review

2.1 Introduction

The previous chapter presented the background, problem statement and objectives of the study. This chapter reviews the literature on the overcrowding of patients in different wards and the factors contributing to overcrowding, impacts and strategies to reduce overcrowding.

The literature review is an organised presentation of published material on a topic by scholars, it helps the researcher identify gaps or inconsistencies in the body of research (Brink, Van der Walt & Van Rensburg, 2016:70). According to De Vos et al. (2018:45, 128), literature review is used in finding, reading, understanding and forming conclusion about published research data. The researcher conducted the literature review using Google scholar, Science Direct and Sabinet. Articles included had to meet the following criteria: should not be older than five years and focused on information related to overcrowding in health facilities. The literature review guided the presentation of the information as themes discussed below are those topics dominant in the reviewed literature.

2.2 Overview of overcrowding

Patient overcrowding is a problem worldwide and negatively affects patient care (Velt et al., 2018:448). A hospital is a vital component of service delivery related to patient care and should be accessible 24hours a day for all requiring care. Overcrowding does not only threaten the public but also patient safety. The situation in hospitals cannot be predicted. Working conditions become more difficult as the staff members are expected to work extremely hard to meet the expectation of the patients. One result of overcrowding in the hospital, among others, is a chaotic environment where medical professionals must attempt to carry out their work.

Overcrowding occurs when there are more patients requiring care than available staff and beds; patients are cared for in hallways and forced to wait for treatment**.** Overcrowding of patients in hospitals is a problem internationally for policymakers, administrators and researchers, creating a public health problem. A survey in the

United States found that 94 percent of hospitals and 91 percent of private hospitals are overcrowded (Abubakar, Musa & Labaran, 2018:18).

2.3 Determinants of patient overcrowding

Overcrowding is a complex issue, and no single factor provides an explanation. Overcrowding differs in urban and rural setting and public and private hospitals (Alhabdan, Alhusain & Masuadi, 2019:15). The determinants include institution-and patient-related factors.

2.3.1 Institution-related factors

Institution-related factors include shortages of staff, lack of infrastructure, delayed testing and results, lack of equipment, free and low-cost services, providing various clinics in one day, poor referral system and prolonged hospitalisation.

2.3.1.1 Shortage of staff

In the St Francis Community Hospital in Nairobi, factors contributing to the overcrowding of patients were nursing staff shortages and poor coordination of workers (Njogu, 2018:45). Staff shortages result in overcrowding of patients, as patients wait many hours for treatment. Many patients prefer to go to the hospital at night, however, at night fewer staff are available to manage the hospital and other departments are closed, for example, physiotherapy and psychologist departments. Patients requiring the attention of the physiotherapist or psychologist have to be admitted and seen the following day (Salway et al., 2017:213).

Human resources shortages also contribute to patient overcrowding, including clinical and non-clinical human resources. The performance of staff depends on the knowledge and skills, and the motivation of individuals. An employer must provide suitable working conditions and resources to ensure that the working performance of employees meets the desired standard (Matakanye, Ramathuba & Augustine, 2019: 4997).

2.3.1.2 Infrastructure

In Limpopo Province of SA, overcrowding of patients remains high in rural areas and townships where the majority of poor people live. South Africa, like other countries, has failed to build hospitals and create enough space for the patients due to rapid

population growth and increased number of patients, leading to shortages of staff and equipment and overcrowding in hospitals (Makhado, 2018:20).

The lack of screening facilities by physicians in health care settings has contributed to overcrowding. Even when there are many physicians in a hospital setting, a shortage of cubicles for screening leads to overcrowding, especially in the emergency department (Kumar, Agarwal & Kumar,2021:480).

A disorganised working environment and old infrastructure cannot accommodate patients and causes overcrowding. Deteriorating infrastructure also puts nurses at risk of being infected. For example, when there are patients with infectious diseases and windows are not well designed, leading to poor ventilation and putting nurses at risk of infection such as tuberculosis (Kumar et al., 2021:482).

2.3.1.3 Delayed testing and results

According to Habib and Khan (2017:80), overcrowding is frequently due to delays in laboratory results as patients must wait for these before being discharged, and some results take three days. The most common complaints of patients presenting in the hospital were diarrhoea and vomiting, and physicians faced delays in receiving serum electrolyte reports to decide on discharge or to admit the patient after intravenous rehydration. Similarly, neonates waited on serum bilirubin reports for decisions on allowing them home for sunlight exposure or phototherapy treatment. The authors further indicated that the patients with fever and convulsions had to wait for metabolic profit results (Habib & Khan, 2017:80).

A study conducted in a Dutch tertiary hospital in the Netherlands found that overcrowding of patients was caused by delays in conducting diagnostics tests caused the overcrowding of patients in the emergency department. Furthermore, there were delays in releasing the results, as they took more than 48 hours to be available. Patients who were ready for discharge but awaiting blood test controls not done early in the morning before wards round caused further delays, increasing their time spent in the hospital and leading to overcrowding (Van Der Veen, Remetjier & De Groot, 2018:7).

Cakmak et al. (2021:67) stated that radiology contributes to overcrowding as X-ray machines sometimes do not work and cannot print results. The doctors must find time

between patients to go to radiology to read the results, and some blood tests are not carried out in the same hospital causing further delays and increasing waiting times resulting in overcrowding. As the radiology, laboratory and other department services both outpatients and inpatients, some services in radiology, for example, sonar and Computerised Tomography (CT) scans are by appointment only causing more delay in diagnoses and management resulting in overcrowding.

However, according to Yarmohammadian et al. (2017:22), delayed ordering and transportation of blood tests causes further delays in reporting and reviewing of results, increases the time for laboratory analysis and hospitalisation. In other hospitals, nurses request X-rays than waiting for the doctor to avoid waiting times and reduce hospitalisation and overcrowding. However, Chen and Liang (2018:63) found unnecessary multiple diagnostics examinations; for example, tomography for a patient with abdominal discomfort increases waiting time by a day for the results to be released and interpreted by a physician, also adding to overcrowding. Some tests are to satisfy the families and patients to avoid being charged with negligence; these wastes medical resources and delays patients' discharges and contributes to overcrowding. Most of the patients are critically ill and report to the hospital while their conditions are deteriorating, and they take time to heal and delay discharges (Matakanye, Ramathuba & Augustine, 2019:4973).

2.3.1.4 Lack of equipment

The other factor which leads to overcrowding is the availability of advanced equipment, which is not available in other hospitals. When the patient realises that there is modern advanced equipment, they choose to go to such a hospital to get their needed servicers (Bahadori et al., 2017:23).

Shortage of medical equipment in other hospitals is a barrier to deliver quality health services and contribute to overcrowding. The world health organisation estimates that 50–80 per cent of medical equipment in developing countries is not functioning, and those countries lack technology (Moyimane, Matlala & Kekana, 2017:2).

Shortage of equipment and resources impacts overcrowding as some patients wait for a specialist to perform a specific surgery, but due to a shortage of specialists and

equipment, they have to wait for days or weeks in the wards (Matakanye et al., 2019:4997).

2.3.1.5 Free and low-cost services

When a patient sees that they can be seen by many physicians at a low fee, they prefer to go to the hospital. The free services for old age and children are also contributing to overcrowding. In Kenya, once they introduced free delivery in 2013, the number of antenatal clinics and deliveries increased by 26 per cent. This increased the number of hospitalisations from 44 per cent in 2008 to 61 per cent in 2014 (Njuguna, Kamau & Muruka, 2017:3). While in private hospitals, deliveries and antenatal care decreased as they do not provide free maternal care (Njuguna, Kamau & Muruka, 2017:3).

2.3.1.6 Providing various clinics in one day

In most hospitals, patients can receive even more than six to seven medical visits and services in one day. When patients realise that the facilities are for more than one appointment in one day, they ask for appointments for other services such as cardiovascular, ear, nose and throat (Bahadori et al., 2017:21).

South Africa uses the integrated system to provide services to clients; that is, different health care services, mother and child, family planning, antenatal care, and mental health are available on the same day. This contributes to overcrowding as, for example, mental health patients need counselling and other patients also need to use the same space and staff, so they have to wait for a long time (Hlongwa & Sibiya, 2019:1847).

2.3.1.7 Poor referral system

According to Ike et al. (2017:5), overcrowding was due to the large volumes of patients who did not go through the referral system and inaccurate assessments, and these patients were admitted. Some factors responsible for overcrowding in hospitals include delay in patient transfer; inter professional conflicts that delay inpatients discharge and inexperienced doctors and nurses on duty.

2.3.1.8 Prolonged hospitalisation

In Ramathibodi hospital, the number of rounds and repeated tests was associated with prolonging patient stays, contributing to overcrowding and increased admissions and few discharges leading to more hospital stays and overcrowding. Poor interaction between nurses and physicians and multidisciplinary team rounds reduce early discharges. When patients and their relatives do not understand the discharge care plan and prognosis, this adds to more extended hospitalisation. Insufficient planning for operating theatres is associated with patients remaining in the wards and overcrowding further limiting access to surgical care due to resource constraints. For elective surgery, overcrowding occurs when patients are transported to operating rooms when no theatre is available (Nader, Jame & Tofighi, 2020:1039).

2.3.2 Patient-related factors

Patient-related factors include patient consulting for minor ailments, age, season and patient disappearance.

2.3.2.1 Patients consulting for minor ailments

According to Wang et al. (2018:665), patient overcrowding is related to those receiving ongoing care in hospitals for minor illnesses and an increase in those who need ongoing care in daily living.

The cause of patient overcrowding includes input/output factors, poor emergency department triage systems, lack of facilities or even skilled human resources. Overcrowding of patients affects the smooth running of patient care services that can lead to serious public health issues (Abubakar et al., 2018:22).

The community feel that they are not well managed in the PHC setting and they have the right to select specific tertiary, provincial, or even regional hospitals, and staff cannot refuse their requests. People with minor illnesses are treated in these hospitals resulting in unnecessary diagnostic investigations to satisfy the patients and relatives and avoid being charged with negligence. Sometimes clients believe that investigation and intravenous fluid can treat feeling unwell; patients themselves demand such care (Chen & Liang, 2018:62). A study by Breanna (2018:50) demonstrated that family members cause overcrowding as they usually ask the doctors more questions who

spend time attending to relatives, and patients have to wait for a long time (Breanna, 2018:50).

According to Murrithi and Kariuki (2020:36), burnout among nurses and doctors negatively impacts patient care, also causing overcrowding. Other factors were long hours, frequent overtime, and failure to bring rewards resulting in fatigue and frustration, leading to reduced focus on patient care and reduced quality patient care and delaying discharge (Murrithi & Kariuki, 2020:36).

2.3.2.2 Age

Overcrowding may be associated with age-related factors such as old age and infants, commodities and disease severity (Bahadori et al., 2017:21). Patients who had visited more often were adults aged 60–65 years and those with comorbidities. In the emergency department, adults are not prioritised. Younger people are seen first, and young to middle-aged people receive their surgeries ahead of the older patients. Adults have to wait for many days for their operations (Cakmak et al., 2021:65).

2.3.2.3 Season

According to Amodio et al. (2018:217), the season also contributes to overcrowding; during winter, people suffer from influenza, and many go to the hospital, and some are admitted. During December, hospitals are overcrowded as a result of due to admissions related to trauma and accidents.

2.3.2.4 Patient departure

Patients leaving the hospital before being seen by physicians are another contributory factor perceived to contribute to overcrowding. Young adults 29 years or less are more likely to leave the hospital without being seen as they do not want to stay longer and then return due to complications. The most frequent reason for leaving is impatience causing more problems (Abubakar, Musa & Labaran,2018:20).

2.4 Impact and consequences of patients overcrowding

The impact and consequences of overcrowding includes patient- and staff-related factors.

2.4.1 Patient-related impacts

According to Van Der Veen, Remejier and De Groot (2018:2), overcrowding is a potential threat to patient safety. Overcrowding is associated with poor satisfaction with patient's outcomes and health workers.

Overcrowding poses a threat to patients' safety within the facility. Since nurses must mix patients with different conditions in one ward for reasons beyond their control, putting patients at risk of acquiring infections. Medical errors occur in a chaotic working environment. Patients wait for care for longer than average, and some for five days in the emergency department before being transferred to their specific wards (Breanna, 2018:20).

Overcrowding at the Princess Marina Hospital in Gaborone caused delays in doctors seeing patient's being in the emergency department. Patients have to wait, and when doctors see them, they have already developed complications requiring them to be hospitalised for a longer period. This causes conflict among staff as multiple investigations have caused the delay (Siamisang, Thlakanelo & Mhaladi, 2020:65).

Some patients need tertiary hospital, but due to a shortage of beds, they are nursed at a provincial level (Mothiba, Skaal & Berggren, 2019:424). Overcrowding negatively impacts the community due to the risk of reduced privacy and dignity for the patients and delaying treatment, and patients often express their dissatisfaction (Chen & Liang, 2018:62).

Overcrowding has a true cost and real consequences in both patient care and the cost of medicine. Overcrowding of patients causes delays in care, including critically ill patients worldwide and increases the mortality rate (McKennana et al., 2019:189).

According to Fernandes et al. (2020:333), overcrowding in Vhembe was related to the time needed by nurses and doctors to spend with patients to give quality care. The authors further stated that patients are discharged before fully recovering due to poor assessment related to overcrowding.

McKennana et al. (2019:213) and Lewis, Harding and Taylor (2018:3348) found in their studies that patients wait for an hour or more to see a physician. Complications such as heart failure and stroke occur as a result of late diagnosis related to the long waiting time; these lead to permanent consequences like disability.

Overcrowding is damaging to patient care as some of the patients have to return to the emergency department without being seen because the hospital is full. Ambulances are diverted to other hospitals where there is a space causing delay in patient care and management (Jeanmonod & Jeanmonod, 2018:62).

Delay in care of patients related to overcrowding can lead to increased mortality as patients with complications await care in the emergency department (McKennana et al., 2019: 213). Lewis, Harding and Taylor (2018:3349) further stated that once the patients are tired of waiting, they go home before being seen, and when they come back, they are already suffering from complications and do not survive(Lewis, Harding & Taylor, 2018:3337).

2.4.2 Staff-related effects

Caring is the core of nursing and overcrowding can compromise this value causing distress to staff that know the appropriate action to be taken but cannot fulfil it (Ike et al., 2017:85).

Overcrowding of patients negatively impacts health professionals in managing patients efficiently as they experience exhaustion and burnout. Nurses cannot control their work in an overcrowded ward as these circumstances affect their activities (Chen & Liang, 2018: 62).

When there is overcrowding, health professionals feel unsatisfied with their performance becoming anxious about their patients safety. They also feel that they are not working as caring professionals; for example, nurses have to insert a drip on a patient on a stretcher, floor or wheelchair because there are no beds. Nurses and doctors are unwilling to work in an environment where they cannot provide professional care. They feel that they are not in control over their work as the problematic issue of overcrowding is affecting the standard of care.The unique environmental influence of acute care setting on patients and physicians well-being.As staffs feel helpless, they get frustrated and absent from work causing more shortages and increasing overcrowding (Amodio et al., 2018:220).

Overcrowding causes burnout and stress among staff and is a major cause of patient dissatisfaction. Siamisang et al. (2020:59) state that overcrowding of patients has led to poor quality of care as staffs are exhausted by the overload of work. Large numbers

of patients are admitted, and nurses cannot manage because of the lack of staff, leading to disciplinary hearings.

Many errors occur as staffs have to attend to many patients. Medication errors occur mostly during overcrowding as nurses become tired. Delays inpatient treatments occur as a result of overcrowding as one nurse will be expected to give medications to more than 30patients (McKennana et al., 2019:213).

Overcrowding of patients creates considerable hardship and problems that affect patients' wellbeing, the time needed for diagnosis and on the quality of the assistance (Pasaresi et al.,2020:579).Furthermore, Gaeta et al.(2019:241)stated that overcrowding leads to staff burnout, safety risk of both patients and staff and adverse effects and death.

Matakanye, Ramathuba and Augustine (2019:4997) state that in Limpopo Province, due to overcrowding, patients delay discharges and stay longer with a condition not related to their primary diagnosis; this affects nurses emotionally, creating stress, fatigue and decreased effectiveness in delivering patient care, safety while increasing patient and family stress and decreasing outcome and overall health care quality. Overcrowding reduces staff productivity and performance and leads to negative health indicates (Matakanye et al., 2019:4997).

2.4.3 Relatives related effects

According to Bingo and Ince (2021:942), overcrowding in hospitals contributes to violence as patients stay longer due to not being assisted. Relatives of the patients become anxious and stressed while waiting, and some become aggressive towards staff members (Bingo & Ince, 2020:942).

2.5 Measures to address overcrowding

The research found that additional staff can help relieve nursing, doctors and other support services. As patient's admission volumes increase, the discharge of recovered patients must increase. Patients must be discharged promptly to make beds available, even during the weekend. Prioritising patients who could be discharged but waiting for test results is required. Identification of late discharges; including waiting for transport, can assist in limiting overcrowding. Chen and Liang (2018:67) also stated that taking

nurses into account when planning patient ratio and strategies to improve waiting time can reduce overcrowding of patients.

In New York increasing number of specialists in health care industry and involving visitors on patients care, has reduced patient number of stay and decrease overcrowding. Fast track treatment reduces overcrowding and increases patient satisfaction (Obeada, 2019:45).

Since reasons for overcrowding are seasonal illness and unnecessary hospital visits, solutions to reduce overcrowding include early discharge of patients, particularly weekend discharge, as there is a high rate of admission during the weekends while patients are not discharged. Improving services available on weekends will increase capacity and decrease the overcrowding of patients (McKennana et al., 2019:215).

In a Pakistan tertiary care hospital, they identified a possible solution to reduce overcrowding, such as discharging patients. Out of 6,502 patients, 757 were discharged immediately and others were transferred to other hospitals (Habib & Khan, 2017:87). Some delays were occupied ventilators and not using a checklist for a proper reassessment of patients and early discharge and overload of patients coming in hospital for nebulisation, intravenous and intramuscular injection. The hospital faced overcrowding which overwhelmed standard care (Habib & Khan, 2017:89).

Some improvements are essential to reduce overcrowding, possibly by strengthening the referral system and linkage between the health facilities. Referral is a metric for the overall function of health care system, reflecting the government's ability to manage all subsystems (Harahap, Handanyani & Hindayanto, 2019:20).

Overcrowding of patients can be reduced by developing discharge planning, implementation, reducing long waiting times and increasing the number of beds and staff (Babatabar et al., 2020:382).

Cakmak et al. (2021:67) stated that several factors can facilitate reducing overcrowding, for example, faster equipment, planning schedules according to busy hours and qualified staff. In order to achieve early discharges, major institutional changes must be implemented. Interaction between nurses and physicians and multidisciplinary team rounds must be implemented to increase early discharges.

Patients must be included in the care plan and organise blood tests so that their discharge can occur as soon as possible (Cakmak et al., 2021:61).

Ensuring the availability of resources could reduce overcrowding, especially in rural areas where some PHC facilities transfer patients who are not critically ill due to lack of water and electricity (Maphumulo & Bhengu, 2019:191).

Review of patients by multidisciplinary team. Weekly meetings, facilitated by performance improvement offices explore factors related to overcrowding. It is a complex issue that requires planning assessment of all stakeholders and continuous risk anticipation (Gaeta et al., 2019:242).

Institutions to reduce overcrowding by facilitating transfers of patients, the agency for health recommends establishing a team all multidisciplinary team members to develop strategies to decrease overcrowding (Jeanmonod&Jeanmonod,2018:60).

Develop policies at PHC for patient transfers and outreach facilities for doctors to visit PHC and see patients to avoid unnecessary demands for referrals to the hospital. Providing counselling to the patients who believe they recover after being admitted to the hospital, develop discharge lounges for patients awaiting collection by relatives (Babatabar et al., 2020:383).

Empowering patients was also raised as important. Patients are encouraged to use other alternatives if available where care is available rather than using one hospital, which is overcrowded, as other health facilities provide the same care and treatment (Jeanmonod & Jeanmonod,2018:65).

An efficient information technology support system also addresses overcrowding. This includes patient flow support, clinical guidelines communication system and reducing duplication. Some patients from other hospitals are admitted because the doctor seeing the patient cannot get their history as patient files are lost due to the poor information technology system. Some patients stay for a long time as they are treated as new patients, delaying discharge and causing complications as there is no continuity of care from their old files (Jeanmonod & Jeanmonod, 2018:64).

Early clinical assessment was another measure mentioned. This includes early investigation of patient management, multidisciplinary care services, improvement of rehabilitation services and early discharge of patients. When patients are assessed

promptly, many illnesses can be detected before complications arise; delays can lead to more severe illness, longer recovery times and, therefore, longer hospital stays (Jeanmonod & Jeanmonod, 2018:62).

2.6 Conclusion

Many reports from different parts of the world, including Africa, Europe, Asia, and America, indicate overcrowding in health facilities. More research is needed to reduce patient overcrowding. However, there are multiple small process improvement projects to reduce overcrowding, and the next chapter will focus on the methodology used in this study.

Chapter 3

Research Methodology

3.1 Introduction

The previous chapter focused on the literature review related to the problem in the study. This chapter concentrates on the research methodology. The research method is the plan to enhance the integrity of the study, which includes the approach, method of data collection, ethical considerations, time, place, and sources of data and the method of data analyses (Polit & Beck, 2016:130).The chapter discusses the research approach, design, sampling, data analysis and ethical consideration.

3.2 Research approach

This study adopted a qualitative approach. This is a systemic interactive subjective approach used to describe life experiences, explore the meaning or describe and promote the understanding of human experiences (Uys & Basson, 2017:40). The researcher selected this methodology to examine and analyse the determinants of patient overcrowding and its impact in a regional hospital of Vhembe District, Limpopo Province.

3.3 Research design

This study used a descriptive, explorative and contextual design.

3.3.1 Descriptive design

A descriptive design provides a comprehensive summary of events where more information is required in a particular field of study (Brink & Cristiva, 2016:128). It aims to explore and describe the phenomena in real-life situations and identify problem with current practice. It presents the specific details of a situation, social setting or relationship and focuses on the how and why (Neuman, 2017:126). A phenomenological descriptive design was appropriate as the researcher intends to describe the determinants of patient overcrowding at the Vhembe District regional hospital in the Limpopo Province as described by the nurses.

3.3.2 Explorative

According to Van der Walt and Van Rensburg (2017:129), an exploratory study aims to collect new information concerning about little-known subject or where no previous research exists. Brink and Cristiva (2016:128) define an exploratory study as exploring the dimension of a phenomenon, how it manifests and related factors. The researcher went beyond description; each participant had had the opportunity to explain the determinants of patient overcrowding. Furthermore, the researcher identified the issues described by the nurses regarding. The participants could explain the factors related to overcrowding and how this affects their day-to-day work, as well as the effect on patient treatment and recovery.

3.3.3 Contextual

According to Burns and Grove (2018:126), the contextual design focuses on specific events in a naturalistic setting. De Vos et al. (2018:45, 128) describe the study of participants in their natural setting to understand the dynamics of human beings as fully as possible with the aim of gaining original data regarding how the participants go about their daily lives. The context of this study is a natural setting because individuals take their meaning from their context. It is appropriate as it provides the opportunity to identify the determinants of overcrowding of patients in a regional hospital where patients are admitted, and nurses are at work.

3.4 Setting

The study setting is a specific place or places where the data will be collected; a real-life situation or environment (Brink & Cristiva, 2016:67). This study was conducted in the selected regional hospital in the Vhembe District. The district is one of the five regions situated on the north-eastern side of the Limpopo Province. There are seven hospitals; six are district hospitals and one is a regional hospital in the Thulamela municipality (Figure 1).The hospital was chosen because it is a referral hospital to which other hospitals in the district transfer their patients. This hospital has 400beds and provides service to the community with the following units; medical, surgical, paediatric, maternity, TB ward, operating theatres and outpatients department (OPD) and casualty serving five district hospitals and 42clinics, some operating during the day and other on a call system. Fourteen clinics refer directly to this hospital. The hospital is on the Punda Maria R524 road in the Tshisaulu village. It is ten kilometres

to Thohoyandou and 50 kilometres to Louis Trichardt and 150kilometres from Musina on the border of Zimbabwe and South Africa.

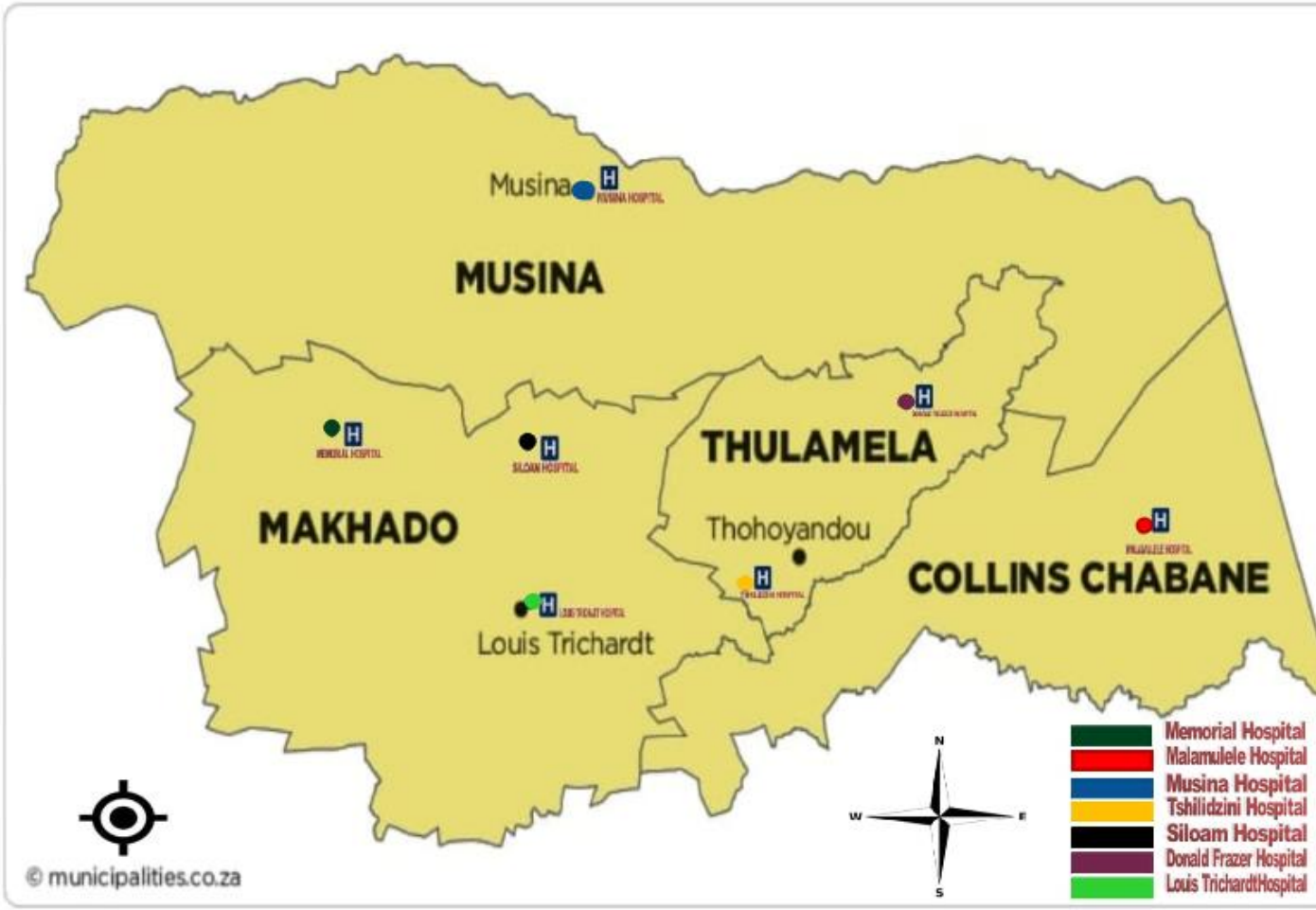

Figure 1: Hospitals in Vhembe district Limpopo Province

3.5 Population and sampling

3.5.1 Population

According to Burns and Grove (2018:109), a population refers to the entire group of people of interest to the researcher. For this study, the population were enrolled and registered nurses, both males and females of all age groups working at the regional hospital of Vhembe District in the Limpopo Province. The target population can also be described as the entire set of elements to be assessed by the researcher (Burns & Grove, 2018:131).

3.5.2 Sampling

Multi-stage sampling was used to sample the hospital, wards and participants.

3.5.2.1 Sampling of the hospital

Sampling is the process of selecting a portion of the population to participate in a study, while a sample refers to a group of people selected from a defined population (Burns & Grove, 2018:4). In this study, non-probability purposive sampling was used to select the regional hospital of the Vhembe District in the Limpopo Province. Non-probability sampling implies that not every element of the population has an equal opportunity of being selected. The hospital was chosen because it is the only regional hospital receiving patients from six district hospitals in the Vhembe area**.**

3.5.2.2 Sampling of the wards

The following wards, maternity, paediatric unit, TB ward and casualty were sampled for the study as these are the wards experiencing overcrowding in the hospital.

3.5.2.3 Sampling of nurses

A non-probability convenience sampling method was used to select the participants**.** According to Polit and Beck (2016:25), the sample size is the number of people included in the study. Twenty participants were selected, that is, five from each of the four sampled wards.

3.5.2.4 Inclusion criteria

Polit and Beck (2016:339) stated that these criteria specify the population's characteristics and are sometimes referred to as eligibility or inclusion criteria. In this study, the inclusion criteria were all male and female enrolled and registered nurses from 21–65 years of age who have been working in the regional hospital for six months and more. The researcher decided to include those with more than six months work experience because they have experienced overcrowding in their wards or units unlike someone who has one month work experience, it is possible that this nurse might not have experienced the overcrowding.

3.5.2.5. Exclusive criteria

According to Brink and Cristiva (2016:49), exclusive criteria are criteria which are being used to identify participants who will not be included in the study. The exclusion criteria for this study were:

- Nurses less than 21 years
- Nurses with less than six months work experience

Exclusion criteria were included to indicate which possible participants were left out as they did not possess the required characteristics, for example, those with less than six months may be less familiar with overcrowding and its determinants.

3.6 Data collection instrument

According to Polit and Beck (2016:420), the data collection instrument refers to the means used to collect data. Interviews were used to gather the data and allowed the participants to explain the determinants related to the overcrowding of patients without interruption or limitations. Moreover, this data collection instrument allowed the researcher and participants to establish relationships, thereby enabling them to express themselves without fear or prejudice. The researcher asked two central questions: What are the determinants of patient overcrowding? What are the impacts of overcrowding of patients in your hospital? (Annexure K). The questions had enabled a better understanding of these factors and personal experiences.

The questions referred to the causes of overcrowding and its impact and probing questions were asked based on the participant's responses. A voice recorder was used to capture the interviews with the participant's consent.

3.7 Pre-test

According to Brink and Cristiva (2016:48), a pre-test is about verifying the ability of the research instrument to collect data and ensuring that there are clear instructions for the instrument. Prior to the actual data collection process, two nurses (one enrolled and one registered) were selected from one district hospital and interviewed to ensure it is understandable and can be completed in the time allowed. During the interviews, both participants had problems understanding the term 'determinants'. Although the participants struggled to understand it, after an additional explanation from the

researcher, they could answer with the relevant information. The researcher refined the word 'determinants' to 'causes'. Then, the researcher selected two participants for another pre-test study. Both participants had no problems with the wording of the question. They understood the term 'causes' and they responded without hesitation.

3.8 Data collection

According to Polit and Hungler (2018:53), data collection gathers information needed to address the research problem. Data is the information attained during the study using a chosen method, for example, interviews, observations and questionnaires. For this research, data was collected using face-to-face interviews from 19 out of 20 sampled participants due to data saturation. Interviews are a data collection method in which the researcher questions the participants verbally and allows interaction between the researcher and participants (Schneider, Elliot, LoBiondo & Haber, 2018: 34). Once permission for the research was obtained, the researcher made an appointment with the enrolled and professional nurses for data collection. The researcher gave the participant an information sheet (Annexure J) detailing the information of the study and obtained written consent (Annexure K). A spare office was requested from the manager for the interview process to avoid distractions. Interviews were done during lunch breaks or after working hours, depending on their preference. Due to COVID-2019, compliance protocols were followed to prevent cross-infection.

An audiotape approved by each participant captured the discussion so that no information was missed during the analysis. The discussions were conducted in English as it is the official language used in the hospital. Field notes were made regarding verbal and non-verbal responses expressed by the participant during the interview. Interviews lasted approximately 45 minutes, and the two central questions had facilitated the discussion. Interviews continued until data saturation.

3.9 Data analysis

Data analysis is the systematic organisation and synthesis of research data and testing the research hypothesis within those data (De Vos etal., 2018:167). This requires the researcher to listen to the participants recording several times, followed by reading, analysing and reporting the contents (Helen & Dona, 2017:8). Collected

data was transcribed verbatim, broken down, examined, summarised, organised, compared, categorised and described. There was no translation since the interviews were in English. Data was analysed guided by Tesch's method (Brink & Cristiva, 2016:147). Eight steps for the coding process, which are as follows.

Step 1: Get a sense of the whole

The researcher listened to the recordings several times to ensure that the transcript information was correct and complete. The researcher further read the completed transcripts while making notes to get a sense of the whole.

Step 2: Picking one interview document

The researcher focused on one interview at a time and identified the subjects mentioned in that transcript. The researcher picked up the most interesting interview on top, read and underlined the meanings created from the major assertions and recorded ideas that came to mine in the margins.

Step 3: Make a list of the topics mentioned

After all data has been analysed, the researcher made a list of similar topics and grouped them into major, minor or unique topics.

Step 4: Take this list and go back to the data

The researcher abbreviated the categorised topics as codes and wrote them to the appropriate section of the text while reviewing the material to check for new categories or codes.

Step 5: Finding the most descriptive wording

The researcher identified the most descriptive wording for the identified topics and placed them into categories while grouping the related topics and indicating their interrelationship.

Step 6: Make the final decision on the abbreviation for each category

The researcher made conclusive decisions on the abbreviation for each category and wrote them alphabetically and made a preliminary analysis.

Step 7: Assemble data belonging to each category and perform an initial analysis

Data with similar topics were clustered together, and a preliminary analysis carried out.

Step 8: Recode existing data if required

The existing data was recorded if necessary. The researcher conducted a code-recode procedure on data throughout the analysis phase of the study. After coding a section of data, the researcher waited at least two weeks and then returned and recoded the same data and evaluated the results.

3.10 Measures to ensure trustworthiness

According to Lincoln and Guba (1985), trustworthiness refers to the criteria for ensuring rigour in qualitative research. The four criteria for developing trustworthiness are credibility, transferability, dependability, conformability and. These four criteria are parallels to criteria of internal validity, reliability, objectivity and external validity and are discussed below (Brink & Cristiva, 2016:45).

3.10.1 Credibility

Credibility refers to the truth value obtained from discovering human experiences as lived and perceived by informants (Lincoln & Guba, 1985:5). Truth value or credibility explains how one can establish confidence in the truth of the findings of inquiry (Neuman, 2017:98). The researcher used this strategy to ensure that the study's findings reflect the causes and impact of overcrowding of patients. The researcher engaged in prolonged interaction with nurses during data collection to build trust and establish rapport. Furthermore, member checking ensured credibility by providing feedback to the nurses on the findings to ensure that the researcher has captured the determinants of overcrowding.

3.10.2 Transferability

Lincoln and Guba (1985:4) describe transferability as an instrument to determine whether the findings can be applied in other contexts or settings or with other groups. In the current study, transferability was achieved through:

- The thick description of research design, participants and the context in which the phenomenon occurred.
- Purposive sampling ensured that the study has the relevant participants who meet the inclusion criteria and the description of the participants' demographics.
- Participants were representative of the population and its characteristics.
- The researcher made connections from the collected data to both local and entire community level behaviour and practice.
- There was a detailed description of results supported by verbatim quotations and supported by a literature control.

3.10.3 Dependability

The emphasis is on whether the findings would be consistent if the investigation is replicated with the same subject or similar context (De Vos et al., 2018:86). Dependability means that the data is trustworthy, and if repeated with the same participants in the same context, the findings would be similar (Brink & Cristiva, 2016:165). In the current study, dependability was achieved through the following activities:

- Dense description of phenomena being studied that is determinants of overcrowding in the regional hospital of Vhembe District, Limpopo Province were well described.
- The researcher used a voice recorder and field notes during data collection to ensure accuracy and kept hard copies of transcripts, observation and field notes to ensure an audit trail.
- Data was back up by relevant literature.

3.10.4 Conformability

According to Lincoln and Guba (1999) in De Vos et al. (2018: 421), there is a need to ask whether the study's findings could be confirmed by another researcher. The researcher has to provide evidence which corroborates the findings. In the current study, confirmability was ensured through the following activities:

- The researcher ensured neutrality in collecting data, analysing and coding it.

- The researcher ensured that she records the true responses of the participants. This was achieved by triangulation using a voice recorder, observation and field notes.
- The researcher avoided bias during the study.
- There was a dense description of the phenomenon under study.

De Vos et al (2018:178) further stated that the conclusions and recommendations must be supported by the data (DeVos et al., 2018:178). In this study, the processes were documented to demonstrate how conclusions were reached, including the raw data and field notes. The research design population and sampling, and data collection were clearly described and included the rationale for data analysis.

3.11 Ethical consideration

Polit and Beck (2016:89) mentioned ethical consideration as one of the most important parts of any research. These include permission, confidentiality, voluntary participation, anonymity, informed consent and the principle of doing no harm, among others.

3.11.1 Permission and ethical clearance

Approval for the study was obtained from the University Higher Degree Committee and the Ethical Clearance Committee provided by the University of Venda Ethics Committee (Annexure B). Also, the researcher requested permission to conduct the study from the Provincial Department of Health (Annexure C), management of regional hospital (Annexure E) and hospital board.

3.11.2 Confidentiality

Confidentiality concerns the private information shared by the participants by the researcher, which is not shared with other individuals as the information gathered is for the research. If the participants are interested in the findings, they can be made available. Data collected was not linked to the participants; their identity remains anonymous as numbers or pseudonyms were assigned instead of names, research data was coded and accessible only to the responsible persons (Burns & Grove, 2018:344).

3.11.3 Anonymity

Burns and Grove (2018:393) define anonymity as the confidentiality of information received from the participants. The names of the participants involved in the study were not revealed, and the material received remains anonymous by using numbers or pseudonyms. In case of publication of the results, the researcher will ensure that the participants' identities are protected.

3.11.4 Informed consent

Informed consent is the ethical principle that requires voluntary informed consent from a participant to participate in research by informing each participant about his or her rights, the purpose of the study, the process and the potential risk and benefit of participation (Burns & Grove, 2018:394). In this study, informed consent was provided to the participants with the aim, objective and method of data collection and that participation is voluntary, and they can terminate at any stage. Consent forms for their signature indicating agreement were provided.

3.11.5 Principle of no harm to others

Participants' health may be affected during the research. The research was conducted in a manner to avoid harm. During data collection, COVID-19 protocols were maintained to prevent participants from being infected.

3.12 Dissemination of the results

A copy of the dissertation will be submitted to the Department of Health, the management of the regional hospital and the University of Venda library. Publication of the results will be in accredited journals.

3.13 Conclusion

This chapter discussed the methodology, and the next chapter presents the results. Overcrowding of patients and shortages of specialists in hospitals is a global problem requiring urgent attention due to its negative impact on patient care. There are economic implications, and it is associated with complications and development of other conditions not related to primary diagnosis on admission.

Chapter 4

Presentation of Results

4.1 Introduction

The previous chapter discussed the methodology, and this chapter details the results and interpretation. The findings of the study will be reported based upon the information gathered, and four major themes derived from the data are discussed.

4.2 Characteristics of the participants

Data was collected from professional and enrolled nurses. Nineteen participants were interviewed for data collection. Data was collected between July and August 2021.

Table 4.1 below presents the demographic information (Gender, age, marital status and qualification of participants).

Table 4.1 Demographic information of participants

Characteristics	Frequency	Percentage%
Gender		
Male	5	26
Female	14	73
Age		
18-29	1	5
30-39	4	21
40-49	9	47
50-59	5	26
Marital status		
Single	7	36
Married	12	63
Qualifications		
Professional nurses(P/N)	12	63
Enrolled nurse(E/N)	7	36

Table 4.1 shows that of the 19 participants interviewed, five (26%) were males, and 14 (73%) were female. Participants age group were 18 to 59, were 18–29 one (5%), 30–39 were four (21%), 40–49 were nine (47%), and 50–59 were five (26%). Seven (36%) participants were single, and 12 (63%) were married. Findings further indicate that 12 (63%) were professional nurses, and seven (36%) were enrolled nurses.

4.3 Presentation of findings of the study

Four themes emerged; institutional factors, behavioural factors, disease outbreak and impact of patient overcrowding. Themes are presented with direct quotes of the participants alongside subthemes and categories below.

Table 4.2. Shows themes, subthemes and categories

Themes	Subthemes	Categories
4.2.1.Instutitional	4.2.1.1.Shortage of resources	Shortage of staff
		Shortage of beds
		Shortage of equipment
		Shortage of transport
	4.2.1.2.Inadequate space and old building	
	4.2.1.3. Poor referral system.	
	4.2.1.4.Delayed investigations and procedure	
4.2.2.Patient behavioural factor		Alcohol use
4.2.3.Disease outbreak		
4.2.4.Impact of patients overcrowding	4.2.4.1.Staff-related effect	Nurses fatigue Nurses harassment
	4.2.4.2.Patients-related effects	Poor quality patient care
		Patients risk of infections

4.3.1 Institutional factors

Under this theme, four subthemes emerged: a shortage of resources, inadequate space and old buildings, poor referral system and delayed investigations and procedures.

4.3.1.1 Shortage of resources

Under this subtheme, four categories emerged: the shortage of staff, shortage of beds and equipment and shortage of transport.

4.3.1.1.1 Shortage of staff

During interviews with participants, the shortage of staff was mentioned as a cause of patient overcrowding; according to the participants, shortage of porters, X-ray personnel, nurses and doctors affects care treatment and discharge of patients.

Shortage of staff comments from participants are below:

> *The doctor who is on call is the only one available and he/she cannot discharge the without the consultation of specialist. (*Participant 01, Professional nurse)

> *It is really overwhelming when the wards are crowded with patients and we are understaffed in such a way that ends up failing to provide safe patient care and achieve our set goals. Furthermore, it also takes long for patients to heal.* (Participant 05, Professional nurse)

> *When the intern doctor is the only one doing the rounds and she/he cannot discharge the patient in absence of specialist.* (Participant 06, Professional nurse)

> *At times doctors and nurses are enough but you find that there are no porters to wheel patients to their respective wards, these also causes casualty to be overcrowded.* (Participant 14, Professional nurse)

> *It is because we are understaffed and as results of this, quality care of patients is not provided effectively. This in turn will make the patients to stay at the hospital for a long time.* (Participant 15, Enrolled nurse)

I think there is shortage of staff because on weekend there is only one person who is on call and responsible for X-ray so he or she considers only those involved in a car accident. (Participant 18, Professional nurse)

Sometimes is issue of theatre you will find that the other theatre is not working because there are shortages of staff, sometimes is due to shortage of doctors who are supposed to operate. (Participant 19, Enrolled nurse)

4.3.1.1.2 Shortage of beds

During participant interviews, participants indicated that shortage of beds is one of the causes of patient overcrowding. According to the participants, some patients have to sleep on the floor, on stretchers even in bathrooms.

Participant's comments on shortage of beds below:

It is really distressing, as it becomes challenging to help patients because there are shortages of beds in the wards for all the patients. Furthermore, it is very difficult to work effectively under this stressful situation. (Participant 01, Professional nurse)

Participants also mentioned strategies that they are taking to address overcrowding.

At times we provide alternative measures like taking other patients whose conditions are stable to those wards that have enough space and beds and retain those who are critical ill. (Participant 02, Professional nurse)

We are forced to look for the availability of space even in the maternity wards and gynae, because, as patient, s they cannot be allowed to sleep on floors. (Participant 09 Professional nurse*)*

We look for the availability of spaces from female medical wards in order to avoid a situation where the patient can end up sleeping on the floor. (Participant 17, Enrolled nurse)

4.3.1.1.3 Shortage of equipment

Participants mentioned the shortage of equipment as another contributory factor to patient overcrowding. When there are shortages of equipment, it delays patient's investigations, X-rays, machines to test tumour markers and CT scans; for example,

patients are to wait longer for examination patients have to wait in the hospital for investigation and reviews.

Below is what participants said on the shortage of equipment:

> *Some patients are still waiting to receive blood test results, and some are waiting for X-rays to be done as there is only one X-ray machine.* (Participant 01, Professional nurse)

> *Those bloods are tested at the provincial hospital because our machine is not capable of testing the blood of tumour markers, patients are to be done chemo at provincial hospital.* (Participant 18, Professional nurse)

The participants also suggested adding another X-ray machine to reduce patients waiting times.

Below is what one participant said:

> *I think they must add more X-ray machines and radiographers maybe if they can have a machine used for emergency only and the other for inpatients.* (Participant 17, Enrolled nurse)

4.3.1.4 Shortage of transport

Participants also mentioned the shortage of transport as a contributory factor to overcrowding as when there is shortage of ambulances patients have to stay at the hospital awaiting transfer to the other hospital for further management. Shortage of transport causes patients to remain in the regional hospital, whereas the care needed is at a Provincial or tertiary hospital. This delay specific care, treatment and discharge, as mentioned by the participant below:

> *You will find that patients didn't go because there is no ambulance patients have to stay in this hospital until transport became available.* (Participant 18, Professional nurse)

There are different factors contributing to patient overcrowding; institutional factors include excessive time spent at the laboratory, poor coordination of workers, lack of inpatients beds, space and other resources.

4.3.1.2 Inadequate space and old buildings

Participants mentioned infrastructure as contributing to overcrowding, limited space in the hospital and old buildings for the patients.

Comments below are from participants regarding infrastructure:

> *... hospital has limited space to admit patients. On account of this, there is a need to improve the building of the hospital.* (Participant 05, Professional nurse)

> *Our health facilities are old and inappropriate to the need of patients in addition there is a need to increase health building of the hospital.* (Participant 10, Enrolled nurse)

Participants have some suggestions for the building to reduce overcrowding; they mentioned building a new hospital with a transformed physical design or extending it.

Below is what the participants have said:

> *If the government can hire or employ additional health care professionals and build new hospital with transformed physical design it can minimise this overcrowding.* (Participant 02, Professional nurse)

> *...another thing that can be done is to extend the hospital.* (Participant 14, Professional nurse)

4.3.1.3 Referral system

Participants indicated that patients who do not want to consult at their nearest clinic and their hospitals contribute to overcrowding. As stated by the participant, some illnesses can be treated at their nearest clinic; patients wait for a date to be treated at another provincial or tertiary hospital.

Participants mentioned the following concerning the referral system:

> *Some wait for the specialist to attend to them; some are waiting for the dates to be transferred to Polokwane.* (Participant 12, Professional nurse)

> *Patients are admitted to the hospital unnecessarily as they can be treated at the clinics.* (Participant 15, Enrolled nurse)

They further suggested that patients can be treated at their nearest clinic. See suggestions below:

> *If the patients should be encouraged to visit their clinics for consultation because when they visit the hospital for consultations, doctors end up admitting them unnecessarily. This usually takes place when the doctor in charge or specialist is not around.*(Participant 09, Professional nurse).

4.3.1.4 Delay investigations and procedures

Delayed investigations and procedures were mentioned; patients wait for a long time for blood tests and other investigations delaying their discharge.

Participants said the following:

> *Some patients are still waiting to receive blood test results, investigations and procedures.* (Participant 01, Professional nurses)

> *It is also caused by doctors not discharging patients because patients are still waiting for the results.* (Participant 08, Enrolled nurse)

> *Some patients are still waiting to receive blood test results, Intercostals drain CT scan X-rays, sometimes blood results can be released after two to three days.* (Participant 14, Professional nurse)

> *Blood results are taking time to be released, especially for patients with tumour;, those bloods are tested at the provincial hospital laboratory because our machine is not capable of testing the blood of tumour makers.*(Participant 18, Professional nurse)

4.3.2 Patients behavioural factors

Participants raised an increased number of injuries, for example, injuries related to alcohol use due to fights in shebeens, car accidents and assaults.

4.3.2.1 Alcohol use

Alcohol uses is as one of the causes of overcrowding, participants indicated that people under the influence of alcohol assault each other, are involved in car accidents and come to the hospital for treatment.

The hospital became overcrowded because of the behaviour of some people who drink and drive during the night, some are stabbed because of substance abuse and these are not patients with chronic conditions. (Participant 04, Professional nurse)

Patients who are involved in car accidents being under the influence of alcohol abuse when coming from parties.(Participant 08, Enrolled nurse)

In most cases, this is caused by those stabbed during fights in the shebeens. (Participant 14, Professional nurse)

4.3.3 Disease outbreak

Diseases outbreak was a contributory factor to patient overcrowding; participants indicated that sick patients come to the hospital in large numbers when there is a disease outbreak and are admitted.

The country is experiencing coronavirus disease 2019 resurgence; many people across the country are getting infected with Covid-19. (Participant 05, Professional nurse)

Another challenging factor is the coronavirus disease 2019 pandemic, where patients are admitted in large numbers, contributing to overcrowding. (Participant 14, Professional nurse)

4.3.4 Impact of overcrowding

This theme has two subthemes, staff-and patient-related factors.

4.3.4.1 Staff-related effects

This subtheme has two categories: nurse's fatigue and nurse's harassment.

4.3.4.1.1 Nurses fatigue

Participants stated that when the wards are overcrowded, they get tired, stressed and exhausted and develop back pains; they further stated that the exhaustion could lead to poor record-keeping.

The participants said:

This is not good at all because we are overworking and experiencing back pains while trying to manage the patient. (Participant 06, Professional nurse)

It is not easy at all we end up experiencing back pain. (Participant 11, Enrolled nurse)

By the time you knock off, you will be very tired, on the following day, the whole body will be painful and you won't be feeling to come back to work tomorrow. (Participant 17, Enrolled nurse)

This process of escorting patients who did not get beds in their specific admitted wards is tiring and leads to more fatigue. (Participant 18, Professional nurse)

Other participants stated that they experience stress when the wards are overcrowded:

It increases stress on us, and we end up failing to manage patients effectively. (Participant 11, Enrolled nurse)

It is very difficult even to record what you have done and if you didn't record it means you didn't work you will find that you worked very hard but you did not have time to record. (Participant 19, Enrolled nurse)

4.3.4.1.2 Nurse's harassment

Participants indicated that some of the patient's relatives were impatient, especially when their patients were not attended because they felt that nurses were not working and started harassing them.

We have cases where nurses are insulted and beaten by objects by family members who accompanied patients and claim that we are not managing their patients up to their expectations. (Participant 14, Professional nurse)

It is not good at all because some patients become emotional and feel that they are not treated well by being transferred to other wards, some even shout at us and tell us if we don't want them anymore, we should let them go. (Participant 16, Professional nurse)

4.3.4.2 Patients-related effects

This subtheme discusses poor quality patient care and patients' risk of infection.

4.3.4.2.1 Poor quality patient care

Participants indicated that some of the patients are not getting quality care as the health professionals have too many patients and it is difficult to maintain privacy. Overcrowding also affects patient care negatively. Patients' privacy cannot be maintained while they are on stretchers and on the floor.

See quotes below:

> *As health care professionals, we find ourselves overburdened by work which in turn affects the quality of service provided to patients. For instance, we have to bath some of the patients and provide care to patients with emergencies, such as head injuries caused by car accidents. In addition, nurse's shortage as nursing is the root cause for the huge disproportionate nurse patient's ratio.* (Participant 01, Professional nurse)

> *It is very difficult to work in this stressful situation. Sometimes the beds are closer to each other and providing high-quality care to all patients become a challenging task many patients will be demanding care at the same time which become difficult, some end up being not attended*.(Participant 14, Professional nurse)

> *It is very difficult to provide high-quality care and maintain the privacy of our patients, and the designated care sites are not where the patients are supposed to be. There is no privacy when the ward is already crowded, especially now during the covid 19 pandemic where social distancing among the patients is no longer exercised.* (Participant 4, Professional nurse)

> *It is quite challenging that we are unable to provide high-quality care to patients.* (Participant 12, Professional nurse)

> *It is very difficult to provide patients with quality care when the wards are overcrowded. Time for record-keeping is also affected by this challenge and treating patients lying helplessly bleeding on the floor is not feasible.* (Participant 13, Enrolled nurse)

> *Furthermore, treating patients lying helpless, bleeding on the floors is not feasible.* (Participant 19, Enrolled nurse)

4.3.4.2.2 Patients risk of infections

While there is overcrowding in the wards, patients are at risk of acquiring infections as some are even nursed on the floors and in other cases, there is no social distancing, as stated by participants during the interviews.

Below are participant comments:

> *Some patients will be lying helplessly on the floors as a result of this, patients are prone to infections and their safety is compromised especially now when the country is experiencing the resurgence of Covid-19.*(Participant 01, Professional nurse)

> *Another challenging factor is the Covid-19 pandemic, where people are expected to maintain social distance, which is not possible when the wards are overcrowded with patients and family members who accompany them. This, in turn, poses health risks.* (Participant 14, Professional nurse)

> *Not good at all, because the patients are not getting high-quality care where they were admitted. As a result, they are also prone to infections.* (Participant 09, Professional nurse)

4.4 Conclusion

This chapter presented findings of the study under four themes, namely: institutional factors, patient's behavioural factors and disease outbreaks and impact of patient overcrowding. The next chapter will present the discussions.

Chapter 5

Discussion, Limitations and Recommendations

5.1 Introduction

The previous chapter discussed the presentation and interpretation of the findings. This chapter reviews the findings, study limitations and recommendations. It details the demographic characteristics, institutional factors, patient behavioural factors, disease outbreak and impact of patient overcrowding in line with the objectives of the study.

5.2 Demographic characteristics of participants

The demographic information discussed in this study includes gender, age and experience.

5.2.1 Gender

Findings show that of the 19 participants interviewed, five (26%) were males, and 14 (73%) were female. More females participated in the study, and the explanation could be that nursing is a mostly female profession. It is related to the current situation in the nursing profession, where more females than males are found in hospitals. This study is in line with research by Ramabulana (2017:118) that had more female participants than males.

5.2.2 Age

Participants' age groups were as follows:18–29 years was one (5%), 30–39 were four (21%), 40–49 were nine (47%), and 50–59 were five (26%).The study shows that more participants were 40–49 years of age, followed by 50–59. The current finding is in line with Ramabulana (2017:116), who reported most participants aged 40–59 years.

5.2.3 Experience

Participants working experiences were six months and more; those with more than two years' experience described more determinants than those with less than two years. As stated by Mphephu (2019:67), many years in the wards means more experience.

5.3 Institutional factors

The following subtheme emerged under this theme, shortage of resources, inadequate space and old buildings, poor referral system and delayed investigations and results.

5.3.1 Shortages of resources

Shortages of resources are contributory factors to patient overcrowding, and under this subtheme, four categories emerged, including shortage of staff, beds, equipment and transport.

5.3.1.1Shortage of staff

Shortage of staff was mentioned by participants as a contributory factor to overcrowding. Participants mentioned that when there is shortage of staff, patients are not attended to effectively, and their expectations are not met. Participants mentioned that the shortage of X-ray personnel prolongs patients' stay. Furthermore, personnel do not operate on weekends, so patients admitted have to wait for Monday for X-rays, increasing the number of patients waiting. Some patients have to wait for operations because there is only one specialist; they wait for many days. The findings are in line with Lumadi and Matlala (2019:7), who indicated that nurses are the backbone of patient care in the health care system, and a shortage of staff is faced by many countries worldwide, including South Africa.

Thiel, Schreyogg and Winter (2020:380) also support the findings and state that the shortage of health professionals are related to organisational and environmental factors. More staff has a high cost but improves patient care outcomes, while less staff reduces patient care outcomes and is likely to increase overcrowding (Thiel, Schreyogg & Winter, 2020:380).

Alhabdan, Alhusain and Masuadi (2019:15) also reported in their study that the nationwide nursing shortage has caused many hospitals to close. Participants in shortage of staff and overcrowding. Despite being very busy, participants must handle problems that they are not trained for or inclined to handle, such as problems with visitors.

5.3.1.2 Shortage of beds

Participants in this study also revealed that bed shortages contribute to overcrowding. When there are shortages of beds, patients have to sleep on the floor and stretchers. Some are sent home or transferred to another hospital for further management because of beds shortage. When the patient is in a regional hospital, and their management can only be provided at a provincial hospital, they must stay in a regional hospital until a bed is available at a provincial hospital before being transferred. Patients had to travel daily from the regional to provincial hospitals until a bed was available. This was supported by findings in a study by Crowe et al. (2020:56), who found that shortages of beds contribute to overcrowding.

Similarly, in his study, Njogu (2018:14) found that bed shortages contribute to patient overcrowding. Multivariate logistic regression analysis performed in the Njogu study traced the overcrowding problem related to insufficient beds in California hospitals; there were not enough beds for patients needing to be hospitalised.

5.3.1.3 Shortage of equipment

A shortage of equipment also causes overcrowding. Participants in the current study indicated shortages of X-ray machines in the hospital, causing long waiting periods for patients, for example, for specific diagnostic procedures, such as CT scans. There is one CT scan machine for the Vhembe District, and patients have to have an appointment.

This is in line with a study done by Prisno and Adebisi(2020:62), which found that the healthcare system is experiencing shortages of equipment. It depends on medical equipment to provide quality patient care, and the overall performance of medical equipment supply needs to be evaluated (Prisno & Adebisi, 2020:62).

Similarly, Pinto and Carvalho (2020:186) demonstrated that the global current respiratory diseases have resulted in hypoxia and respiratory failure, which resulted in the demand for ventilators. The resulting shortage of ventilators has resulted in patient's congestion in most countries due to patients having to queue for ventilators. Since patients exceed the capacity of the equipment, this causes delays to early rehabilitation and promotes rapid function and recovery.

5.3.1.4 Shortage of transport

Transport shortage was mentioned in this study as a cause of patient overcrowding. Patients who are supposed to transfer to a specific hospital cannot be moved when there is a lack of transport. Furthermore, they have to stay in the hospital but do not receive their treatment and wait for another appointment date as they had missed their date. The findings are supported by the study by Mengyu, Peter and Alex (2019:658), who found that patients cannot be transferred immediately because of a shortage of ambulances and remain in hospital without receiving their required services as the admitting hospital cannot provide it.

Ceyhan and Demir (2021:26) also support the current findings; and their study found that overcrowding is related to the shortage of ambulances. Patients have to wait before being transferred to specific hospital, which causes an exit block and contributes to the overcrowding of patients (Ceyhan & Demir, 2021:26).

5.3.2 Inadequate space and old buildings

Inadequate space and old buildings contribute to overcrowding in the current study. Participants mentioned that the buildings where they work were built long ago and cannot accommodate the rapidly growing population. Some indicated that the space is too small, thereby failing to accommodate the increased population. The study by Crowe et al. (2020:58) supports our findings by revealing that these old buildings contribute to a lack of space. The authors further suggested that procedure rooms be developed and evaluated for their practical effectiveness (Crowe et al., 2020:58).

The study by Pandey et al. (2017:88) also supports the current study. Their study found that poor building plans and structures create huge loss of human and other resources. Well-designed and usually expensive building plans and structures can minimise patient overcrowding in the hospital. Today, the infrastructural design of the hospital has a vital role in delivering health services to people (Pandey et al., 2017: 88).

5.3.3 Poor referral system

During the interviews, poor referral systems were mentioned as a cause of patient overcrowding. Patients not classified as an emergency arrive from home and not due to transfer by PHC professionals. Once in the hospital, medical practitioners do not

send them home for fear of legal issues; instead, they have to order the necessary tests. Since results take time, patients have to be admitted and wait for the results to see if there is a need for further management; some patients refer themselves to the hospital without any referral from other hospitals or PHC facilities. The current findings are in line with Bahadori et al. (2017:425), whose study found that a lack of a proper referral system in the country is associated with the problem of overcrowding in the hospitals. Unequal distribution of health facilities, specialists and advanced medical equipment increases overcrowding. According to one study, patients choose to be treated in health facilities with adequate materials and human resources (Bahadori et al., 2017:425).

Similarly, Ike et al. (2017:7) found that poor referral systems of orthopaedic, trauma and medical patients contribute to patient overcrowding. The consequences of poor referral systems as observed in Nigeria and other African countries, is that national hospitals are flooded with patients who could have been treated in the PHC settings or secondary care hospital (Ike et al., 2017:7)

In contrast with this study finding, the study by Bahadori et al. (2017:20) stated that patients are attracted to health care facilities because of the quiet environment that makes them forget their illness. They want to spend time with a sense of great security, comfort and satisfaction.

5.3.4 Delayed investigations and procedures

Investigations and procedures delaying also contribute to patient overcrowding. Participants mentioned delays in blood test results as a contributory factor to overcrowding. Patients must wait two to three days for blood test results because some blood investigations are conducted at Polokwane Provincial Hospital. Blood test results help clinicians diagnose and decide on patient management and treat them more efficiently to avoid prolonging their hospital stay and recovery. The study by Njogu (2018:34) agrees with the findings of this study as the author found excessive time spent at the laboratory for testing as a factor contributing to patient overcrowding.

Spander, Vuik and Niewenburg (2021:352) also support the findings of this study. They found that the processing of blood results after hours was deferred causing further delays. There is an increased number of microbiological laboratories as culture specimens are only transported during office hours; positive tests after the last

transport of the day are not processed until the following day. These delays starting antibiotics and patient healing (Spander, Vuik & Niewenburg, 2018:352).

5.4 Patient behavioural factors

Findings revealed behavioural factors as a contributory factor to patients overcrowding. Participants reported that alcohol misuse by patients was an enormous challenge because of related assaults and car accidents while under the influence of alcohol, and they come to the hospital for care in large numbers. This is supported by a study by Thiel, Schreyogg and Winter (2020:382), who demonstrated that hazardous alcohol is well known to increase individual risk of injury due to violence or accidents and increase hospital overcrowding. Acute care and treatment for alcohol-associated morbidities are often sought in hospitals (Thiel et al., 2020:382).

Witkiewitz, Litten and Liggio (2019:8) also confirm that behavioural factors contribute to injuries and patient overcrowding. Alcohol use disorder is characterised by loss of control and changes in the brain leading to alcohol-motivated behaviour. Alcohol, the most harmful drug, is a major contributing factor leading to injuries and preventable death and associated with increased risk of motor vehicle accidents adding to medical and mental health care costs.

5.5 Disease outbreak

An increase in disease outbreaks was revealed as a contributing factor in overcrowded hospitals as more patients seek help in the hospitals. This is in line with Van Der Veen, Remetjier and De Groot (2018:5), who found that disease outbreaks significantly affect population health increasing overcrowding, in health facilities (Van Der Veen, Remetjier & De Groot, 2018:45).For example, COVID-19 was mentioned by participants as contributing to overcrowding in the current study. It is known that patients who had moderate or severe symptoms of COVID-19 experience complications after recovery, such as hypertension, diabetes mellitus, among others, further adding to overcrowding in health facilities. The findings of this study are supported by Njogu (2018:7), who found that increases in diseases and pandemics contributed to overcrowding.

5.6 Impact of patients overcrowding

Overcrowding influences the provision and standard of care and affects both the patients and healthcare personnel. Patient-and staff-related effects are discussed below.

5.6.1 Patients-related effects

A result of overcrowding, patients may experience poor quality patient care and increased risk of infections.

5.6.1.1 Poor quality patient care

Participants revealed that patient overcrowding contributes to poor quality patient care. When there are many patients in the ward, it is difficult to provide care according to their expectations. With so many patients needing care, as a nurse, you could forget to perform some of the critical care needed by patients. The current findings are in line with Breanna (2018:21), who stated that overcrowding as a workplace stressor led to bad attitudes and communication patterns among nurses, which, in turn, affected care. Overcrowding can also elicit behaviours perceived as uncaring towards the patients and family members who accompany them to the health facility. Examples of behaviours that lack compassion or caring as perceived by patients and their family members include callousness, impatience, being rude and various non-verbal expressions, such as not smiling.

Momeni et al. (2018:14), in their study, stated that large amounts of patient overcrowding affect patients care negatively. Patients who needed CT scans had to wait for three hours or more as there was a long queue.

5.6.1.2 Patients' risk of infections

Findings from this study revealed that patients are prone to hospital infections when there are overcrowding. When the ward is overcrowded, it is difficult for patients to maintain one to 1, 5-metre social distance, one of the protocols in place to prevent the spread of COVID-19 as they are on the floor, putting them at risk of acquiring hospital infections. This is supported by Fischer et al. (2019:4), who found the rapid global spread of nosocomial infection as a serious global health risk associated with the contact in the health care system. The authors further stated that overcrowding was

formerly described as a promoter of nosocomial infections due to the limited distance between patients' beds. Prevention of these infections in an overcrowded ward is thus a challenge, and the negative impact of bed-to-bed distancing is obvious (Fischer et al., 2019:4).

Another study by Fraser, Mwatondo, Yewande, Jay, Varma and Villas (2018:477), found that overcrowding has increased adverse work environment, the outcome of stresses and doughty on work value and disease outbreak is a major health concern worldwide and contributes to nosocomial infections (Fraser et al., 2018:477). Similarly, Lin and Hsieh (2019: 44) found that disease increases the risk of patients' infections.

5.6.2 Staff related effects

The impacts of patient overcrowding on staff include nurse's fatigue, poor recording and nurse's harassment.

5.6.2.1 Nurses fatigue

Nurse's fatigue was revealed in this study due to patient overcrowding. In these circumstances, employees work very hard without rest periods. Nurses try to cover all the work expected, and when they do not achieve their expectations, they suffer from emotional and physical tension; sometimes they do things which are unethical. These study findings were supported by research by Chen and Liang (2018:62), who found that high workload, unsupportive work settings and inability to achieve personal goals related to burnout. Nurses are susceptible because of stressors such as overcrowding of patients in the hospital wards. Nurses fatigue increases as a result of pressure related to increased patients' admission and decreased discharge. Participants, in general, reported the negative impact of overcrowding on nurses.

Joshua, Chehab and Salim (2020:232) also attest to these findings by revealing that there is high stress among employees during patient overcrowding, specifically due to the high workload.

Participants revealed that nurses have to care for many patients when the ward is overcrowded. In the struggle to meet this expectation, they become exhausted. Sometimes they are tired when they finish and do not feel like coming to work the following day. These findings are in line with Xie, Yue and Wang (2021:23), who revealed that hospitals worldwide are experiencing a growing epidemic of aggressive,

escalating and violent patients and visitors. During overcrowding, nurses' fatigue is a consequence for the medical professions and health care organisations. Tired nurses do not provide care effectively to the patients, putting patients at risk of poor quality care (Xie et al., 2021:23).

5.6.2.2 Poor recording

The findings of this study also reveal poor recording as an effect of overcrowding. Nurses are expected to document all treatments for each patient. When there is overcrowding, this is difficult. According to Takalani et al. (2018:40), patient records provide details of care and are used as communication among the multidisciplinary team. Nurses are expected to continue with their normal routine of provision of care and record the care rendered to patients. The increased numbers of patients increase the nurses' workload and compromise accurate recording, putting nurses at risk of a wide range of legal claims (Takalani et al., 2018: 40).

Research by Cornok (2019:32) is in line with the current findings. The study revealed why health care records exist, with the most significant being for the clinical benefit of the patients. It is probably true to say that no health care practitioner set out to create poor records. His study demonstrated that nurses did not have time to document treatment because of other demands, such as being too busy and having too many patients under their care. Poor record-keeping can hamper communication both with patients and other health care team members (Cornok, 2019:32).

5.6.2.3 Nurses harassment

Participants also revealed during the interviews that they experienced harassment and verbal abuse as a result of overcrowding of patients. It was reported that nurses were harassed by patients and their relatives. When the ward is full, nurses have to attend to many patients at the same time and meet their expectations and those of their relatives. Delays in such care result in patients and relatives feeling ignored or staffs are not working and start to harass them. Alsaleem et al. (2018:186) also found that workplace violence in the health system, which includes verbal threats, physical assault and verbal aggression, is common and nurses are at high risk of such violence frequently perpetrated by patients and visitors. The cause of workplace violence, as

perceived by nurses, was lack of education, long waiting times related to staff shortages and overcrowding.

The incidence of workplace violence among nurses is correlated with nurse's burnout; most nurses reported violent incidents, harassment, physical attacks and verbal aggression by patients and their family members, caring for male patients by females increase the risk of sexual assault on nurses (Chen & Liang, 2018:63).

5.7 Study recommendations and limitations

5.7.1 Introduction

The previous section discussed the study findings, and this section presents the proposed recommendations and limitations.

The study of determinants of patient overcrowding has revealed many factors which require

5.7.2 Recommendations to the Department of Health

This study proposes the following recommendations to the Department of Health:

- Developing policies for the patients' referral system to reduce poor continuum of care for patients and overcrowding of hospitals.
- Developing and increasing human resources to strengthen and grow the knowledge and skills, and abilities of employees.
- Increasing human resources by employing qualified nurses trained in the province rather than letting them go to other areas.
- Providing enough equipment to provide quality patient care to cut costs caused by patients' overcrowding while waiting for test results.
- Support for nurses by management is of paramount importance to create a positive working environment and positive patient outcomes to strengthen the integration of safe, effective and high-quality patient care.
- In-service education programmes and access to various workshops to develop nurse's interpersonal skills.
- Nurses must be supported through realistic expectations of their performance and abilities and reassured of the implementation of just culture principles for safe practice.

- Getting health professionals on board to improve patient flow to be implemented and maintained.
- Clearly defined policies on admission, discharge and transfer of patients.

5.7.3 Recommendations for community

Recommendations for the community to include:

- Educate the community on the PHC system and its usage and avoid self-referral to the hospital.
- Make information available regarding hospital services and procedures to prevent inpatient and staff harassment.
- Inform the public about hospital bed occupancy and the number of vacant beds.
- Educate patients and their families by involving them more in decision making and discussing alternative options for treatment.

5.7.4 Recommendations for further research

Recommendations for further research include the following:

- Investigate other hospitals regarding determinants of patient overcrowding to gather more information that might have been missed in this study.
- Examine the impact of patient overcrowding on managers and medical practitioners.
- Establish strategies to reduce the impact of stressors and explore the coping strategies specific to staff working in these professions.
- Research burnout and compassion fatigue in the context to identify those in vulnerable positions.
- Studies into larger populations using the quantitative approach will assist in making objective conclusions.

5.8 Study limitations

This study employs a qualitative approach and findings interpreted within the subjective realm inherent to qualitative research. This study focuses on perceptions of professional and enrolled nurses working in the regional hospital of Vhembe District in the Limpopo Province, which is a limitation of this study. Similar research might produce different findings if conducted in another area. Therefore, findings cannot be generalised to other regional, district, provincial or tertiary hospitals.

5.9 Conclusion

This chapter discussed the findings in relation to the published literature and the limitations and provided recommendations specific to the main findings of the study. This study aimed to explore the determinants of overcrowding in the regional hospital of Vhembe District in the Limpopo Province in order to recommend ways of preventing overcrowding and improving quality patient care. Several determinants have been revealed, including institutional factors, behavioural factors, and diseases outbreak.

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ANNEXURE A: APPROVAL LETTER FROM UNIVERSITY HIGHER DEGREE COMMITTEE

UNIVERSITY OF VENDA

OFFICE OF THE DEPUTY VICE-CHANCELLOR: ACADEMIC

TO : MR/MS M. RAULISA

SCHOOL OF HEALTH SCIENCES

FROM: PROF. J.E CRAFFORD

DEPUTY VICE-CHANCELLOR: ACADEMIC

DATE : 20 APRIL 2021

DECISIONS TAKEN BY UHDC OF 20th APRIL 2021

Application for approval of Masters Proposal Report in Health Sciences: **M. Raulisa (11521426)**

Topic: "Determinants of Overcrowding in the Regional Hospital of Vhembe District, Limpopo Province."

Supervisor	UNIVEN	Prof. N.H Shilubane
Co-supervisor	UNIVEN	Dr. J.T Mabunda

UHDC approved Masters proposal

PROF. J.E CRAFFORD
DEPUTY VICE-CHANCELLOR: ACADEMIC

ANNEXURE B: ETHICAL CLEARANCE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Mrs M Raulisa

STUDENT NO:
11521426

PROJECT TITLE: **Determinants of overcrowding in the regional hospital of Vhembe district, Limpopo province.**

ETHICAL CLEARENCE NO: SHS/20/PDC/48/2501

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Prof NH Shilubane	University of Venda	Supervisor
Dr JT Mabunda	University of Venda	Co- Supervisor
Mrs. M Raulisa	University of Venda	Investigator – Student

ype: Masters Research
Risk: Minimal risk to humans, animals or environment
Approval Period: January 2021 – January 2023

The Human and Clinical Trails Research Ethics Committee (HCTREC) hereby approves your project as indicated above.

General Conditions
While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following:

- The project leader (principal investigator) must report in the prescribed format to the REC:
  - Annually (or as otherwise requested) on the progress of the project, and upon completion of the project
  - Within 48hrs in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
  - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the REC. Would there be deviation from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date, a new application must be made to the REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the REC retains the right to:
  - Request access to any information or data at any time during the course or after completion of the project
  - To ask further questions, Seek additional information, Require further modification or monitor the conduct of your research or the informed consent process.
  - withdraw or postpone approval if:
  - Any unethical principles or practices of the project are revealed or suspected
  - It becomes apparent that any relevant information was withheld from the REC or that information has been false or misrepresented.
  - The required annual report and reporting of adverse events was not done timely and accurately.
  - New institutional rules, national legislation or international conventions permit necessary

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE
Date Considered: November 2020

Name of the HCTREC Chairperson of the Committee:

Signature:

UNIVERSITY OF VENDA
OFFICE OF THE DIRECTOR
RESEARCH AND INNOVATION
2021 -11- 02
Private Bag X5050
Thohoyandou 0950

ANNEXURE C: APPLICATION FOR PERMISSION TO CONDUCT THE RESEARCH FROM DEPARTMENT OF HEALTH

P.O. Box 113

Tshakhuma

0951

Department of Health

Private Bag 9483

Polokwane

0700

Application for conducting a research project at a regional hospital of Vhembe District Limpopo Province

I hereby apply to conduct a research project in a regional hospital of Vhembe District of Limpopo Province on the topic "**Determinants of overcrowding in the regional hospital of Vhembe District, Limpopo Province".**

Objectives: The objectives of this study are:

- To explore and describe the determinants of patient overcrowding in the regional hospital of Vhembe District, Limpopo Province.
- To explore the impact of patient overcrowding in the regional hospital of Vhembe District, Limpopo Province

Yours faithfully

Raulisa M: contact no: 0720347645

ANNEXURE D: APPROVAL LETTER FROM DEPARTMENT OF HEALTH

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

Department of Health

Ref	:	LP_2021-04-002
Enquires	:	Ms PF Mahlokwane
Tel	:	015-293 6028
Email	:	Phoebe.Mahlokwane@dhsd.limpopo.gov.za

Mulalo Raulisa

PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES

Your Study Topic as indicated below;

Determinants of overcrowding in the regional hospital of Vhembe district, Limpopo province

1. Permission to conduct research study as per your research proposal is hereby Granted.
2. Kindly note the following:
   a. Present this letter of permission to the institution supervisor/s a week before the study is conducted.
   b. In the course of your study, there should be no action that disrupts the routine services, or incur any cost on the Department.
   c. After completion of study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   d. The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   e. The approval is only valid for a 1-year period.
   f. If the proposal has been amended, a new approval should be sought from the Department of Health
   g. Kindly note that, the Department can withdraw the approval at any time.

   Your cooperation will be highly appreciated

Head of Department — Date: 18/05/2021

Private Bag X9302 Polokwane
Fidel Castro Ruz House, 18 College Street. Polokwane 0700. Tel: 015 293 6000/12. Fax: 015 293 6211.
Website: http/www.limpopo.gov.za

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ANNEXURE E: APPLICATION LETTER OF PERMISSION TO CONDUCT THE RESEARCH VHEMBE DISTRICT DEPARTMENT OF HEALTH

P.O Box 149

Tshakhuma

0951

Vhembe District

Department of Health

Private bag x 924

Thohoyandou

Request to conduct research at Vhembe Regional Hospital

I am writing this letter to request permission to conduct the research at a Regional Hospital. My subject is: **Determinants of overcrowding in the regional hospital of Vhembe District, Limpopo Province.**

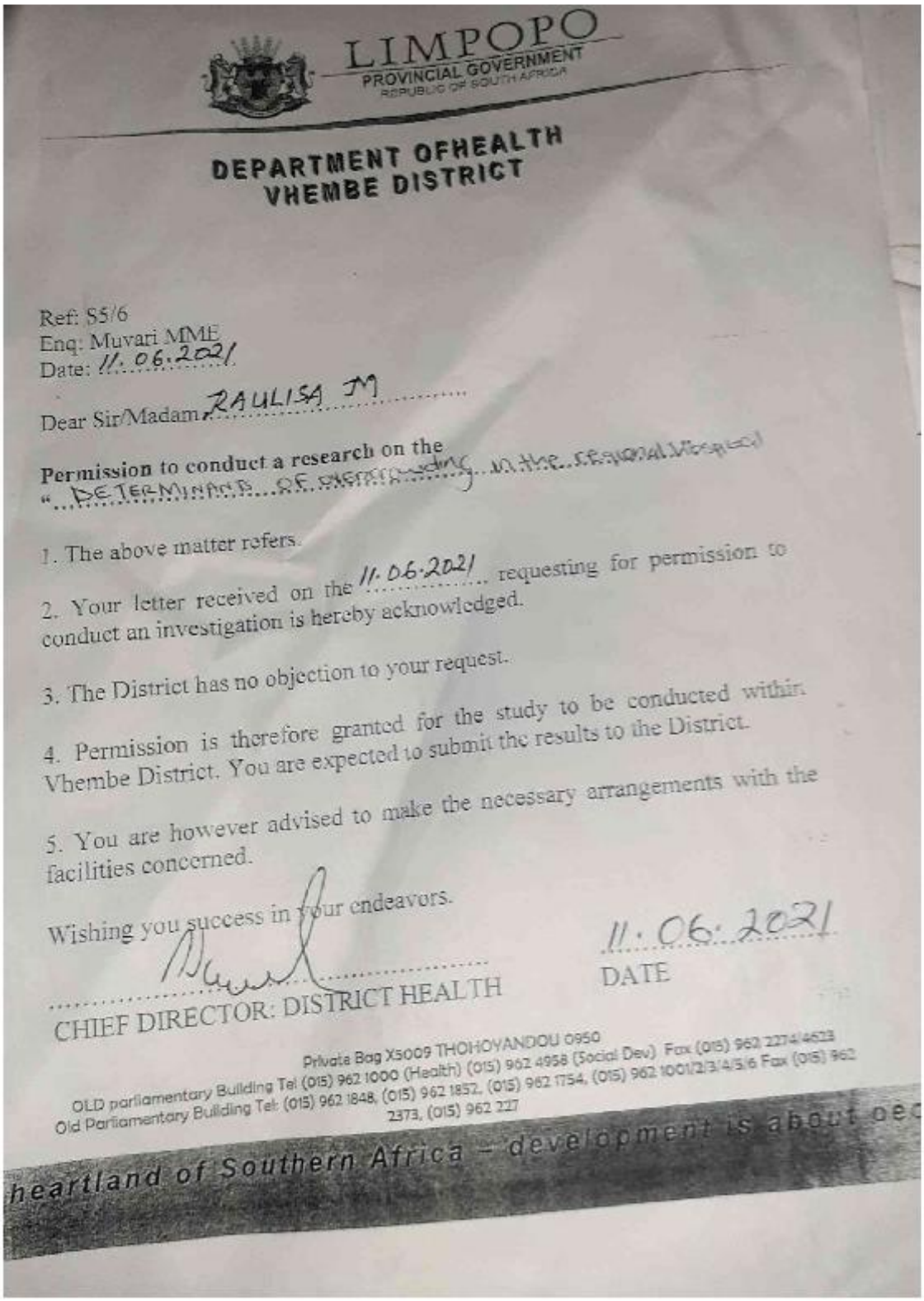
Objectives of the study are:

- To explore and describe the determinants of patients overcrowding in the regional hospital of Vhembe District, Limpopo Province.
- To explore the impact of patients overcrowding in the regional hospital of Vhembe District, Limpopo Province.

Yours faithfully

Raulisa M: contact: 0720347645

ANNEXURE F: APPROVAL LETTER FROM VHEMBE DISTRICT



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OFHEALTH
VHEMBE DISTRICT

Ref: S5/6
Enq: Muvari MME
Date: 11.06.2021

Dear Sir/Madam RAULISA TM

Permission to conduct a research on the
"...DETERMINANTS OF ENGAGING IN HIV SEXUAL RISK..."

1. The above matter refers.

2. Your letter received on the 11.06.2021 requesting for permission to conduct an investigation is hereby acknowledged.

3. The District has no objection to your request.

4. Permission is therefore granted for the study to be conducted within Vhembe District. You are expected to submit the results to the District.

5. You are however advised to make the necessary arrangements with the facilities concerned.

Wishing you success in your endeavors.

.....
CHIEF DIRECTOR: DISTRICT HEALTH

11.06.2021
DATE

Private Bag X5009 THOHOYANDOU 0950
OLD parliamentary Building Tel: (015) 962 1000 (Health) (015) 962 4958 (Social Dev) Fax (015) 962 2274/4623
Old Parliamentary Building Tel: (015) 962 1848, (015) 962 1852, (015) 962 1754, (015) 962 1001/2/3/4/5/6 Fax (015) 962 2373, (015) 962 227

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ANNEXURE G: APPLICATION LETTER OF PERMISSION FROM TSHILIDZINIHOSPITAL

P.O. Box 149

Tshakhuma

0951

Tshilidzini Hospital

Private bag x 924

Shayandima

0945

Request to conduct research at Vhembe Tshilidzini Hospital

I am writing this letter to request permission to conduct the research at a Regional Hospital. My subject is: **Determinants of overcrowding in the regional hospital of Vhembe District, Limpopo Province.**

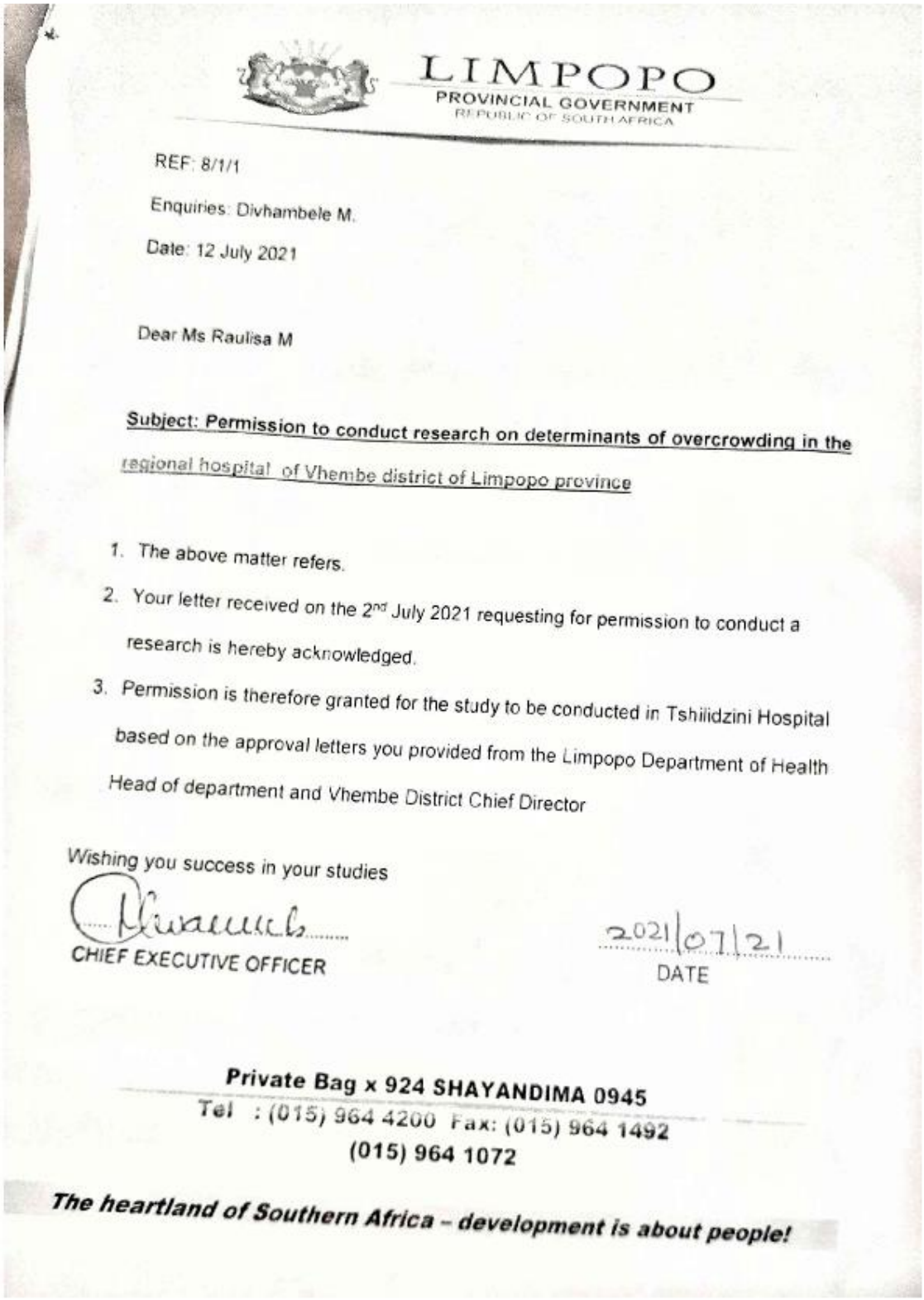
Objectives of the study are:

- To explore and describe the determinants of patients overcrowding in the regional hospital of Vhembe District, Limpopo Province.
- To explore the impact of patients overcrowding in the regional hospital of Vhembe District, Limpopo Province
- The study may benefit the Department of Health as those recommendations may reduce the overcrowding of patients in Vhembe regional hospital

Yours faithfully

Raulisa Contact number: 0720347645

ANNEXURE H: APPROVAL LETTER FROM TSHILIDZINI HOSPITAL



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

REF: 8/1/1

Enquiries: Divhambele M.

Date: 12 July 2021

Dear Ms Raulisa M

Subject: Permission to conduct research on determinants of overcrowding in the regional hospital of Vhembe district of Limpopo province

1. The above matter refers.
2. Your letter received on the 2nd July 2021 requesting for permission to conduct a research is hereby acknowledged.
3. Permission is therefore granted for the study to be conducted in Tshilidzini Hospital based on the approval letters you provided from the Limpopo Department of Health Head of department and Vhembe District Chief Director

Wishing you success in your studies

CHIEF EXECUTIVE OFFICER

2021/07/21
DATE

Private Bag x 924 SHAYANDIMA 0945
Tel : (015) 964 4200 Fax: (015) 964 1492
(015) 964 1072

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ANN**EXURE I: PARTICIPANTS INFORMATION SHEET**

LETTER OF INFORMATION

Title of the Research Study : Determinants of overcrowding in the regional hospital of Vhembe District, Limpopo Province

Principal Investigator/s/ researcher :Raulisa Mulalo: Baccalaures curationis nursing science)

Co-Investigator/s/supervisor/s :(N.H. Shilubane, PhD)

:(J.T. Mabunda, PhD)

Brief Introduction: There is overcrowding of patients in regional hospitals in developing countries, mostly in the tropics and Subtropics, including Africa, India Indonesia and South Africa.

Purpose of the study: The purpose of the study is to explore the determinants related to patient overcrowding in a regional hospital of Vhembe District in the Limpopo Province.

Outline of the Procedures: Data will be collected by means of individual interviews. The researcher will make appointments with the participants for the interviews. Interview will be conducted for 30-45minutes, will be conducted in a quite environment in the selected hospital. **Inclusive criteria:** will be all males and female registered and enrolled nurses of the age of 21-65yrs with more than six months working in the regional hospital. **Exclusive criteria**: all nurses working in the wards and not selected to participate in the study, nurses with less than six months experiences of working in the regional hospital as they will be less familiar with the overcrowding and its determinants.

Risks or Discomforts to the Participant : None

Benefits : None

Reason/s why the Participant May Be Withdrawn from the Study: There will be no consequences for the participants should they choose to withdraw.

Remuneration : No remuneration to be received by the participants

Costs of the Study : No fee will be required from the participant for the study

Confidentiality : The information gathered during research will be used for the purpose of research. If the participants are interested in the findings it can be made available to them. In this study the information given will not be linked to the participants, their identity will remain anonymous as numbers will be assigned instead of names

Research-related Injury : No injuries should occur during the cost of the study.

Persons to Contact in the Event of Any Problems or Queries:

(Supervisor: Prof N.H. Shilubane, Contact number:015 962 8713, Co-Supervisor: Dr J.T. Mabunda, contact number: 0828426328, Researcher: M. Raulisa, contact number: 0720347645).

ANNEXURE J: INFORMED CONSENT FOR PARTICIPANTS

Statement of Agreement to Participate in the Research Study:

I hereby confirm that I have been informed by the researcher, (*RAULISA MULALO*), about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: SHS/20/PDC/48/2501

I have also received, read and understood the above written information (*Participant Letter of information*) regarding the study.

I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.

In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.

I may, at any stage, without prejudice, withdraw my consent and participation in the study.

I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

I, …… …… …… ……

(*Name of researcher*) herewith confirm that the above participant has been fully

Informed about the nature, conduct and risks of the above study.

Full Name of Participant Date Time Signature

I,……. …… ……

(Name of researcher), herewith confirm that the above participant has been fully

informed about the nature, conduct and risks of the above study.

Full Name of Researcher:

……. Date: …… Signature:……

Full Name of Witness (If applicable)

……. Date ……Signature……..……..

Full Name of Legal Guardian (If applicable)

…….Date……..……Signature……..

Please note the following:

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level- use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counseling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. a wrong date or spelling mistake, a new document has to be completed. The incomplete original document has to be kept in the participant's file and not thrown away, and copies thereof must be issued to the participant.

References:

Department of Health: 2004. *Ethics in Health Research: Principles, Structures and Processes*

http://www.doh.gov.za/docs/factsheets/guidelines/ethnics/

Department of Health. 2006. *South African Good Clinical Practice Guidelines*. 2nd Ed. Available at:

http://www.nhrec.org.za/?page_id=14

ANNEXURE K: INTERVIEW GUIDE

The central questions which facilitated the discussion with the participants are:

‘What do you think are the causes of patient overcrowding?

‘What are the impacts of overcrowding of patients in your hospital?'

These questions had enabled a better understanding of these factors and the participants’ personal experiences.

ANNEXURE L: SAMPLE INTERVIEW TRANSCRIPT

PARTICIPANT NO 1

Researcher: Good afternoon.

Participant: Good afternoon to you too and how are you?

Researcher: quite well and you?

Participant: I am fine too.

Researcher: I am Raulisa Mulalo, a registered student at the University of Venda doing master's degree in nursing. My research focuses on the determinants of patient overcrowding and its impact. I want you ask you some questions in relation to my study. Do you agree?

Participant: Yes, I do.

Researcher: As a participant you are not forced to participate in this study. You are

free to withdraw from the study anytime you feel uncomfortable. Any information obtained during our discussion will not be shared with anyone except my supervisors. Kindly note that publication of the findings of the study will be anonymous.

Participant: Ok, no problem.

Researcher: I want to know if you have come across overcrowding of patients in the ward while providing care.

Participant: Yes, we experience overcrowding almost every day because you will find that the ward is full with no empty beds and not knowing where to put those other patients who are coming in.

Researcher: What do you think might be the cause of this?

Participant: I think there are several factors that contribute to overcrowding, such as patients who are still waiting to receive blood results or insertion of intercostal catheter drains and some waiting for X-rays.

Researcher: Alright, does it mean it takes too long for the patients to get their results.

Participant: Sometimes results can be available after two to three days for instance,

if the patient has been tested on Friday he or she must expect to get them on Monday for review by the doctor since on weekend the doctor on call only review the results of those who are classified as emergency.

Researcher: Alright, does it mean Saturday and Sunday are not working days?

Participant: Yes, they are not working days and the doctor who is on call is the only one available.

Researcher: Is the doctor on call not eligible to review the blood test results on weekend?

Participant: He is legible but the results take time to be released and he will be the only one reviewing the results of all the patients in the hospital and some of the blood tests are conducted at provincial hospital.

Researcher: How does this contribute to crowding?

Participant: It delays patients care and discharges because the doctor cannot discharge the patient without reviewing the blood results first, especially on weekends, as he will be the only one to review those results of all patients. Once the patients are not being reviewed they will remain in the hospital and other patients will also be coming to the hospital this will lead to overcrowding.

Researcher: Why is there one doctor working on weekend?

Participant: Because of shortage of staff.

Researcher: What are the impacts of overcrowding of patients in your hospital?

Participant: It is really distressing and become challenging to help patients, because you will find that even the ward is full and no bed for other patients in the ward.

Meantime other patients will be flooding in. Furthermore, it is very difficult to work effectively under these stressful conditions; in addition, we are unable to provide high quality patient care because some patients will be lying helplessly on the floor. As a result of this, patients are prone to infections and their safety is compromised, especially now when the country is experiencing the resurgence of covid-19.

Researcher: How do you cope with shortage of staff?

Participant: As health care professional we find ourselves overburdened by work which in turn affects the quality of service provided to patients. For instance, we have to bath some of the patients while providing care to those with emergencies such as head injuries caused by car accident. In addition, staff shortage is a root cause for this scourge.

Researcher: How do you deal with shortage of beds in the wards?

Participant: We provide alternative measures like taking other patients to other wards that have enough space which put patients at risk of infections.

Researcher: Is there anything that you want to say before we end the interview, including questions?

Participant: No

Researcher: If you don't have questions, thank you very much for your time.

Participant: Thank you too.

ANNEXURE M: DECLARATION OF PROFESSIONAL EDITING

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22 February 2022

DECLARATION OF PROFESSIONAL EDIT

Document Title: DETERMINANTS OF OVERCROWDING IN THE REGIONAL HOSPITAL OF VHEMBE DISTRICT, LIMPOPO PROVINCE

I declare that I have edited and proofread this document. My involvement was restricted to language usage and spelling, completeness and consistency, referencing style and formatting of headings and layout, captions and Table of Contents. I did no structural re-writing of the content.The writer was provided with the corrections/amendments which required action. The corrected document was subsequently proofread and a number of additional corrections were advised.

The undersigned takes no responsibility for corrections/amendments not carried out in the final copy submitted for examination purposes.

Sincerely,

Marion Pfeiffer

Freelance Copy-editor and Proofreader
Intermediate Member, CIEP UK
Full member, PEG and SAFREA

Professional EDITORS Group