EXPLORING THE EXPERIENCES OF PATIENTS ON CORONARY ARTERY DISEASE TREATMENT AT ROMAN CATHOLIC HOSPITAL-CARDIAC CENTER, WINDHOEK, NAMIBIA.

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ABSTRACT

Coronary artery disease (CAD) is a significant global health concern, contributing to high mortality and disability rates. In Namibia, CAD accounts for 7.20% of total deaths, driven by urbanization, lifestyle changes, and rising comorbidities such as hypertension, diabetes, and obesity. This study explored the experiences of CAD patients receiving treatment at the Roman Catholic Hospital-Cardiac Centre in Windhoek, Namibia, to inform improved management strategies. Qualitative approach with a descriptive, exploratory, and phenomenological design was used. A qualitative phenomenological approach was used. Participants were purposefully sampled until data saturation was achieved, which occurred with a final sample of six participants. Data was collected through unstructured interviews and analyzed using Tesch's qualitative data analysis method. The findings revealed two (2) main themes that are positive and negative experiences of patients on the treatment of CAD; five (5) themes and eleven (11) sub-themes. The positive experience being support system comprising family, friends and health care system, and lifestyle modification. Lifestyle changes and strong family support were found to be crucial in improving patient outcomes. The negative experiences are emotional factors including stress and pain; risk factors including comorbidities; and the consequences such as physical limitations and financial crisis. The study findings will inform the policy makers and stakeholders to develop preventative and management strategies that will enhance patient outcome. Patients on coronary artery disease treatment have both negative and positive experiences that affect various aspects of their life and influence outcome. The study recommends educational programs and nationwide public health campaigns to raise awareness about CAD symptoms, risk factors, and prevention strategies.

Key words: Health, Lifestyle changes, Patient experiences, Treatment

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TABLE OF CONTENTS

ABSTRACT i

LIST OF CONFERENCE (S) PROCEEDING/PUBLICATION (S) ii

LIST OF TABLES viii

LIST OF ABBREVIATIONS AND /OR ACRONYMS ix

ACKNOWLEDGEMENTS x

DEDICATION xi

DECLARATION xii

CHAPTER 1 1

INTRODUCTION AND BACKGROUND OF THE STUDY 1

1.1 Introduction 1

1.2 Background of the study 3

1.3 Problem Statement 5

1.4 Purpose of the study 6

1.5 Objective of the study 7

1.6 Significance of the study 7

1.7 Philosophical assumptions of the study 7

    1.7.1 Ontological assumption 7

    1.7.2 Epistemological assumption 9

    1.7.3 Axiological assumption 9

    1.7.4 Methodological assumption 10

1.8 Theoretical framework 11

1.8.1 Transactional model of stress and coping 11

1.9 Limitation 12

1.10 Delimitation 12

1.11 Definition of concepts 13

1.12 Outline of Chapters 16

1.13 Chapter summary 16

CHAPTER 2 18

LITERATURE REVIEW 18

2.1 Introduction 18

2.2 Description and Pathophysiology of Coronary Artery Disease 19

2.3 Risk Factors for Coronary Artery Disease 21

2.4 Non-modifiable risk factors 21

2.4.1 Age 21

2.4.2 Gender 22

2.4.3. Family History 22

2.5 Modifiable risk factors 23

2.5.1 Hypertension (high blood pressure) 23

2.5.2 Smoking 23

2.5.3 Types 2 Diabetes Mellitus (T2DM) 23

2.5.4 Obesity 24

2.5.5 Dyslipidemia (Abnormal Cholesterol Levels) 24

2.5.6 Sedentariness (Lack of Physical Activity) 25

2.6 Other contributing Factors 25

    2.5.1 Lived Experience of Patients with Coronary Disease. 25

2.6 Theoretical Framework 29

2.7 Conceptual Framework 32

2.6 Chapter summary 33

CHAPTER 3 35

RESEARCH METHODOLOGY 35

3.1 Introduction 35

3.2 Research Design 35

    3.2.1 Exploratory Design 36

    3.2.2 Descriptive Design 36

    3.2.3 Phenomenological Design 37

3.3 Study Setting 38

3.4 Study Population 38

    3.4.1 The inclusion criteria 38

    3.4.2 The exclusion criteria 38

3.5 Sample and Sampling method 39

3.6 Research instruments 39

3.7 Trustworthiness 40

    3.7.1 Credibility 41

    3.7.2 Dependability 42

    3.7.3 Conformability 43

3.7.4 Transferability 44

3.8 Pilot Study.. 45

3.9 Procedure for data collection 45

3.10 Data analysis 46

3.11 Ethical Consideration.. 48

3.12 Permission to Conduct Research.. 48

3.13 Principle of Respect 48

3.14 Principle of non-maleficence 50

3.15 Principle of beneficence.. 50

3.15 Principle of non-maleficence 51

3.16 Principle of justice.. 51

3.17 Chapter summary 51

CHAPTER 4 53

PRESENTATION AND DISCUSSION OF FINDINGS 53

4.1. Introduction.. 53

4.2 Description of study participants 54

4.3 Demographic characteristics and gender differences in CAD 55

4.4 Presentation of the study findings.. 56

4.4.1 Main theme 1: Positive experiences of patients on CAD treatment 57

4.4.2 Main theme 2: Negative experiences of patients on CAD treatment........ 67

4.5 Discussion and literature control.. 75

4.6 Chapter Summary.. 78

CHAPTER 5 80

CONCLUSION AND RECOMMENDATIONS 80

5.1 Introduction 80

5.2 Conclusion 80

5.2.1 Objective 1: Explore the experiences of patients on the treatment of coronary artery disease at Roman Catholic Hospital 80

5.2.2 Objective 2: Describe the experiences of patients on the treatment of coronary artery disease at Roman Catholic Hospital 81

5.3 Recommendations 82

5.3.1 Healthcare Providers 82

5.3.2 Policymakers 83

5.3.3 Patient Empowerment 84

5.3.4 Future Research 84

5.4 Summary of the Chapter 85

REFERENCES 87

APPENDIX 100

Appendix 1: Ethical Clearance Certificate UNAM 100

Appendix 2: Letter of granted permission MOHSS 101

Appendix 3: Permission from letter from the RCH management 102

Appendix 4: Consent form for participants 103

Appendix 5: Questionnaire 105

LIST OF TABLES

Table 3.1: Summary of criteria and measures taken to ensure trustworthiness......... 44

Table 4.1: Characteristics of the study participants 54

Table 4.2: Themes and sub-themes.. 57

LIST OF ABBREVIATIONS AND /OR ACRONYMS

CVDs	Cardiovascular Diseases
CAD	Coronary Artery Disease
CDC	Centers for Disease control and prevention
ESC	European Society of Cardiology
HAIC	Health Africa International Conference
MOHSS	Ministry of Health and Social Services
RCH	Red Cross Hospital
WHO	World Health Organization
UNAM	University of Namibia
US	United State

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DEDICATION

This work is dedicated to my God, whose unwavering guidance and grace have been my source of strength and inspiration throughout this journey. It is also devoted to my cherished daughter, Faith Megameno Amunyela, and my supportive friends, whose love and happiness bring meaning and purpose to my life. To my dear father, Mr. Amapindi Efraim, who instilled in me the belief that education is a powerful tool and a woman's greatest shields his constant pride, patience, kindness, and love, even during difficult times, continue to inspire me to persevere.

Finally, I dedicate this thesis to the memory of my late mother, Ms. Ester Kaapawanwa Nakale, and my late grandmother, Mrs. Nambahu. Their endless love, profound wisdom, and unwavering encouragement have been a beacon of guidance in my life. Though they are no longer with us, their enduring legacy remains a source of comfort and strength every day.

DECLARATION

I, Letta k. Amapindi, hereby declare that this study is my own work and is a true reflection of my research, and that this work, or any part thereof has not been submitted for a degree at any other institution. No part of this thesis/dissertation may be reproduced, stored in any retrieval system, or transmitted in any form, or by means (e.g. electronic, mechanical, photocopying, recording or otherwise) without the prior permission of the author, or The University of Namibia in that behalf. I, Letta k. Amapindi, grant The University of Namibia the right to reproduce this thesis in whole or in part, in any manner or format, which The University of Namibia may deem fit.

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Name of Student **Signature** **Date**

CHAPTER 1

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

Coronary artery disease (CAD) occurs when the coronary arteries (those that supply oxygen-rich blood to the heart) become narrow and blocked, often due to the buildup of plaques primarily made of cholesterol and other substances [1]. These narrowing limits the blood supply to the heart muscle, which can cause serious problems, including heart attacks and heart failure. CAD usually develops over several decades, thereby allowing numerous opportunities for early intervention and prevention. According to Malakar et al. [2], researchers, physicians, and policy makers are exerting great endeavors to improve the understanding and management about the disease.

As Evan and Tippins note, CAD involves degeneration of the large arteries that feed the blood to the heart often because of thickening, narrowing, or blockage. This accumulation of plaque on the walls of your arteries is called atherosclerosis. Less blood flowing through the heart means less oxygen, and that means angina (chest pain) or, in the worst cases, a heart attack. The presentation may differ between individuals, chest pain being the most common. Other symptoms include dyspnea, fatigue and sometimes nausea or vomiting [4].

Reduced blood flow caused by CAD may delete several heart diseases, such as angina, myocardial infarction, heart failure (problems with pumping), and cardiac arrhythmias, abnormal heartbeats [3]. CAD has multiple causes, and among them are genetics, diet, lifestyle, and comorbid conditions. Approximately 80% of CAD cases are attributed to behaviors such as smoking, unhealthy diet, physical inactivity and harmful use of alcohol (WHO, 2019).

Of adult CVSs, CAD is described to be the most dominant and it is associated with risk factors which include high blood pressure, high cholesterol, smoking, diabetes, obesity, inactivity, family history, and aging [3]. Insulin levels and obesity may be mediated in part by these factors; for example, Syrian-derived hamsters are at high risk because they develop obesity, hyperinsulinemia, and glucose intolerance (Messing et al, unpublished observation). 8 Harrington [5] emphasizes these risk factors and their effect on both the incidence and mortality of CAD, using epidemiological data. It is important to intervene lifestyle contributors as a means of preventing disease progression. Modifiable risk-mitigating behaviors: the adoption of a healthy diet, moderate exercise, smoking cessation, and achievement of healthy blood pressure and cholesterol levels, offer substantial protection from the formation of CAD [2].

CAD is associated with lifestyle pattern of an individual which is most important for the onset of the disease. The risk of developing cardiovascular disease is higher in those who smoke, have a poor diet, are inactive, have high levels of cholesterol, and have high blood pressure [6]. One of the most prevalent forms of heart disease is CAD, which can cause symptoms such as angina, stroke and heart attack. It is also associated with other forms of heart disease e.g. arrhythmia, congestive heart failure, congenital heart defect, and even disease in general of the cardiovascular system [7].

A comprehensive approach that includes both medical and lifestyle interventions is necessary to successfully prevent and treat CAD. Decreasing the global impact of this lethal disease is paramount to human health worldwide and can be achieved via public perception of risk and impetus for healthier behavior, and improving access to health care (WHO, 2019). These statistics emphasize the need for early detection, prevention and integrated care to tackle the increasing worldwide and national burden of CAD. Little is known about how patients treated Red Cross Hospital (RCH) in Windhoek, Namibia, cope with their disease, therefore a study so as to explore the experiences of these patients on treatment is necessary. Increasing knowledge, healthy behavior and access to healthcare are effective evidence-based intervention strategies to lower CAD mortality and for promoting patient outcomes.

1.2 Background of the study

Coronary artery disease (CAD) continues to be a major global health burden and a leading cause of death. Salahshoori et al. [8] emphasize the deep public health consequences of CAD in developed as well as in developing countries, being a key determinant of global morbidity and mortality. Many poor countries with maternal health and malnutrition-related diseases falling by some 40% and life expectancy in the last forty years increasing from age 59 to age 65, leading to aging populations. CAD and other CVDs can significantly compromise quality of life. Globally, CVD was responsible for an estimated 17.8 million deaths and 35.6 million years lived with disability in 2017 [20]. Most of these deaths took place in low- and middle-income nations, where access to preventive health care is usually poor [20]. There are 26.5 million patients suffering from CAD in the world, and approximately 3.8 million new cases of CAD are diagnosed annually, as reported by the European Society of Cardiology (ESC). The disease is also highly lethal 50–55% of individuals die within

3 years after diagnosis, representing a considerable burden on public health system [24].

By 2021, deaths due to CVDs, including CAD, had risen to about 20.5 million up from 12.1 million in 1990, demonstrating a growing global burden [3]. The World Health Organization (WHO) reported 17.9 million CVD-related deaths in 2019, accounting for 32% of all global deaths, with ischemic heart disease (a form of CAD) responsible for 16% [1]. Projections suggest this number may rise to 23.3 million by 2030 [9], driven by factors such as urbanization, sedentary lifestyles, obesity, and diabetes especially in developing countries. Although CAD is also common in high-income nations [12], risk factors like high blood pressure, high cholesterol, and obesity are widespread.

In the United States, heart disease remains the leading cause of death. Preliminary 2023 data attributes approximately 695,000 deaths to CAD [4]. The age-adjusted mortality rate for CVD was 233.3 per 100,000, a 4% increase from the previous year [4]. The Global Cardiovascular Disease Report [14] estimates that CAD causes about 610,000 deaths annually in the U.S., representing one in four deaths. Financially, CAD places a substantial burden on the healthcare system, with annual costs exceeding $200 billion [15–16]. It affects both men and women, though mortality rates differ by age and ethnicity. For example, white men aged 25–34 have a CAD mortality rate of 1 in 1,000, which rises to 1 in 100 among those aged 55–64 [13].

Regional disparities are also evident. In Northern England and Scotland, CAD death rates are significantly higher than in southern England 70% higher in men and 80% in women [12]. South Asians are another high-risk group with elevated mortality rates [22]. The situation is worsening in developing regions. In Africa, the WHO [1] notes a rise in CAD due to urbanization, poor diet, obesity, and diabetes. Once rare, conditions like hypertension and atherosclerosis are now leading causes of death, with hypertension affecting 27% of Africans and CAD causing 1 in 4 deaths in sub-Saharan Africa. Pevser [23] states that over 20 million annual deaths are caused by CVDs, with developing nations bearing the heaviest burden CAD mortality rates are nearly double those in developed countries [13]. This rising trend underscores the need for stronger prevention and treatment strategies.

Namibia reflects this global trend. WHO data from 2020 shows that CAD accounted for 7.2% of all deaths in Namibia, ranking the country 98th worldwide in CAD mortality with 1,221 deaths that year [27]. This highlights the urgent need for improved prevention, early detection, and effective management across all nations. Despite advances in medical science, CAD remains the leading cause of death globally. Early diagnosis, lifestyle changes, and risk factor management are critical to reducing its toll [21]. Namibia, like other developing countries, is experiencing an increase in obesity, diabetes, and hypertension making proactive cardiac care essential.

1.3 Problem Statement

Coronary artery disease (CAD) remains one of the most prevalent causes of mortality and morbidity worldwide [1]. For instance, Namibia, with a population of approximately 3 million, had a CADM of 5.29%, déjà vu to that of South Africa (5.25%) despite that country’s eight times larger population. In Namibia, CAD was the fourth cause of death of 50 causes in 2016 [1]. The Namibia Heart Centre [27] indicates that CAD diagnosis and surgical procedures (coronary angiograms and bypasses) are on the increase. Namibia has only one public and two privates heart clinics all situated in Windhoek. In 2022, these centers experienced an increase of 85% in national referrals [27]. Patients have started being referred for more aggressive treatment, such as surgery. In the critical care unit of the Roman Catholic Hospital, where the researcher works as a nurse, it has been noticed that most cases return for serious complications like cardiac failure, arrythmia and recurrent chest pain, long before their scheduled follow-up visits. These will generally entail surgical follow-up. Failure to follow post discharge recommendations, which include dietary, physical and lifestyle implications, is a common problem [28]. CAD can deteriorate the heart muscle, which could progress to heart failure and arrhythmias and eventually can cause the damage that is irreversible or become fatal [3]. Because Namibia is relatively small in population, this is particularly alarming. This had driven the researcher to explore the experiential world of the patients who had coronary artery treatment.

1.4 Purpose of the study

This study explored and described the experiences of coronary artery disease patients receiving treatment at the Roman Catholic Hospital Cardiac Centre in Windhoek, Namibia.

1.5 Objective of the study

Objectives summarize the accomplishments a researcher wishes to achieve through the study, and it provides direction to the study as stated by Burn and Grove [8].

The objectives of this study were to:

- Explore the experiences of patients on the treatment of coronary artery disease at Roman Catholic Hospital
- Describe the experiences of patients on the treatment of coronary artery disease at Roman Catholic Hospital

1.6 Significance of the study

This is the overall importance of the study to the researcher, organization, participants and the body of knowledge [27]. This study is significant as it provides information on the experiences of patients undergoing treatment for coronary artery disease and identifies the challenges they face. Moreover, the study will be significant as it provides insights into the local healthcare system's effectiveness, patient's outcomes and potential areas for improvement. Lastly this study might assist the healthcare professionals tailor interventions, enhance patient care, and ultimately contribute to better overall health outcomes for individuals in Namibia suffering from this condition.

1.7 Philosophical assumptions of the study

1.7.1 Ontological assumption

Ontology deals with the assumption of the nature of reality and what can be known about it (Brink et al., 2018). In the context of this study on exploring the experiences of patients with coronary artery disease (CAD) at Roman Catholic hospital-cardiac center, Windhoek, Namibia, the assumption would be most likely be constructivist. In response, Creswell & Poth [29] explained that constructivism theories are the theories by which humans learn through experience, reflection and active engagement. These concepts need to be applied to gain an understanding of the lived experience of CAD patients. It worked through interaction and engagement, to truly understand what it’s like to be in the world of the patients, and this led us to a deeper understanding of it. Here, this approach realizes that there exists no fixed and objective form of reality, but rather the reality is being defined by individual experiences and perceptions.

In the context of CAD patients, a constructivist ontology considers that everyone’s experience about the disease and its treatment is different. The reality of living with CAD differs across individuals due to social support, emotional well-being, cultural background and healthcare access. The study recognizes different realities of what CAD patients perceive to be their illness as opposed to a single, objective reality (Brink et al., 2018). Translated: Reality is not a fixed set of things but experience and the way people perceive them.

A constructivist ontology applied to the patient group of CAD considers that each patient’s experiences of the disease and its treatment are different. Living with CAD is not the same for everyone, from patient’s emotional status to strengths from their social support systems to cultural background to their access to healthcare. According to this, rather than trying to find a single, objective reality of how CAD patients come to understand their affliction, the study would accept that there are many subjective realities [30].

1.7.2 Epistemological assumption.

Epistemology is about the acquisition, understanding and validation of knowledge. This approach is because the knowledge is attained through the interaction between the researcher and the participants. This epistemology does not assume an objective reality to which the researcher simply observes, but neither does it recognize that participants and researchers are separate entities, rather each plays a role in the formation of knowledge [31].

From an explanatory point of view, the study adopts an explanatory approach to study understanding patients' experiences and requires the researcher to go into the patients' narratives deeply and personally empathically. The patient stories need to be interpreted in relation to one another. Thus, the researcher actively contributes to this process, so the insights deriving from patients’ experiences are brought out.

Additionally, the study relies on qualitative methods involving in-depth interviews where the central to the analysis are patients’ voices and personal stories. They enable more in depth and richer understanding of the CAD treatment experience. According to Creswell & Poth [29], the researcher was aware of their own positionality and how their position strengthens or weakens the interpretation of the patients’ experiences, and is conducive (Creswell & Poth [29], foster a collaborative process whereby the subjective realities of both the parties are highlighted.

1.7.3 Axiological assumption

Axiology refers to the role of values and ethics in the research process (Brink et al., 2018) [12]. As stated by Mertens [32], qualitative research, especially those concerning the experiences of patients, not only acknowledges but requires the researcher’s values and biases in the research itself. The researcher must be completely familiar with and transparent for themselves about what they value and their biases to the study design, data collection, and the interpretation of the results. According to Creswell & Poth [29], investigation of patient experiences requires the deeply personal and empathetic aspect (Creswell, 2004), and the researcher must value the emotional, psychological, and social aspects of being ill. Not only does this humanize the research process but also helps to make sure that the patients’ voices are heard and seen in full complexity by the colleagues.

The researcher engaged in continuous self-reflection and kept a reflexive journal to consciously monitor personal values and potential biases. During interviews, an empathetic and non-judgmental stance was maintained to create a safe space for participants to share their authentic experiences. Furthermore, the researcher ensured that the final interpretation and reporting of the data were done in a way that honoured the participants' voices and presented their stories with dignity and respect.

1.7.4 Methodological assumption

This study’s methodological assumption is inductive. It focuses on finding out things from rich data as opposed to testing hypotheses. Its approach is phenomenological or grounded theory. In a phenomenological line of research, the objective is to obtain a grasp of what patients think about their condition and the treatment journey by how they make sense of their condition and treatment journey [33]. Grounded theory, alternatively, is described as a way of generating new theories on the data and is therefore well suited for identifying patterns and constructing conceptual frameworks in relation to patient experiences [34].

The research process consists of data collection and analysis in which the researcher interacts with participants resulting in themes and meanings emerging organically. The continuous flow of data collection and analysis ensures the flexibility of the study, which can provide deep understanding of living with CAD, and further data collection or analysis will further free the study so that it can further understand living with CAD.

1.8 Theoretical framework

Several theoretical frameworks and methodologies have been developed to explain the experience of patients on treatment of the coronary artery disease. This section provides a several key approaches to understand principles of these frameworks and how they can be applied to objectives of this study. The aim of this analysis is to learn more about different experiences of patients that they live through with coronary artery disease and how these experiences might be the basis for designing effective reduction strategies of coronary artery disease.

1.8.1 Transactional model of stress and coping

A valuable framework for understanding what it is like to be a CARID patient is provided by Lazarus & Folkman [35]. Instead, this model highlights the dynamic influences, set of coping mechanisms, and outcome from stressors for patients having a condition, how patients tackle the issues that this condition represents. There are a variety of stressors that impact the lives of CAD patients, including fear of disease progression, changes in lifestyle, and financial burden, which affect their experiences (36). The model goes as follows primary appraisal the significance that patients place on their condition either as a threat or a challenge and secondary appraisal patients assessing their resources and coping options (37). Such problems focused on preventing, alleviating or managing a problem through putting efforts or emotion focused trying to deal with distressing emotions coping strategies are associated with significant differences in psychology such as anxiety, stress and physical such as recovery, quality outcomes [38]. In addition, the model considers the fact that coping mechanisms are dynamic and change over time as individual circumstances and contextual factors, such as cultural and socioeconomic elements, exist within the context of Namibia. The study can search for the factors associated with positive or negative experience and so inform interventions that improve the well-being and treatment outcome for CAD patients.

1.9 Limitation

Specific limitations of the study that might affect the breadth and applicability of the outcomes are noted. Depending on time or resource limitations, the findings may not be applied broadly due to the sample size which may be limited. In addition, participants have a risk of reporting details or responding in ways they expect because they are concerned about being judged. Additionally, the research involves patients who must remember earlier experiences, which makes the data accuracy subject to issues related to memory. For example, a limited amount of time for collecting data can hinder the ability for the interaction to be more in depth with the participants. Additionally, neglecting to include results from other healthcare environments would not provide a full picture of patients’ experiences in the healthcare setting.

1.10 Delimitation

This study operates within defined boundaries that determine its scope and direction. It is restricted to the Roman Catholic Hospital, excluding data from other medical institutions. The focus is solely on individuals diagnosed with coronary artery disease (CAD) who are either currently undergoing treatment or have done so in the past at this facility. Being a qualitative inquiry, the research seeks to gain insights into patient experiences rather than quantify treatment outcomes. The investigation is also limited to a specific period, capturing experiences from the last 12 months. Furthermore, participation is restricted to individuals who can communicate in English or another specified language, which may result in the exclusion of non-speaking patients.

1.11 Definition of concepts

Coronary Artery Disease (CAD)

According to the American Heart Association [35], Smith et al. [39], and the National Heart, Lung, and Blood Institute [40], coronary artery disease (CAD) refers to a condition in which the coronary arteries responsible for supplying oxygen-rich blood to the heart muscle become narrowed or obstructed due to the accumulation of plaque (atherosclerosis). This impedes blood flow, potentially resulting in chest discomfort (angina) or more severe outcomes like myocardial infarction (heart attack).

In this study, CAD is operationally defined by objective clinical criteria, such as a minimum of 50% stenosis in a major coronary artery observed through angiographic imaging or evidence of myocardial ischemia detected via functional testing. Symptoms commonly include angina, dyspnea (shortness of breath), or acute myocardial infarction in advanced cases.

Experience

Generally, experience refers to an individual's subjective interpretation and personal journey through healthcare, encompassing interactions with medical personnel, emotional and physical responses to treatment, and the impact of illness on daily living. It includes aspects such as care quality, provider communication, emotional support, and perceived treatment effectiveness [44].

Experience, for the purposes of the present investigation, is defined as one's practical knowledge, competencies, and clinical skills gained through providing direct patient care, formal education or other practice of health, over time. It could be quantified objectively with such famine indicators as years in practice, number of patient contacts, professional designations, procedures performed and what have you.

Patient

According to the World Health Organization (WHO), a patient is anyone who receives medical attention, in either hospitals, clinics or home set-ups; the injured, the unwell or those who seek medical preventive measures or advice [42].

In this research context, patients are defined as individuals who receive medical evaluation, treatment, or healthcare services due to illness, injury, chronic condition management, or preventive health needs.

Patient Experiences

This refers to the emotional, cognitive, and psychological journey of individuals undergoing treatment for CAD. It involves their perceptions of the diagnostic process, treatment pathways, communication with healthcare providers, and the overall impact of illness and care on their daily routines [43, 44].

In this study, patient experience is a comprehensive and subjective construct reflecting the totality of interactions and outcomes patients undergo from initiating contact with healthcare providers through completing treatment.

Treatment

Treatment refers broadly to medical or therapeutic interventions aimed at alleviating or curing symptoms of disease, injury, or health condition. This can include pharmacologic therapies, surgeries, physical rehabilitation, psychological support, or changes in health behavior and lifestyle [35, 40].

Within this study, treatment encompasses a range of medical actions and therapeutic strategies employed to control, relieve, or eradicate disease symptoms. These may include medication, surgical procedures, rehabilitation therapies, counseling, or preventive health measures, based on individualized diagnosis and care planning.

1.12 Outline of Chapters

Chapter 1: Introduction and background of the study – This segment of the study played a vital role by providing the introduction and background through articulation of the problem the study wanted to solve and objectives that it wanted to achieve.

Chapter 2: Literature review – In this chapter, the topic of discussion has been analyzed by analyzing the literature of it and giving an insight about experiences of patients of coronary artery disease treatment also.

Chapter 3: Research methodology – In this section, it delineated the different means or ways of obtaining, processing, and displaying the data. Also, it discussed review, population, sample, trustworthiness and ethical considerations.

Chapter 4: Presentation and discussion of findings– In this section we had analyzed the data that was collected and compared with the findings of the literature.

Chapter 5: Conclusion and Recommendations – The findings of the study were concluded in this segment and recommendations were given.

1.13 Chapter summary

The first part of the chapter describes the study on coronary artery disease (CAD) in greater detail which is a leading cause of mortality and disability with worldwide occurrence. CAD is a result of narrowed or blocked coronary arteries resulting from plaque forming, specially made of cholesterol, which can lead to serious problems like heart attacks and heart failure. The study is of significance of the study in the fact that it would explore experience of patients at the Roman Catholic Hospital’s Cardiac Center in Windhoek, Namibia, undergoing treatment or CAD to better understand the challenges faced by these and help to improve the outcome. Additionally, the chapter describes the aims of the study and the philosophical underpinnings of the study paying particular attention to how qualitative research is conceived of as an academic process that involves changing knowledge collaboratively and accounting for individual observations to experience the body ‘from the inside.’ The chapter ended by suggesting the theoretical framework of the study and definition of concept.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The setting for this study looking at the experiences of patients who have been treated for CAD is essential given the need to establish a solid foundation by a comprehensive review of literature. The researcher synthesized and evaluated prior research on the experiences of patients treated for Coronary Artery Disease (CAD), with a specific focus on treatment modalities and their psychosocial impacts. Through this critical analysis of theoretical frameworks, methodologies, and significant findings, I identify distinct gaps in the current body of knowledge, address ongoing debates, and define a clear path for future inquiry. Ultimately, this review culminates in a conceptual framework that positions this study within the broader context of cardiac health and patient care, thereby ensuring a well-grounded and trustworthy investigation.

This chapter is organized thematically. It first provides an overview of coronary artery disease, discussing its prevalence, risk factors, and available treatment options. It then reviews studies on patient experiences, with a focus on the physical, emotional, and social dimensions of living with CAD and undergoing treatment. Furthermore, the literature review examines factors affecting treatment adherence, quality of life, and coping strategies.

2.2 Description and Pathophysiology of Coronary Artery Disease

CAD is the leading cause of morbidity and mortality due to cardiovascular disease in both men and women worldwide. It's a more advanced type of atherosclerosis in which plaque collects inside the arteries that supply the heart, restricting or (in the worst cases) blocking blood flow. Atherosclerosis, a chronic inflammatory condition, normally starts early in life, even in childhood, when lipid-rich fatty streaks accumulate in the walls of arteries. The condition is the result of damage to the endothelium, of which smoking, high blood pressure, high cholesterol and diabetes are common culprits.

The signs and symptoms of CAD vary, and the same holds true for its complications, all depending on the severity and location of the artery stenosis, the plaque rupture and thrombus formation, and the degree of muscle perfusion defect in the heart. The most frequent presenting symptom is acute retrosternal chest pain, but patients may also have shortness of breath, a feeling of indigestion, nausea, or vomiting. CAD results from an imbalance between the oxygen supply and demand of the myocardium, typically caused by decreased blood supply to the myocardium because of obstructed or narrowed arteries.

Although deaths associated with CAD has been on a decline since its peak in the 1960s, CAD continues to be a leading cause of mortality worldwide and in the United States. It's a multi-factorial disease, where modifiable risk factors (such as smoking, obesity, high cholesterol, and psychosocial stress) and non-modifiable risk factors (age, gender, family history, and genetics) play a role. The increasing trend in CAD, especially in the developing world, is strongly related to lack of physical activity and unhealthy eating. Progress in primary care has delayed onset in higher income populations, but smoking is still the big cause, affecting 15.5% of US adults in 2016.

It is a common disease in all developed and developing countries. It represents 2.2% of the global burden of disease, 32.7% of CVDs and its financial cost exceeds $200 billion annually. From 2009 to 2012, 7.6% of men and 5.0% of women in America, or 15.5 million people overall, were reported to have CAD.

CAD can be diagnosed with several types of tests, including electrocardiograms (ECG), echocardiograms, stress test, chest X-ray or blood tests, or through cardiac catheterization. ECGs measure the heart's electric activity which can show structural or functionality disturbances in the body. Echocardiography, a non-invasive ultrasound, is vital to evaluation of heart chambers and the heart's valves. Stress tests can help determine how the heart performs during effort and chest X-rays provide information about the structures of the heart and lungs. Blood tests, especially for cardiac enzymes and natriuretic peptides, help in the detection of acute ischemia. While cardiac catheterization is still the gold standard for diagnosing CAD, it is invasive and is associated with risks (allergic reactions and kidney damage to name a few).

Cardiovascular disease, of which CAD is the most important component, remains the leading cause of death globally causing more than 17.8 million deaths per year. The economic and medical burden in westernized countries such as U.S. is significant, with rapid increase of rates in developing areas driven by urbanization, lifestyle modifications and increased longevity.

2.3 Risk Factors for Coronary Artery Disease

Attempts have been made in extensive research to characterize the features that predispose an individual to CAD in general and more specifically to MI. Risk factors can be divided into non-modifiable and modifiable risk factors. Non-modifiable factors are factors over which the individual has no control, such as age, race, sex and family history [35]. Meanwhile, also the risk factors which are modifiable risk factors and individuals can modify those through lifestyle and medication are included, such as obesity, physical inactivity, smoking, stress, alcohol use, and high lipid levels [35]. A risk factor can work alone or along with other risk factors, and the more risk factors a person has, the greater the chance of developing CAD. People at risk are encouraged to make regular visits to a doctor and take heart-healthy actions [35

2.4 Non-modifiable risk factors

Non-modifiable risk factors cannot be avoided, changed or managed. These are age, gender and family history which play a major role in predisposing someone to the risk of CAD but can be less intervened upon [13].

2.4.1 Age

Advancement in age is a proven non-modifiable risk factor of CAD. The clinical manifestations of CAD are typically observed in men at the age of 50-65 and in women - approximately ten years later, in the post-menopausal period [13]. According to a report by the World Health Organization (WHO), CAD claims the greatest number of lives of individuals beyond 65 years, and an increasingly huge percentage of these deaths are claimed among women [16]. In developed nations, the burden of CAD is increasing because of the increases in the aging population, which is as a result of fertility and mortality decreases. It is estimated that, as the population of the world keeps aging, CAD will continue being among the major causes of deaths in the world [23].

2.4.2 Gender

CAD ranks as the foremost cause of death in men and women alike all over the world. Women are however likely to develop CAD about a decade later than men mainly because of the protective estrogen effect prior to menopause [13]. After menopause, there is no abrupt increase in CAD-related mortality but rather a gradual rise over the years [11]. Furthermore, lifestyle changes and increased prevalence of cardiovascular risk factors in postmenopausal women may exacerbate this risk.

2.4.3. Family History

A family history of myocardial infarction (MI) or coronary heart disease (CHD) increases the risk of CAD. Studies indicate that a reported family history of early-onset CHD (before age 55) is associated with increased coronary artery calcium (CAC), a marker of coronary atherosclerosis [35]. This familial risk persists even when adjusted for individual modifiable risk factors [36]. Additionally, parental history of CHD is linked to increased carotid intima-media thickness, further solidifying the relationship between family history and CAD risk [37]. Understanding the genetic predispositions may aid in early intervention and personalized prevention strategies.

2.5 Modifiable risk factors

Modifiable risk factors can be managed, controlled, or changed through lifestyle interventions or medical treatment. These include hypertension, smoking, diabetes, obesity, and dyslipidemia [38].

2.5.1 Hypertension (high blood pressure)

Hypertension is a key modifiable risk factor for CAD. The Prospective Studies Collaboration found that every 20/10 mmHg increase in blood pressure doubles the risk of ischemic heart disease and stroke, making it one of the most significant contributors to CAD development [38].

2.5.2 Smoking

Smoking is another major contributor to the development and progression of CAD. The toxins in tobacco smoke, such as nicotine and carbon monoxide, damage the arterial walls and promote plaque formation, leading to atherosclerosis [31]. Smoking increases the risk of myocardial infarction by two- to six-fold in men and three-fold in women [39]. Factors such as the duration of smoking, the number of cigarettes smoked, and the age at which smoking begins exacerbating CAD risk [31]. Smoking ending can significantly reduce the risk of developing CAD.

2.5.3 Types 2 Diabetes Mellitus (T2DM)

T2DM is closely associated with CAD, increasing the risk of developing the disease two to four-fold. Patients with diabetes often have more advanced CAD at the time of diagnosis due to chronic hyperglycemia, which accelerates atherosclerosis through oxidative stress, abnormal cholesterol metabolism, and endothelial dysfunction [40].

The global prevalence of diabetes is increasing due to aging populations, urbanization, and lifestyle factors such as obesity and physical inactivity [41]. Early management of blood sugar levels can help mitigate the risk of CAD in diabetic patients.

2.5.4 Obesity

It's a known fact that obesity plays a strong role in the development of CAD as an independent risk factor or as an associate factor of other metabolic conditions like hypertension and dyslipidemia. Due to increased adipose tissue, pro inflammatory cytokines like interleukin 6 are released, which contribute to endhethelial dysfunction and increased vascular resistance [13]. The adverse effects of excessive weight on the course of atherosclerosis are accelerated by obesity during adolescence and early adulthood and can result in earlier clinical manifestations of CAD [16]. Achieving and maintaining a healthy weight by altering lifestyle can largely reduce the CAD risk.

2.5.5 Dyslipidemia (Abnormal Cholesterol Levels)

Primary causes of atherosclerosis are marked high levels of low-density lipoprotein cholesterol (LDL-C), which result in deposition of lipids in arterial walls, leading to cell formation of foam cells, which eventually end up forming plaques [22]. On the other hand, high levels of high-density lipoprotein cholesterol (HDL-C) subserves the function of protecting against atherosclerosis by removing excess LDL and stimulating the activity of the enzymes involved in the antioxidant system [22]. Dietary and medication intervention to monitor and manage cholesterol levels can have a major effect on CAD risk.

2.5.6 Sedentariness (Lack of Physical Activity)

Physical inactivity is a major determinant of weight gain and metabolic imbalance (risk factors for CAD). Physical activity, in general, can improve endothelial vasodilation, thus reducing the risk of atherosclerosis [13]. In addition, physical activity aids in controlling blood glucose, improving insulin sensitivity, and controlling blood pressure and, therefore, lower CAD risk [39]. But having a regular exercise routine is very crucial for the overall cardiovascular health.

2.6 Other contributing Factors

CAD risk is also caused by other factors such as psychosocial stress and low socioeconomic status. About CAD outcomes, psychosocial stress, depression, and work-related stress have been reported to influence by means of influencing adherence of healthy lifestyle practice and medication [38]. Moreover, lower socioeconomic status is normally associated with poorer access to healthcare, lower health literacy, and unhealthy living conditions that compound the risk of CAD [11]. In reducing the overall burden of CAD in many different populations, addressing these social determinants of health is important.

2.5.1 Lived Experience of Patients with Coronary Disease.

Coronary artery disease (CAD) remains one of the leading causes of illness and death globally. While clinical management has advanced considerably, there has been comparatively less attention given to understanding the lived experiences of those coping with CAD. These personal narratives are crucial for promoting patient-centered care, treatment adherence, and psychosocial support. Over the past two decades, countries like India have undergone a significant epidemiological shift in CAD prevalence. Previously, the health landscape was dominated by malnutrition, maternal and infant illnesses, and infectious diseases. However, non-communicable diseases, particularly cardiovascular conditions, have now taken precedence.

Cardiovascular diseases have come to occupy more than two-thirds of the mortality pattern in developing countries (World Health Organization). CAD is the leading cause of death in many underprivileged or rural areas, but risk factors may vary from place to place. The accelerated epidemiological transition in these countries underlines the increasing prevalence of chronic, NCDs attributable to aging.

There are many predisposing risk factors for CAD, such as smoking, an unhealthy diet, lack of exercise, family history, and age. While biology predisposes one to developing the disease, it doesn't mean an individual will get the disease, which is why lifestyle factors are so critical in prevention. Smoking is a large factor, sharing arteries, constricting circulation, and increasing the likelihood of heart attacks and angina. Nicotine increases blood pressure, adds strain on the heart, and damages arteries and vascular disease, which requires the limbs to be removed in more severe cases, such as gangrene.

Socioeconomic status also affects CAD risk greatly and it is observed that persons from lower income group have restricted access to healthy food and healthcare. Some ethnic groups, including but not limited to South Asian, African and Caribbean communities, are also at higher risk. Regular physical activity is potent preventive therapeutics, with weight control and protection against hypertension, high cholesterol, and type 2 diabetes being ways that all protect against CAD. There's heightened vulnerability among those who are overweight, especially if they're middle-aged, which makes healthy eating and an active lifestyle very important.

The potential risk factors of CAD can be divided into modifiable factors (e.g., smoking, overweight, improper diet, stress) and non-modifiable factors (e.g., age, sex, heredity). Modern lifestyles such as higher work stress also impose additional risk. Key comorbidities associated with patients with CAD are obesity, renal diseases, and heart failure. Emotions, particularly unresolved stress and anxiety are also related to the recurrence of the disease, particularly after intense physical activity.

But as a chronic disease, CAD also serves as a window into lasting effects on the lives of patients. Fear and anxiety can be universal responses after diagnosis. These feelings relate to worries about recovery, recurrence and changes to the way they live. In some patients an improvement in their lifestyles amounting to exercise, yoga, diet change, reduction in stress and taking drugs is cited as the cause of their recovery. They find one another, sites of community, and believe in healthcare providers as miracle workers.

CAD patients' experiences of living with CAD a comparative analysis. Several commonalities emerge when exploring studies on CAD patients. Even after treatment, such emotional strains as fear of death, depression and helplessness often remain. It is often challenging for patients to 130 adhere to lifestyle changes (e.g., 131 changes in diet, increases in physical 132 activities, and smoking cessation). Even if they are aware of the significance of these modifications, they may find it hard to follow them and they can feel helpless if they have no social support, that is often influenced by gender, culture, and SES.

Provider-patient relationship quality significantly influences patient experience. Some say they have received empathetic, supportive care; others, particularly women and younger patients, say they feel dismissed or not listened to. Support is another key factor sturdy relationships (particularly with a spouse or partner) can help people recover emotionally more quickly and adhere better to treatment. On the other hand, the overprotection of family members may seem confining to some patients.

Although CAD has been studied extensively, many questions are still unresolved. Specifically, women, ethnic minorities, and younger persons are underrepresented groups in qualitative research, which has largely focused on older Western men. The emotional and social trajectories living with CAD are not well addressed by longitudinal studies in literature. In addition, little was known about how combined levels of these and other factors (e.g., gender, race, income, geographic location) influence patient experiences. As digital health tools such as apps and wearables grow in popularity, there is limited qualitative research on how patients adopt these technologies in their daily routine.

Lastly, in literature there are controversies about the experience of CAD. Some experts contend that conventional cardiac rehab programs adequately meet patients' emotional needs; others criticize the support as perfunctory or unevenly delivered. The sexual and emotional burden on women is also controversial, either because some reports claim that women are more distressed, or simply due to a sampling bias. In addition, there appears to be disagreement among academics about the extent to which cultural ideas and/or structural/economic barriers affect people understand and management of the problem.

2.6 Theoretical Framework

The biopsychosocial model, as the basis of the study, is of specific importance in building a combined theoretical model. Initially introduced by Engel, this model assumes that health status is not determined, so much, by biological factors, but by a complex of psychological and social conditions. A multivariate biopsychosocial perspective is helpful in CAD to guide us in appreciating how the experiences of people undergoing treatment affect their physical and emotional health status and how these factors in turn affect their social environment. It transforms the perception into a less clinical and more holistic and patient centered one. Additionally, this model is suitable to be used in the research grounded in other settings such as Namibia, where the social organization, the availability of medical services, and cultural perceptions can profoundly influence the experiences of patients.

Moreover, the Health Belief Model (HBM) also presents valuable theoretical context to the approaches of patients to their illness and their choices regarding their care. The HBM, postulates that perceived susceptibility, perceived severity, benefits, barriers, cues to action and self-efficacy determine the health-related behavior of an individual. Regarding CAD, this model can provide an explanation on why patients may or may not adhere to lifestyle changes and follow-up visits. The decisions made by the patients can be based on their views of how serious the condition is and how effective their published treatment methods are, and how they think they will be able to fit in with the demands of treatment. It is especially applicable to the Namibian setting in which these perceptions are influenced by variation in health literacy and accessibility of medical information.

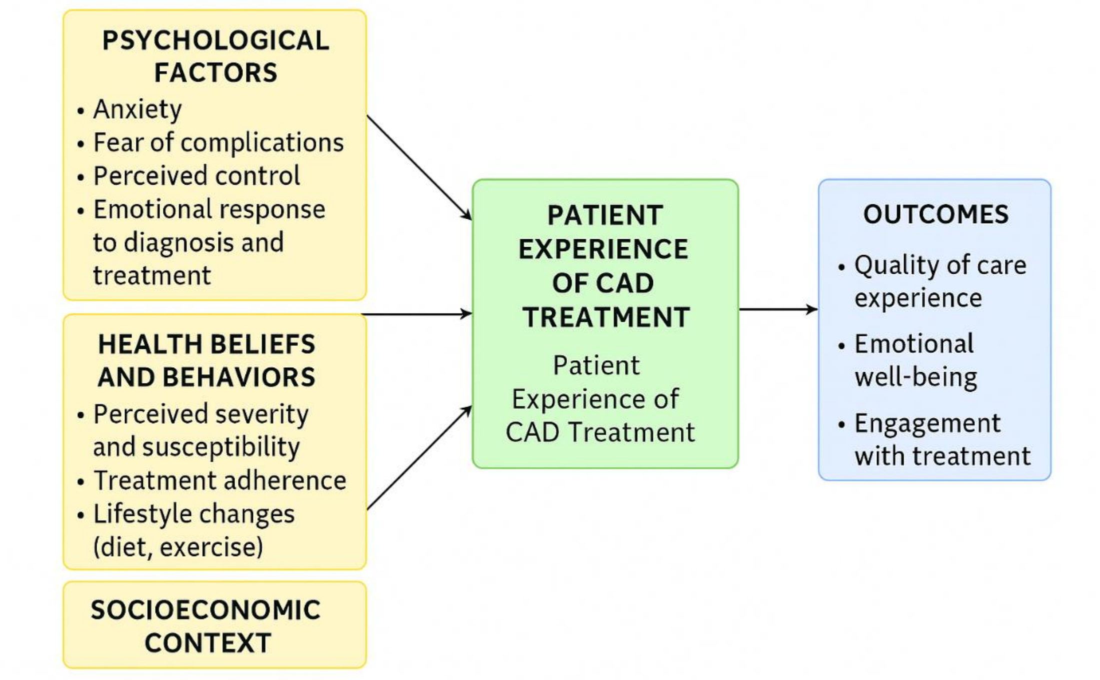
Furthermore, theories of social support, including stress-buffering and direct effects models, are important for elucidating the impact of factors related to marital status and family dynamics on CAD treatment perceptions. The stress-buffering hypothesis states that social support reduces the impact of stress, including stress associated with health crises such as being diagnosed and treated for heart disease. In contrast, the direct-effects model posits that social support is positively related to health even in the face of stress. This dual view is based on the evidence that patients with supportive networks given most value to spousal support report better compliance with medication treatment, better perceptions, and better recovery. Thus, in the current investigation, marital status is not treated as demographic information but as a factor in identifying patients who are emotionally and behaviorally resilient to treatment.

Moreover, similar psychological models also suggest the relationship between social isolation, mood disorder, and cognitive functioning among the patients with chronic disease. Anyway, patients with cardiovascular diseases experience negative, repetitive thoughts and hence loneliness that is associated with increased cardiac distress. This interaction exemplifies the mediating effect of cognitions between environment and emotional health. Therefore, patients who do not have close emotional support (the unmarried and the widowed) could develop higher levels of anxiety, worry or helplessness that interferes in their interaction during treatment. This finding highlights the importance of considering emotional responses as effects of social support as well as elements of caring experience.

Further, the Theory of Fundamental Causes of Disease (Link and Phelan) provides a structural perspective by asserting that SES affects health by means of providing access to flexible resources (knowledge, money, power, and social capital). These resources invariably influence health status, as the profile of disease changes. In the Namibian health care context, patients from low SES might experience difficulties in accessing quality cardiac care, using medication, or maintaining long term lifestyle changes. It therefore serves to situate the experiences of individual patients within wider structural inequalities, and in so doing, provides depth to the reading of interviews.

Combined, these theories provide an integrative model for the study. The biopsychosocial model provides an integrated framework that includes biological, psychological, and social domains. Explanation and theoretical frames. The Health Belief Model addresses individual-level decision making and health related behaviors. Social support theories explain the influence of relationships and emotional resilience, while cognitive mediation theories illustrate how social experience is interpreted by the mind to affect psychological functioning. The Theory of Fundamental Causes then contextualizes these individual and interpersonal experiences in broader socioeconomic arrangements.

2.7 Conceptual Framework



This theoretical framework depicts dynamic relationships among factors contributing to patient experiences during CAD treatment. The concept of Patient Experience of CAD Treatment constitutes the central mediating variable, which is influenced by different psychosocial and contextual factors. The left-hand side of the framework indicates three types of influencing factors. The psychological aspects such as anxiety, fear of complications, perceived control and emotional reactions due to diagnosis and treatment. Indeed, these factors are important, as both emotional and mental states may influence how patients view and explain their disease, as well as their reaction to medical treatments. Secondly, health beliefs and behaviors are those perceptions individuals may hold about their susceptibility to CAD, the degree to which they perceive CAD to be serious, their belief in the efficacy of the treatment and his/her inclination to take up healthy lifestyle habits (diet, exercise). These behavioral determinants are based on constructs derived from the Health Belief Model, which has been applied extensively to explain treatment adherence and health care-seeking behavior. Third, the social economic background is the source of the psychological and behavioral factors which affect access to health care, the financial income, the education and the social support systems. Patients with few financial resources may experience structural obstacles that impede their capacity to interact with treatment in a substantive manner and change their experiences with healthcare holistically.

These influencing factors combine to create the central phenomenon the lived experience of the treatment process emotionally and practically at Roman Catholic Hospital' s Cardiac Centre Windhoek. This perception, in turn, influences the pivotal treatment outcomes located on the right of the framework. These are experience of care, which is a patient's perception of being treated as part of the process, emotional wellbeing or the psychological stability and support mechanisms that are perceived or experienced during the treatment journey, and treatment engagement, which is ability to adhere to medication, follow up, and help make lifestyle changes. The framework thus offers a structured yet modifiable modeling of the complex constellation of internal states, external circumstances, and treatment response.

2.6 Chapter summary

Coronary Artery Disease (CAD), driven by atherosclerosis, remains a leading global cause of morbidity and mortality. Risk factors include non-modifiable (age, gender, family history) and modifiable (hypertension, smoking, diabetes, obesity) elements, with psychosocial and socioeconomic factors further influencing outcomes. Patients often struggle with anxiety, depression, and lifestyle adherence post-diagnosis, while social support improves coping and treatment engagement. Gaps persist in research on underrepresented groups and long-term psychosocial impacts. The biopsychosocial model and Health Belief Model (HBM) provide frameworks for understanding CAD’s multifaceted nature, linking biological, psychological, and social determinants to patient experiences. Socioeconomic disparities also shape access to care and health behaviors. This review highlights the need for patient-centered approaches, integrating these insights to enhance CAD management and address gaps in care for diverse populations.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the research methodology and methodological approach, in relation to the research design, population of study, sampling method, research instruments, and procedures of data collection and analysis. To deeply explore patients, experience in receiving coronary artery disease treatment at Roman Catholic Hospital, a qualitative approach utilizing both exploratory and descriptive designs was adopted. This chapter also includes ethical considerations, protection of the rights of the participants in the study as well as measures taken to guarantee trustworthiness and credibility of the study findings.

3.2 Research Design

According to Creswell [45], a research design is a plan to answer the research problem. Moreover, research design helps the researcher in predicting correctly the research decisions to ensure validity of the results [46]. A qualitative research method was used in this study whereby the descriptive, exploration and phenomenological design were systematically utilized. This proved to be an important tool that enabled participants to articulate their views and rationales in a clear and consistent manner. Qualitative design is suitable for this topic because it facilitates thorough studying the intricate, personal, and situational factors influencing patients' experiences with coronary artery disease treatment. Research design implies a structured way of describing people's perceptions, how they make sense of their lives, experiences and their structure of the world. Qualitative research contributes to the phenomenologist world opinion that sustains those human behaviors is best understood by people acting in their natural environment [47]. Qualitative research assumes that data is collected through interviews and observations as well as presentation of data as narrative information [48].

3.2.1 Exploratory Design

Exploratory studies are done when a new area is being investigated, or little is known about an area of interest [49]. This study employs exploratory research to gain new understanding, discover novel ideas, and increase knowledge of a condition, phenomenon, community, or individual [50]. Participants shared their challenges and management approaches. although men and women have similar CAD risk factors, heart attacks affect females differently than males (Brink et al., 2018), emphasizing the importance of gender-specific considerations in treatment. Through an exploratory design, this study offered valuable insights into the lived experiences of CAD patients, identifying crucial areas for enhancing treatment adherence, strengthening support systems, and improving healthcare accessibility. In this study, the researcher had explored the experiences of patients on the treatment of coronary artery disease at Roman Catholic Hospital.

3.2.2 Descriptive Design

Descriptive research is conducted to present detailed accounts of situations, environmental settings, or relationships [51]. These are used in studies where more information is required in a particular field through the provision of the phenomenon as it occurs naturally, or the researcher would like to investigate new areas and know about an area of interest [52].

This type of research is particularly effective for outlining the specific conditions and contexts in which events occur. The motivation for selecting descriptive research lies in its ability to provide a clear and detailed understanding of the phenomena under investigation, capturing the richness and diversity of the experiences. For this study, the research will describe the experiences of patients on the treatment of coronary artery disease at Roman Catholic Hospital.

3.2.3 Phenomenological Design

This study adopts a descriptive phenomenological design, which aligns with its aim to explore the lived experiences of patients treated for Coronary Artery Disease (CAD) by focusing on the "what" and "how" of their experiences [53, 56]. Descriptive phenomenology, rooted in Husserlian philosophy, prioritizes the unbiased description of participants' conscious experiences, suspending preconceptions (epoché) to reveal the essential structures of the phenomenon [54, 55]. This approach was selected because it systematically captures the shared meanings of CAD treatment experiences through detailed participant narratives, categorizing them into descriptive themes without imposing theoretical interpretations [53, 59].

The design is justified by the study's goal to articulate the essence of patients' experiences, emphasizing their subjective perceptions rather than abstract theorizing. Unlike interpretive phenomenology (e.g., Heideggerian), which explores contextual and cultural meanings, this study's focus on direct description ensures fidelity to participants' accounts, making it ideal for uncovering unmet needs and psychosocial impacts in CAD care [57, 59]. Phenomenology's emphasis on experiential depth suits the research context, where individual narratives illuminate gaps in patient-centered approaches [54, 61]. By analyzing spoken or written language as data, the methodology aligns with phenomenology’s tradition of deriving meaning from lived realities [62,64].

3.3 Study Setting

This study was carried out at the cardiac center at Roman Catholic Hospital, Windhoek, Namibia. The study was conducted by the registered nurse by interviewing the cardiac patient who is done stenting catheterization by the cardiologist.

3.4 Study Population

Study population referred to as the entire group of people or object that is of interest to the researcher [65]. The target population for this study are patients treated for CAD at Roman Catholic Hospital. The number of patients being treated for coronary artery disease at Roman Catholic Hospital is estimated to be between 40 patients per month.

3.4.1 The inclusion criteria

Inclusion criterion in this study included all patients aged 18 years and above who underwent coronary angiography and stent catheterization in the Roman Catholic Hospital. Patients who fulfilled these criteria and were willing to take part were incorporated in the study.

3.4.2 The exclusion criteria

This study has excluded all patients that are done coronary angiogram, stented and put on treatment by the cardiologist and they were not around during the time of data collection, as well as the patients who were critical sick, unstable, and where not able to be interviewed.

3.5 Sample and Sampling method

A sample is a part or fraction of a whole or subset of a larger set selected by the researcher to participate in a research study [65]. Sampling involves choosing a smaller group of individuals or observations from a larger population to infer information about the whole group. In this study the researcher used the non-probability purposive sampling technique, to select participants who possess unique characteristics or knowledge that is relevant to the research topic. Sample size refers to the number of observations or data points collected in a study or experiment [65]. The sample size of six participants was determined by data saturation, when there were no new ideas or additional data was identified, when the data started to repeat and further data collection becomes redundant.

3.6 Research instruments

A research instrument refers to tools, devices, surveys, questionnaires, tests, or any other instruments used by researchers to collect data during a study [66]. These instruments are designed to gather specific information relevant to the research objectives, enabling researchers to systematically gather data for analysis [67].

The researcher's only data collection instrument was an unstructured interview guide formulated in English. This method was employed to facilitate that participants should be able to express their own experiences of CAD treatment in their own words and not to be encumbered by sets of fixed questions, a deficit of constructed questions. The interview guide included a general open-ended central question: “Can you tell me about your experiences with treatment of heart disease of the coronary arteries?” This question formed the basis of the interview, which enabled respondents to take control of the discussion, directing it towards what was important to them. The researcher moved on to those items by using natural probing question/interruption to investigate new themes, probing further reflection on the part of each participant's own responses.

All interviews with participants were recorded digitally with participants' permission to support complete and accurate data collection. Alongside the recordings the researcher made written field notes during the interviews to record any non-verbal language, leaving main observations and context for the later analysis. The use of the unstructured interview method was highly suited to this phenomenological analysis, since it allowed for a close examination of the lived experiences, viewpoints and emotions of the participants about treatment for CAD.

3.7 Trustworthiness

Trustworthiness is a process to establish validity and reliability in qualitative research [65]. Trustworthiness in research refers to the credibility, reliability, and validity of the research findings [67]. It encompasses various aspects such as the integrity of the research process, the accuracy of data collection and analysis, and the transparency of reporting. Ensuring trustworthiness is crucial for maintaining the integrity and quality of research outcomes. Furthermore, there are four general criteria in their approach to trustworthiness in qualitative studies. These are credibility, transferability, conformability and dependability [67] to achieve high levels of trustworthiness the researcher ensured the following:

3.7.1 Credibility

Credibility denotes that researchers have confidence in the truth of the data and interpretations (Brink et al., 2018) [55]. Similarly, [67] defines Credibility as the believability or trustworthiness of information, a source, or an entity). Trustworthiness in this study was established through prolonged engagement, peer review, peer debriefing, and member checks, and through audio recording, as explained in the following section. As regards the notion of "prolonged engagement", it alludes to the dyad of time that a researcher is involving him/herself in close contact with the field or the community that he or she is studying. This requires long term engagement and observation to develop a rich understanding of the context, culture and power relations of the research site. In the current study the researcher continued collecting data until saturation was realized, the use of prompts and probes during the in-person interview were also used. In doing so, a rich description of the nursing patient's experience of undergoing treatment of coronary artery disease was obtained from participants. Extended interaction also helped to establish rapport and mutual understanding between the researcher and participants [55].

Member checks (respondent validation) Member checks, a.k.a., respondent validation, involves returning study results to participants to test the accuracy and interpretation of the data. This approach also enables participants themselves to respond, correct, and extend research that represents their perspectives and experiences. The transcribed data and emergent themes were presented to the participants for member checking by the researcher who did follow-up interviews with the participants at two weeks following initial interviews. In doing so, we sought to confirm the authenticity of participants’ accounts, to verify that their experiences had been accurately represented, and to provide participants with an opportunity to adjust or comments. While maintaining an appropriate amount of time for reviewing and coming between the data collection and interview, the researcher tried to protect the credibility of the thematic analysis was pursued. Peer review is a process used to evaluate the quality, validity, and rigor of scholarly research before it is published or presented.

In peer review, experts in the relevant field critically assess a manuscript, research proposal, or presentation to identify strengths, weaknesses, and areas for improvement. To ensure this the researcher pursued views of peers outside the study through presentation in seminars during proposal stage and through peer debriefing which is a qualitative research technique that involves discussing and reflecting on research processes, interpretations, and findings with peers or colleagues. Information was audio-recorded which involves capturing sound, typically using a recording device such as a microphone or digital recorder. This was done during group discussions thus the data are a true reflection of the participant's view not from the researcher's predispositions.

3.7.2 Dependability

Brink [12] defines dependability as the provision of evidence such that if were repeated with the same or similar participants in the same or similar context, its findings would be similar. The researcher ensured dependability by collecting data until saturation occurred. Lowe et al., [68] loosely define data saturation as "a point at which observing more data will not lead to discovery of more information related to the research questions". Meaning that, in this study, data saturation depended on both the sample size and the variation in responses given by participants. In addition, there is thick descriptions of study contexts and findings generated from the study. In this study data collection methods and data analysis will be moderated by the research supervisors.

3.7.3 Conformability

Conformability refers to the degree to which the data collected accurately represents the underlying theoretical concepts or phenomena being studied according to [55]. Confirmability is concerned whether research findings reflect the experiences and ideas of participants and not that of the researcher’s prior assumptions [69]. Moreover, it involves ensuring that the methods used for data collection, analysis and interpretation align with the research objectives and theoretical framework, thereby ensuring the validity and reliability of the study s findings. To ensure conformability, audio recordings taken during interviews were given to the study supervisor to listen and confirm that the voices are truly for the participants and not made up by the researcher. Therefore, the study findings are derived from the participant’s own opinions as well as the study setting, not from the researcher’s predispositions. Moreover, a method of inquiry audit was used to ensure conformability, whereby the study supervisor who was not involved in the data collection and data analysis scrutinized the process of data collection, data analysis as well as the findings of the research study and conclusions made, to confirm the findings are supported by the collected data.

3.7.4 Transferability

This refers to the ability to apply the findings in other contexts or to other participants [55]. Similarly, Stahl [67] defines transferability as the extent to which findings, results, or conclusions derived from a particular study or context can be applicable or transferred to other settings, situations, or populations. In this study, this was ensured by document all processes and methods utilized such that they can be re-applied to similar studies. In addition, the data collection instrument included probing, open questions, for the researcher to collect rich data, within the study setting which was ensured by the occurrence of data saturation. Consequently, the researcher provided sufficient detailed report of the findings. These measures assisted in thick descriptions during report writing stage as proposal has limited pages. In addition, the researcher discussed the findings from this study with existing literature from different settings on experiences of students on peer-assisted learning.

Table 3.1: Summary of criteria and measures taken to ensure trustworthiness

Criteria of trustworthiness	Measures taken
Credibility	• Prolonged engagement, member checks, peer review, peer debriefing and audio recording.
Transferability	• Documenting all processes and methods utilized. • Data collection instrument included probing and open-ended questions • Researcher discussed the findings from this study with existing literature from different settings on experiences of students on peer-assisted learning.
Conformability	• Audio recordings taken during group discussions were given to the study supervisor to listen.
Dependability	• The researcher ensured dependability by collecting data until saturation occurred.

3.8 Pilot Study

A pilot study is a small-scale study conducted before the main study on a limited number of participants from the population at hand and it is conducted to investigate the feasibility, methodology, tools or procedures that was used in larger study [55]. It helps researchers identify and address potential issues, refine research instruments, and assess the practicality of the study design, thereby ensuring the effectiveness and efficiency of the main study

In this study, the researcher-conducted a pre -test interview with two cardiac patients from the target population who are done coronary angiogram and then put on treatment by the cardiologist at Roman Catholic Hospital as part of the pilot study, however, they were not included in the main study data collection to maintain feasibility. The patients were asked about their experiences regarding Coronary Artery treatment.

3.9 Procedure for data collection

Data collection is a process of collecting, measuring, and analyzing accurate insight for research using standard validated techniques [68]. The data was collected by the researcher as soon the permission or approval by the University of Namibia Research Ethics Committee in accordance with the University of Namibia’s Research Ethics Policy and Guidelines is granted. The research was carried out in a privately owned health institution; however, the Office of the Executive Director at the Ministry of Health and Social Services gave written consent to the collection and use of the data as per the national governance of research. Further consent was provided by the management of the Roman Catholic Hospital in which the study was conducted. The researcher used the unstructured interview, cellphone and the field notes to collect the data, the field notes were taken during the proceedings of the interview. Written consent was obtained from the participants before data collection. The researcher collected the data at Roman Catholic Hospital cardiac center and the interviews was conducted in English, moreover the researcher has ensured that the questions were open-ended and flexible, paying attention to prompting and avoiding leading questions. Furthermore, the questions focused on the objectives while still encouraging discussion as well as being unbiased and neutral

3.10 Data analysis

Data analysis is defined as the process of evaluating data using analytical and logical reasoning to examine each component of the data provided [69]. Data analysis refers to the systematic process of inspecting, cleaning, transforming, and interpreting data with the objective of extracting meaningful insights, drawing conclusions, and making informed decisions [70]. It involves applying various statistical, computational, or qualitative methods to examine and analyze datasets to uncover patterns, trends, relationships, or associations within the data [71]. In qualitative research data collection and data analysis happens concurrently. All interviews were recorded using a digital recorder and were then transcribed. The thematic analyses were used for analyzing qualitative data that searches for themes within data. Hence, the thematic analysis was guided by the research question. Thematic coding is an analytical method of “identifying, analyzing, and reporting patterns (themes) within data” [72]. This method was suitable for this study due to its compatibility with qualitative study analysis and breaking down in-depth data into recognizable themes to guide the analysis.

Therefore, the data analysis for this study followed a five-step process as outlined by Castleberry [72] which includes compiling, disassembling, reassembling, interpreting, and concluding. The five steps were used as follows:

- In the first step, compiling, all notes and audio recordings from the focus group discussions were transcribed verbatim immediately after each session to prepare the data for analysis.
- In the second step, disassembling, the researcher identified interesting features within the transcripts and wrote down corresponding codes.
- During the third step, reassembling, the researcher mapped these codes and contextualized them in relation to each other, creating themes and subthemes that formed the basis of the data presentation. The researcher also developed a thematic hierarchy in the form of a coding t to visualize the relationships and branching of themes and subthemes.
- In the fourth step, interpreting, the researcher derived analytical conclusions from the organized data.
- The final step, concluding, involved drawing conclusions that addressed the study's purpose. Additionally, field notes were incorporated into the analysis to provide further context.

Finally, the researcher shared the transcripts and results with the participants for validation through member checking. This step ensured the accuracy and credibility of the findings, and no major changes were required following participant feedback.

3.11 Ethical Consideration

Ormrod [73] encourages researchers to pay close attention to ethical issues when conducting a research study. Among the most important issues to consider when conducting a research study are maintaining the privacy of respondents, obtaining informed consent, and fully disclosing to respondents the purpose of the study [74].

The ethical aspects of a study take precedence over any other areas of the study. The rights of study respondents will be protected. Ethical considerations were applied in this study are discussed under the following headings: permission to conduct research, principle of respect principle of beneficence and non-maleficence and principle of justice.

3.12 Permission to Conduct Research

Ethical Clearance was obtained from the University of Namibia Decentralised Ethics Committee (DEC). The researcher abstained permission from the University of Namibia research ethics committee with the reference number SoNPHHDB/23/128/124, in accordance with the University of Namibia's research ethics policy and guidelines. Written permission for collecting and using the data obtained from the office of the Executive Director of Ministry of Health and Social services, reference number 22/4/2/3 and the management of the Roman Catholic Hospital.

3.13 Principle of Respect

Participations were autonomous, that is participants had the right to self-determination [73]. To show autonomous in this study, informed consent was obtained from participants, through signing a consent form prior to participation in the study. The purpose of obtaining informed consent was to protect study participants and allow them to make informed decisions. Information concerning the study, including the purpose and objectives was explained to participants during the process of obtaining consent and they committed themselves knowingly. Participants were informed that participation in the study was completely voluntary, they were not forced or deceived to take part in the study. Moreover, participants were informed of their right to withdraw from the study at any time or stage without giving a reason. The researcher informed them and ensured that withdrawal from the study will not affect the relationship between the researcher and the participants. Moreover, the participants had the right to not answer any questions they were not comfortable with.

To ensure anonymity, no names of the participants were recorded or taking their pictures during any process of the study. The researcher allocated number codes during data collection which were also used in report writing. Confidentiality was guaranteed by making sure that data collected during the study was not disclosed to anyone, except for the researcher and study supervisor. Confidentiality and privacy were maintained in the study by making sure information from the participants is not going to be shared publicly to maintain trust and protect reputation. The researchers have enough data that is anonymized or de-identified to protect the privacy of the individuals involved. Moreover, measures were put in place to prevent the disclosure of personal information that could lead to the identification of participants.

The researcher treated the respondents with respect by keeping their information confidential. They were all equally valued by sharing results of research with the public. Data collected was entered into the laptop, which is secured with a password only known by the researcher, furthermore the researcher made use of the codes instead of the real names of the participants to ensure anonymity in the study. All the information collected by the researcher are stored safely and will only be destroyed five years after graduation.

3.14 Principle of non-maleficence

According to Ruston, et al. [73], the principle of non-maleficence compels researchers not to cause any harm to study participants. The researcher ensured that participants were not exposed to avoidable harm and distress. Motional or psychological harm was avoided by not using coercion or being deceptive during participant recruitment stage. participants were not forced to take part in the study but participated voluntarily. The participants were selected purposively, and this is to ensure that their selection is aimed at potentially benefiting the study. There won’t be any direct benefit or incentive for participants.

3.15 Principle of beneficence

According to Ajuwon, [73], beneficence refers to that benefits from the study should not override the participants benefit and that the participant has the right to be protected from harm and discomfort. The principle of beneficence ensures that research maximizes benefits while minimizing harm. This study was applied to provide a platform for study participants to share their challenges and these improved healthcare policies were created as a result. This also includes providing psychological support, educational sessions or access to healthcare professionals as this will improve the management of the disease. Researchers kept the confidentiality, gave the psychological support if needed, and did not ask intrusive questions to minimize harm.

3.15 Principle of non-maleficence

The principle of non-maleficence states that harm to a human being who is the subject of research is to be avoided, physical, emotional, and psychological harm. In doing this study the researchers went to some extent that they took adequate precautions necessary to protect participants' well-being. In this case, it means protecting confidentiality, providing emotional comfort for distress, or avoiding intrusive or distressing questions. At the same time, physical risks are limited by providing the participants with a safe environment as well as procedures which would not aggravate participants' condition. By using these measures, researchers both follow the concept of non-maleficence as well as the others (ethical research standards).

3.16 Principle of justice

According to Ajuwon, [73], justice refers to the right to fair selection and treatment. Justice was exercised by applying fairness in selecting study participants. This principle includes the concepts of exercising fairness and equity [74]. Equal treatment of the participants to avoid biased sampling to obtain accurate and reliable results. That means, the researcher was not biased during participant's recruitment process, fair selection was conducted which was guided by the study sampling inclusion criteria.

3.17 Chapter summary

The chapter discusses the methodology of the study. The research design, emphasizing a qualitative, descriptive, and exploratory approach. The study population includes patients who have undergone coronary angiograms, with purposive sampling used to select participants and saturations were used to determine sample size. The research instruments included interviews, field notes and data collection procedures were followed. The data was analyzed using thematically. The chapter also addresses trustworthiness, covering credibility, dependability, conformability, and transferability, along with ethical considerations such as obtaining informed consent and ensuring confidentiality. A pilot study was conducted to refine the data collection tools, and member checks were used to validate the findings.

CHAPTER 4

PRESENTATION AND DISCUSSION OF FINDINGS

4.1. Introduction

The previous chapter described the study design and methods. This chapter presents the findings of the data that was collected. Data required was collected by means of face-to-face interview which was done face to face with the use of unstructured interview guide to coronary artery disease patients from Roman Catholic Hospital. The purpose is to explore the experiences of patients on the treatment of coronary artery disease who have undergone coronary angiogram procedure at cardiac center of Roman Catholic Hospital.

The researcher transcribed all the audio recordings from the interview using the thematic analysis method to analyze the data, since it is the most reliable strategy used in qualitative research, and it gives the researcher a chance to organize the information into themes and sub- themes.

Table 4.1: Characteristics of the study participants

Number of participants	Gender	Age	Employment status	Marital status	Educational Level	Other health problem
1	Female	50	Employed	Married	Grade12	High blood pressure, high cholesterol
2	Female	68	Pensioner	Widowed	Grade12	Diabetes mellites, high blood pressure
3	Male	52	Primary caregiver	Married	Grade12	High blood pressure, high cholesterol
4	Female	26	Employed (private)	Single	Tertiary	High cholesterol
5	Male	61	Self-employed	Married	Tertiary	High blood pressure, gout, high cholesterol
6	Female	70	Pensioner	Married		Diabetes mellites, high cholesterol

Marital status was significant because it affected the emotional and practical support that the participants had at the time of their treatment. Married patients reported better support from their spouse, influenced positively their adherence and emotional status. Single or widowed participants, in contrast, at times felt alone and had more difficulty handling care, emphasizing the meaning of social support for the experience of care.

4.2 Description of study participants

The research sample included six patients with coronary artery disease from Roman Catholic Hospital during the data collection period. The 6 participants of the study were interviewed face to face. Furthermore, the socio demographic data of the participants are displayed in table 4.1 in this chapter. On the demographic characteristics, for 6 patients with coronary artery disease Roman Catholic Hospital.

4.3 Demographic characteristics and gender differences in CAD

The demographic characteristics of the study highlighted that woman are more affected by coronary artery disease (CAD) compared to men. However, the onset of CAD tends to occur approximately ten years later in women than in men, primarily due to the protective effects of estrogen before menopause (56). Estrogen plays a role in regulating cholesterol and maintaining the elasticity of blood vessels, which may shield women from the early onset of CAD. After menopause, the protective effects of estrogen diminish, and women become increasingly susceptible to CAD, although the rise in CAD-related mortality is gradual rather than abrupt. The gradual increase in CAD risk over time is compounded by lifestyle factors that are common in older women (e.g. hypertension, diabetes and obesity) [75].

The study also shows that most of the CAD patients are above 50 years of age, reiterating the fact that aging is a potent, non-modifiable risk factor in CAD development. The clinical manifestations of CAD in men usually occur between the 50 and 65 years of age. Yet women tend to begin developing CAD 10 to 12 years later, usually following menopause [76]. Delaying the onset of symptoms is usually imputed to chiefly hormonal differences, most specially to the progesterative effects of estrogen before menopause.

World Health Organization (WHO) has declared that CAD is the leading cause of death among people older than 65 years and that the number of such deaths among women is increasing [77]. CAD prevalence in older populations is increasing worldwide as the number of older adults grows in comparison to the numbers of younger adults who are living longer. Consequently, with the growing population of elderly people, the burden of CAD has been on the rise, especially in developing countries where the numbers of elderly people are rising.

This trend is further aggravated by the aging of global population, on which CAD is projected to be one of leading causes of death worldwide in the upcoming decades [77]. Given the rising incidence of CAD in older adults, notably those who are postmenopausal, early detection, therapeutic lifestyle interventions and targeted health care strategies have never been more important for minimizing the risk of CAD in these high-risk individuals.

Finally, this study further supports demographic analysis of CAD patients: women develop CAD later than men, aging and menopause are key factors to the onset and progression of the disease. With the world becoming increasingly so, the burden of CAD is soaring and will be an unprecedented public health challenge of the coming years, particularly in older adults and women.

4.4 Presentation of the study findings

The findings presented in this chapter are based on transcriptions that were audio-recorded from face-to-face interviews ‘which in total consisted of 6 participants.

The findings revealed two (2) main themes; five (5) themes and eleven (11) sub-themes.

Table 4.1: Themes and sub-themes

4.4.1 Main theme: 1 Positive experiences of patients on CAD treatment	4.4.2 Main theme 2: Negative experiences of patients on CAD treatment
4.4.1.1 Theme: 1 Support system	4.4.2.1 Theme 1: Emotional factors
• Family & friends support (Sub-theme 1)	• Stress (Sub-theme 1)
• Health care system support (Sub-theme 2)	• Pain (Sub-theme 2)
4.4.1.2 Theme 2: Lifestyle modification	4.4.2.2 Theme 2: Risk factors
• Dietary changes (Sub-theme 1)	• Comorbidities (Sub-theme)
• Exercises (Sub-theme 2)	4.4.2.3 Theme 3: Consequences
• Positive mindset (Sub-theme 3)	• Physical limitations (Sub-theme 1)
• Changes in routine (Sub-theme 4)	• Financial crisis (Sub-theme 2)

4.4.1 Main theme 1: Positive experiences of patients on CAD treatment

Theme 1: Support system

Sub-theme 1 Family and Friends' Support

The study found that family, friends and faith in God played a very important role in helping people live with coronary artery disease (CAD) by supporting them to cope with all this. Emotional stability, sources of encouragement as well as hope gained from these sources of support will be essential in maintaining resilience when things get difficult. Participants also wished to emphasize the involvement of family support in their journey. P3 share, *'My family taken the feat that I went through' and my daughter likes to treat me and treat my life."* For instance, this demonstrates how people around us provide care with attention and caring which aids in feeling valued and understood. P5 echoed, *'That was my family, my brother, my daughter, my mom, they set me going.'* This statement points to the family members' encouragement and moral support role.

Additionally, the results demonstrate that a large network of supportive families and friends can also be enormously useful. Other than emotional comfort, these relationships can also be a practical help and help patients navigate their condition easier. Family and friends are important contributors to the patient's wellbeing and recovery, whether it be through listening, sharing responsibilities, strokes of encouragement, or many other ways, through a show of anyone in the patients' lives. Looking at the study, it throws light on how captivating family, friends, and faith are to assist individuals to tackle CAD's challenges. These support systems do not only give comfort and bring encouragement, but they also form a base for emotional resilience and hope that improves the quality of life of the patient.

Moreover, the results are congruent with the stress buffer social support model, in that, the existence of supportive relations reduces the mental burden of the stress due to sickness. This is directly connected to the theoretical framework in which social support is included as one of the main factors that affects how the person experiences medical treatment for CAD. Participants discussed the comforting aspects of having family and friends participating in tangible forms of support (eg, accompanying them to appointments, orchestrating medication regimens, or advising them on dietary choices) as they negotiated their chronic illness. This is consistent with the direct-effects model of social support that suggests that supportive relationships lead to well-being regardless of stress.

These observations are also consistent with literature. The literature mainly agreed that patients with significant family support are more likely to have better compliance, lower stress, and higher satisfaction with their care. Similarly physical and emotional anchoring to loved ones offered to CAD patients increased coping resources and subjective QoL. These results are in accordance with the theoretical framework of the biopsychosocial model, which incorporates effects of social relationships on health.

Sub-theme 2 Health care system support

Therefore, this study finds that patients with coronary artery disease (CAD) make shifts in their active management, showing resilience and reduced fear of the disease. This change in mindset exhibits their confidence in taking the proactive approach and emphasizing health over their condition.

From the patient experiences of those suffering coronary artery disease (CAD) it was apparent that there was also a strong correlation between how well they did and healthcare system support and how they were treated, as one of the patients, during their treatment says, *'What the doctors have done for me through their support & assistance so help me to pull through keep up.''P4*. An important theme that came through most consistently was highlighted as access to appropriate healthcare professionals and clear communication at the qualifying stage. They said that the importance of regular follow-ups in managing the condition was played by many patients. The fact that these appointments were available meant that they could discuss openly their symptoms and concerns, which made them feel more supported and reassured. Not only was this the best part of physical health but it helped towards emotional health as well as encouraged treatment adherence after someone prescribed treatment.

What was emphasized as a crucial aspect of healthcare is that healthcare should take a comprehensive approach to treatment of those patients. They also reported that beyond the traditional medical interventions, medication and surgery, effective management of CAD involved better management. Furthermore, they showed gratitude for healthcare teams that included lifestyle guidance, stress management and mental health. Such a holistic approach helped them confront those lifestyle challenges of living with CAD and engage in the changes that are often necessary with better ease. All aspects of health treated. Patients felt comfortable that the diverse specialists (cardiologists, dieticians, etc.) were all considering and treating all parts of their health.

It was identified that along with physical care, emotional and psychological support for CAD were important. Otherwise, healthcare professionals gave participants the impression that this was the case of reassurance that helped to maintain one’s mental health, especially when a diagnosis was issued to them. The work of the nurses, the cardiologists and the counselors were especially called on for both medical assistance and comfort. This gave patients the ability to develop resilience, address anxiety and stay motivated to change their behaviors. Participants cited how the emotional support of healthcare providers increased their capacity to stick to treatment plans like prescribed medicines, exercising etc.

Healthcare system support was another part of education, and many participants were right though it was necessary for them to understand what was going on with them. Giving those with coronary artery disease clear and access information continues to help make them feel empowered to take control of their health. It provided the confidence to the patients to make an informed decision on their care, and for active participation in managing their condition. The second finding was that effective education both improved adherence to medical advice as well as enhanced patients' ability to deal with the intricacies of CAD by giving them a better sense of control and understanding.

Key factors in the patients' experiences were also the role of coordinated care. People who had access to a well-integrated and coordinated system of healthcare were more satisfied with receiving the treatment they had. They liked the fact that their healthcare providers worked together so that referrals from one specialist to another occurred in timely fashion and their care was continuous. This continuity of patients established the trust, peace of mind and sense of good that patients had about the continuity of care they'd be receiving would encourage a degree of commitment to follow through with treatment and to stay healthy.

It then concludes that effectively managing CAD requires a proactive attitude towards treatment, high support and spiritual resilience. These elements help patients overcome fear to live their lives to the fullest contrary to the forces of their diagnosis.

Theme 2: Lifestyle modification

The adjusted lives individuals lead after diagnosis include yoga codes, routine changes, self-control, exercise, and dietary modifications. It is a theme of actions that led to adaptation to the challenges brought by the condition. The main intent behind these lifestyle alterations is to address the above-mentioned physical and mental well-being, for recovery and avoid further complication.

Sub-theme 1 Dietary changes

The study findings show that patients often make dramatic changes in their diet after diagnosis of coronary artery disease (CAD). It becomes a key aspect of adjusting one's diet and helping to manage the condition as well as your overall health.

The insights showed how their eating habits changed from diagnosis. You see as P6 stated*, I was a heavy meat eater, but nowadays I am eating vegetables and fruits.' In a sense, this was a decision to add healthier food choices into daily meals*. P2 also explained that *'she is a bit off from the meat. Free from antibiotics and sugar, I eat more fruit, vegetables, and drink milk*. Therefore, this suggests reduced red meat intake, which agrees with dietary advice for patients with CAD.

Other participants, besides reducing the amount of meat at spins, said to avoid unhealthy foods. As an example, P5 admitted, *"I do not eat junk food. I eat some fruit, but I do not eat junk food. I don't even drink Coke or Pepsi."* It highlights the fact that they are shifting their eating habits to include nutrient dense foods and eliminate sugar rich drinks and processed foods which could worsen their condition.

Not only are these dietary changes important to manage the symptoms, but they are also helpful as a proactive and preventive measure against the occurrence of further complications of CAD. The findings highlight the need for nutritional education and support for patients because these changes often need joint effort and the implementation of a new lifestyle. Patients can control their condition and enhance their quality of life if they give priority to fruits, vegetables and other healthy foods. Effective CAD management involves following dietary changes as a cornerstone. A proper balance of a balanced and nutrient rich diet and away from harmful foods helps reduce the risk of further cardiac events and plays a very important role for our overall well-being.

Sub-theme 2 Exercises

The result shows that patients include physical activity and mindfulness practice, such as yoga, in their lifestyles to follow a healthy outlook and physical fitness. In this respect, taking proactive steps in reducing stress and enhancing general well-being through such practices as yoga and exercise have been shown to help people cope after they get a diagnosis of coronary artery disease (CAD). I told P1 '*that after my diagnosis, I knew I had to do something for myself. The thing that helps clear my mind is I started taking very short walks every morning. I also did yoga class too, and that helps a lot with how I feel, physically and mentally. They stretch and breathe me, relax and take away stress. I'm much more in tune to having my body's energy and having more energy. The exercise has helped with that I don't feel so worried about my heart condition. I just know that I'm doing something good for my health."*

The lifestyle changes reflect the ability of patients to be psychologically resilient and adapt. Apart from helping heart health, engaging in physical activities such as walking, stretching or yoga help improve mental health and emotional stability. In this sense such practices help patients to prevent complications further associated with CAD, provided they are correspondingly regulated. Exercise of all kinds helps with circulation, strengthens the heart and improves energy, and there are yoga and mindfulness classes that particularly help with emotional balance and fight feelings of anxiety. Together, these activities help the patients feel better both socially and emotionally and make them empowered to help them actively control their condition.

CAD management requires fundamental implementation of exercise and mindfulness practices into daily life. Consequently, prioritizing the work lifestyle improves the overall quality of life for the patients, also to increase the forecast, as resilience and adaptability are essential for dealing with chronic health problems.

Sub-theme 3 Self-control

So, self-control is an important factor in maintaining health and in effective treatment of coronary artery disease (CAD). Such change does not just involve behavioral adjustments; it entails mental and emotional acceptance for the condition as well. Patients' acceptance of diagnosis, willingness to work with this diagnosis, and being willing to change to adjust to the fate of living with this disease are also being marked by this.

Participant number 2 concurred, saying, *'It's not the end of the world'. I take care of myself, I take the medicine, I follow up with the doctor."* This response implies the need for a proactive and responsible approach to handling the condition. P1 also *recalled that it's something that is going to be there for all my life. I can deal with that, I have come to terms with that, and life's good. There is nothing wrong with dying, but the death is not the end of the world because we have the medical team ready to support us and help us."*

These statements underscore the transformative process of self-control, Schnittker, Freese, Powell [80] which includes:

1. Acknowledgment – Recognizing the condition and its permanence.
2. Adaptation – Embracing the necessary lifestyle changes, including medication adherence and regular medical consultations.
3. Optimism – Maintaining a positive outlook despite the challenges posed by the condition.

Conversion is not merely acknowledging the CAD that is but really embracing the ways of dealing and resources that enhance health and quality of life. Patients who possess self-control and acceptance are more capable of coping with physical as well as emotional impulse of living with CAD, which is being resilient and taking care of oneself.

Being able to self-control and accept what you're going through is key through the journey of living with CAD. It gives the patients the opportunity to learn how to deal with their problem with something new, they not only depend on the medical aid as well as changes of lifestyle to keep themselves healthy. Such holistic approach leads to better outcomes, and it also empowers patients to lead fulfilling lives despite the fact of the diagnosis.

Sub-theme 4 Changes in routine: non-smoking and spiritual modification

However, lifestyle or mindset changes are also reflected by the study findings, which included a change in lifestyle by quitting smoking and by using spiritualism to change mindsets after diagnosing coronary artery disease (CAD). All these changes represent an attempt to stem the condition holistically, emphasizing the spirit, as well as the body and the mind.

The diagnosis was a turning point for the ones who were smokers. As a part of the commitment to quitting smoking, they made a promise to do it to get healthier and better manage their symptoms. In addition, they reported a progressive feeling of spiritual linked growth in faith in a greater divinity and the practicing roles for healthcare professionals that are supporting them. For instance, one of the participants told us, ‘What the doctors have done for me with their support helped me come this far and pull it through, keep it up (P4).’ *The importance of trust in the patient doctor emerges in this, highlighting its important part in ensuring compliance with treatment and alleviation of hope.*

According to Participant P6, *it takes a certain mental effort to settle when you have CAD: I don’t have a cardiac problem like this, I try*. In the same vein, Participant P1 also said ‘that it is not a marathon, and it is not a race’. *The conditions I have put on myself I already know how to live with, so I can live with it. It still needs to be coped with somehow.”* This is the importance of applying a positive mindset as a way of handling challenges of being with a chronic condition. Also, the addition of spiritual beliefs enhances support. Sometimes faith in God becomes a strength for patients when they have CAD. It is an addition to the emotional and practical support of family and friends and is a complete system of support.

This indicates that spiritual modification and positive outlook can help to a larger extent in management of patients with CAD. Patients are made more resilient, have broader faith and are better at embracing incremental progress towards recovery. Transformative change includes quitting smoking, establishing trust in healthcare providers, and becoming more spiritual, which all improve one's overall wellbeing when dealing with CAD. With these adjustments, and a good mindset, patients can get stronger and more optimistic in their ability to get on with their life knowing that their new reality, even with this obstacle, is manageable.

4.4.2 Main theme 2: Negative experiences of patients on CAD treatment

From the numerous codes, two main themes, five themes and eleven subthemes were identified, as shown in Table 4.2 These themes include emotional factors, (encompassing subthemes such as pain, stress, and panic attacks), risk factors, with comorbidities as the primary subtheme; aftereffects or consequences, including physical limitations and financial crises; lifestyle modifications, which involve subthemes such as exercise, dietary changes, self-control, and changes in routine; and finally, the support system, with subthemes focusing on support from family and friends as well as the healthcare system. Among these, the support system emerged as the central theme, drawn predominantly from the interviews.

Theme 1: Emotional factors

The generated codes captured a broad spectrum of human emotions, such as pain, sadness, fear, stress, worry, and panic, which played a significant role in the emergence of this theme. These emotions were shown to have a thoughtful impact on both mental and physical well-being, as highlighted by the participants. P6 said, *"I feel like I'm* *constantly under pressure at work, at home, even when I'm just trying to rest. There's always something to worry about. That is as well, but when I'm stressed so much I can feel my chest tighten. As if my heart is literally in a battle ghetto. My doctor tells me to relax, and relax I must, but if life is so hard how can I relax? So, in truth, I think stress is making my condition worse."* The study findings showed that stress plays a key role in the development of coronary artery disease (CAD) and is strongly linked to it. CAD merely points to the fact that we must pay equal attention to emotional distress and physical conditions like CAD to reduce their risk.

Sub-theme 1 Pain

The study showed that the most common and distressing symptom of coronary artery disease (CAD) is chest pain starting suddenly. This sharp and intense pain of the chest may provoke participants to seek immediate medical attention such as in emergency departments or clinics with a stronger need to do so when the pain becomes so unbearable. Even in many cases, people describe pain as a warning that their condition is getting worse, heightening anxiety and the pressure to receive professional care immediately.

Other symptoms commonly seen with CAD that participants reported were shortness of breath, abdominal or gastric pain, also listed as heartburn, nausea, and vomiting. Some of these symptoms overlap, and so in the absence of medical intervention patients may be unable to distinguish the severity of their condition. In fact, the pain is more commonly connected to triggers including physical exertion, insufficient rest, and, of course, emotional stress. People whose arteries are blocked or narrowed have an increased demand for oxygen, which can cause ischemia (reduced oxygen supply) and the feeling of chest pain when the triggers, which include exercise, are experienced.

Similarly, Participant P5 spoke about symptoms felt*: "Sometimes I get a little bit of chest pain, burn back pain and tired." Just as it might be any kind of comfort in the chest, this testimony emphasizes the hodgepodge hallmarks of CAD symptoms, in which pain could be not only in the chest, but also in the back and overall fatigue.*

Participants described the pain with terms like "sharp" and "dull," and while there was variability in both the intensity and quality of pain in between the data points, it is often stated as such. The distinction in pain quality focuses this how different individuals perceive and experience the same underlying condition in different ways.

More intense description was given by participant P4 regarding his chest pain, saying '*Very heavy, heavy feeling here on my chest and the shortness of breath. When I am trying to take my breath, my chest wants to close and is too tight and painful."* This description is detailed, talking about how severe and how uncomfortable CAD is for a patient, that it seriously affects their ability to do normal activities and their emotional state.

Participants also reported another significant symptom dyspnea (shortness of breath), P4 said, *"Sometimes I feel like I just can't get enough air even while I am sitting down and doing nothing". How scary it is that even walking a short distance leaves me breathless. I must constantly catch my breath. "That is sometimes associated with ischemic heart disease, and it's one of the worst parts in doing this, because even the most basic task gets tiring."* A lack of oxygen in the body, coupled with breathlessness is caused by the heart's inability to pump blood efficiently, which is also known as dyspnea. As with chest pain, this symptom impairs a patient’s ability to go about daily activities, and it may raise a patient’s anxiety and distress.

Most patients who seek immediate medical attention have chest pain that is the hallmark symptom of the disease. But the study also indicated that some of the other symptoms, such as wheezing, heartburn, nausea and fatigue, are common to chest pain and make the clinical picture complicated, P3 said the 'tight feeling' in my chest doesn't just mean pain.' I also have a sensation of something burning up in my stomach, almost as heartburn, and I feel nauseous. However, it’s hard to say if the stomach issue is my heart or if the heart is just acting up. Even though I do not rest all the time, there are times when I get so tired that even after resting my breathing becomes shallow. It would be confusing because, all these things are happening at the same time, and I don’t know if it’s one thing or the things together causing these symptoms - it’s this.”. This further highlight that effective management of CAD needs to be performed at initial diagnosis and should address both the cure of the physical disease and the cure of the emotional impact of the disease.

Sub-theme 2 Stress

Results from the study also demonstrated that the perception of burden of responsibilities and fear of mortality significantly contributes to elevated stress in individuals with coronary artery disease, or coronary artery disease (CAD). Patients face these emotional challenges, and these emotional challenges can weigh heavily on patients; this is very damaging on the patients’ mental health as well as on their wellbeing. The words of Participant (P2) reflect this, “You get stressed sometimes and once you can handle that. A person becomes much stressed when he must try to shoulder more responsibilities and to fear losing his life." This reveals the two crises that patients experience: pressure to carry on with daily duties, and the queerness of their own health condition.

Having stress both does as well as makes the symptoms of CAD worse, creating a vicious cycle. For that reason, it is imperative to devise ways to alleviate patients' stress. Mindfulness, counseling, time management and family and friends support can all help contribute to reducing stress and the patient's good quality of life.

The results of the study emphasize that the stress caused by the burden of responsibilities and fear of mortality heavily affects CAD patients. To promote resilience and improve one's own health and well-being, it is critical to decrease all those stressors via emotional support and coping mechanisms.

Theme 2: Risk factors

Sub-theme Comorbidities

The risk factors identified by the findings included comorbidity, work pressure and polypore. Unlike the second factor, it is important that we recognize and address these first so as not to incur too many problems in the future. Early identification of these challenges and strategies to reduce them may prevent complications and improve on overall outcome. If we deal with these factors, we can therefore design a better and healthier sustainable environment for the workplace and in broader terms.

The practice of different factors that influence coronary artery disease (CAD) is ignored and sometimes misinterpreted causing delay in diagnosing and treatment of this disease. "Although the risk factors are the same for men and women, women have different heart attack symptoms compared to males," P3 said. P6 also added that managing CAD also includes reducing stress, controlling blood pressure, making dietary changes and remaining physically active to reduce the risk.

Risk factors mentioned in the study included stress, high physical activity, hypertension, poor diet, neglect of chest pain, smoking and a history of snoring. However, many patients fail to recognize or ignore the early symptoms, which they believe are no cardiac problems like eating discomfort. One example is when one participant believed that their symptoms were due to acid indigestion that would get better if their level of stress reduced and only sought medical attention when the symptom seemed to improve which they only realized later because of other people's reactions to their symptoms. Such accounts emphasize the need for increased public awareness of atypical symptomatology of CAD. Also, neglecting early symptoms and having repeated episodes after strong physical activity are provided as important risk factors of the condition [78]. Like that, Zerwic et al [79] highlighted that knowing risk factors does not mean people attempt to treat them, and if so, it can delay the spread of the disease.

Besides being aware, there must be proactive measures to bridge that gap. It is critical to stress management, education about CAD symptoms, lifestyle interventions like dietary changes and smoking cessation and routine health screenings. Addressing these areas will enable healthcare providers to provide patients with responsibilities to their health and intervene timely to reduce the total burden of CAD.

Theme 3: Consequences

Sub-theme 1 Physical limitation

The findings included that many of these people that have coronary artery disease (CAD) face physical limitations, spiritual struggles and even financial crises. They can be hit by these obstacles very hard, which has a major negative effect on their general well-being and life. Another one, Participant (P1) described how emotional peal of physical limitations are, “I am a pastor and other community activist and many things.” I cannot do some of my duties like before. The loser of a sex change is the wonderful feeling of loss and losing of identity that goes along with physical incapacity, especially for body sex change people who are used to being active and multiple persons in their neighborhood.

The challenge of emotional issues is another, and this can come in the form of regret as people review lifestyle choices or other opportunities they may have missed before their diagnosis. But naturally, it is important to note that if regret isn’t managed, it will quickly become a weight dragging people down and stop them from experiencing life’s opportunities. Instead, patients should try to focus on a sense of growth, self-improvement and resilience to help move on with something new and fresh.

The study is also interesting in that it found silver linings to these problems. Although overwhelming, they can provide a great source of resilience, personal development and a greater appreciation of life. Altering the affected patients' priorities, increasing their faith, and finding new coping mechanisms is the result of overcoming difficulties arising from CAD. These adaptive responses not only enhance their lives, but they provide strength to take the turns that setbacks present as steppingstones of future success. By no means have physical, spiritual and financial challenges easy, but all of them offered a chance to grow as a person. Instead, those so diagnosed must face these challenges, acknowledging them for what they are, and work to build resilience and grow in the face of CAD.

Sub-theme 2 Financial Crisis

The study also shows that managing CAD often requires large changes in the diet, including eating food that is nutritionally balanced, and kinds of food. The problem is, however, that the cost of maintaining this type of diet is prohibitive for most patients. Healthful food choices like products lacking fat, avocado oil, and other foods on the recommended diet regime are typically more expensive than less healthy options, meaning patients find it tough to stick to these guidelines.

Participant P3 explained at what point the *"moving into change process" has been hard, with this struggle, "It's been hard to move into change and just to meet halfway because of finances. As a matter of fact, it is very hard for me to eat fat free food. I think I tried to run on, and its mind boggling to buy avocado oil and all these healthy oils and oil that are essential is quite expensive*. This point reflects the contradiction between what heart-healthy diet is needed and the restricted financial resources of many of the patients.

The bad news there is that you can't eat fruit, veggies, and whole grains and not only lose weight, but save money as well. The financial burden usually runs into tens of thousands of dollars; that often results in frustration and helplessness, especially for patients from low-income households. This emphasizes that a large portion of clinical and personal involvement in CAD management involves dietary solutions that are both open and economical for people dealing with CAD. Some of these challenges may be prevented by public health interventions such as subsidies for healthier food options, nutritional education or community support initiatives.

CAD is all about getting money from within the system to be able to afford to follow a healthy diet, and therefore, its financial challenges highlight the need for such systemic solutions to the economic barriers to a healthy diet. There is the need to ensure that the patients have access to affordable, nutritious food options that will greatly contribute to effective disease management and improved health outcomes.

4.5 Discussion and literature control

This study revealed that emotional triggers, lifestyle changes, comorbidities, and social support significantly influence the onset and progression of coronary artery disease (CAD). Addressing both psychological and physical aspects is crucial in its management. Family support and lifestyle modifications were especially pivotal in improving outcomes and easing the burden of CAD.

Patients often experience a range of emotional and physical symptoms such as chest pain (often exacerbated by exertion or stress), shortness of breath, heartburn, nausea, and panic attacks. Chest pain emerged as the most common and alarming symptom, often prompting delayed but eventual medical consultation, consistent with previous studies. Non-cardiac pain further complicates diagnosis and contributes to delays in treatment.

Stress and depression were notably linked to emotional burdens such as fear of death or recurrence. This aligns with earlier findings that highlight the psychological impact of CAD, including anxiety and persistent mental strain. Research also confirms a high rate of emotional distress in patients with acute coronary syndromes, affecting long-term health outcomes.

CAD can be well managed with accurate diagnosis. Such tools as stress testing, ECGs, chest X-rays and blood testing aid in early diagnosis and tracking the response to treatment. Early clinical detection and an advanced analysis of these symptoms also are critical for the quality survival of patients.

Multiple risk factors - smoking, high blood pressure, bad diet, genes, and environmental stressors - interact in intricate ways. The management of CAD needs to be multimodal with modifiable (e.g., lifestyle, diet) and non-modifiable (e.g., age, family history) dimensions. A strong genetic predisposition underscores the importance of early screening and education in high-risk populations.

Diabetes as a co-morbid condition increases cardiac risk even more. The mortality rate was higher in DM patients with low CFR. Customized treatment and application of advanced imaging will contribute to therapeutic efficiency in these populations.

Most patients only start a healthy change of lifestyle after severe pertussis occurs, suggesting the importance of proactive education in early warning signs and preventive measures. To minimize your risk, read more: Give you the facts you need to make informed choices. Informed patients are empowered patients who can lead healthier lives and make healthier choices.

Cardiac rehabilitation programs consisting of physical activity, psychological assistance and education are recommended by clinical guidelines as a cornerstone of CAD care. Moderate regular intensity training increases cardiovascular fitness, decreases hospital remissions, and reduces mortality. Larger exercise capacity has been shown to be associated with improved long-term cardiac prognosis.

There are also dietary modifications that are essential in the management of CAD. Many patients find it difficult to change habits and adopt heart-friendly diets, since nutritional information is lacking. Structured dietary education is effective in modifying patient behavior, especially when accompanied by physical activity intervention. Other diets including the Mediterranean diet are closely related to cardiovascular morbidity decrease.

Behavioral self-control (i.e., self-monitoring and proactive behavior towards health) is highly associated with adherence and long-term disease management and is a central component of patient-provided communication. Patients described feeling self-directed in their approach to healthy living, which can build confidence and set the stage for long-lasting transformations in lifestyle.

Cessation of smoking and spiritual approaches were also identified to be significant. One-on-one counseling, particularly in person, can substantially increase a person’s chances of quitting smoking long term. Spiritual support, such as prayer and meditation, enabled the patients to cope with emotional stress and fear of recurrence and helped to enhance their resilience.

The research points out that effective CAD intervention is a combination of dietary restriction, physical activity, cessation of smoking and alcohol addiction coupled with spiritual and emotional support. Extended counseling and individualized attention are necessary to assist individuals in maintaining these changes.

Patients need to have a strong social support network, especially from family and friends. They offer emotional support and help manage day-to-day disease control, such as medication adherence and lifestyle adherence. Studies have suggested that positive family engagement is associated with more effective communication, higher self-efficacy, and better outcomes.

Family Systems Theory helps explain how these interpersonal dynamics influence patient behavior and recovery. Encouraging attitudes from spouses and friends promote emotional resilience and motivation. Healthcare professionals also play a central role by offering medical guidance, emotional support, and reinforcing patient self-management strategies through frequent contact and shared decision-making.

4.6 Chapter Summary

As a strategy to improve patient provider communication and build patient confidence, the inclusion of shared access to personal health records has been noted prominently an effective, yet underused [123]. By underlining the potential impact of integration of family, social and professional support into health care strategies and noting that this type of network can shape the health outcomes with significant influence on better disease management, and that this type of network still has not been fully exploited. Some 6 participants' interviews are highlighted in the chapter and the central themes include emotional factors, risk factors, aftereffects, lifestyle modifications and support systems. Risk factors such as comorbidities and lifestyle choices as well as emotional factors like stress and pain play a big role in progression of CAD. The aftereffects include physical and monetary limitations. Thorough lifestyle modification programs consisting of dietary alterations, exercising, and quitting smoke were found to be instrumental in managing CAD and backed up by strong support systems from family, friends and healthcare providers. The implications are that there is a general need for dealing with CAD management in a way that early detection, lifestyle changes, emotional resilience and robust network supports are required to improve the patient outcomes and quality of life.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The treatment of CAD is not an equation limited to medical therapies, but rather as system-level approach to health that involves patient engagement and service redesign and policy changes. Finally, this chapter ends by presenting the study destiny and with the conclusions that arise from its results: the need for lifestyle-oriented measures in conjunction with patient support in health care initiatives and systemic change for the improvement of patient welfare and disease control. Furthermore, this chapter Provides recommendations following findings of the study and concludes that patient centered, established networks and policy changes should be adopted to enhance the outcomes for patients with CAD.

5.2 Conclusion

This study aimed to find out the experiences of the patients of the coronary artery disease at the Roman Catholic Hospital Cardiac Centre in Windhoek, Namibia. The results will give an idea about how patients approached these along with the support that was there and the experience of the entire treatment process.

5.2.1 Objective 1: Explore the experiences of patients on the treatment of coronary artery disease at Roman Catholic Hospital

Patients discovered physical and emotional difficulties during their treatment. Many were accustomed to changes in their lifestyles, medications compliances, and managing the psychological shift of having a chronic disease. However, family, health care professionals and community network assisted them to cope with these challenges. Three major factors of bettering patient confidence and following through with treatment plans included having clear health information and effective communication with medical providers.

This study therefore explored into how patients were living their experiences as it relates to that of CAD treatment at the Roman Catholic Hospital in Windhoek, Namibia. It used a qualitative approach to identify critical themes relating to patient outcomes, the emotional, risk, consequences, lifestyle modification, and support systems. CAD management goes beyond the medical interventions to psychological, social and economic dimensions, and clearly the findings of the study reflect the sophisticated activity involved.

5.2.2 Objective 2: Describe the experiences of patients on the treatment of coronary artery disease at Roman Catholic Hospital

Treatment included a melding of therapies of various medical types, and lifestyle modifications and emotional adjustments that were the patients' experiences. Others appreciated the prescribed treatments but were unsure about their accessibility and affordability of cardiac care. As noted by the study, healthcare should consider mental and emotional aspects as an important part of patient well-being. Furthermore, the addition of social and familial support into treatment strategies leads to positive patient outcomes.

In summary, this study concludes that CAD treatment should be patient oriented in such a way that medical, psychological as well as social aspects of care are utilized for patient's treatment. By enhancing healthcare communication, increasing patients' access to necessary resources and creating a supportive environment, the overall treatment experience and wellbeing of CAD patients can be positively improved.

5.3 Recommendations

Several strategies were recommended for implementation at different levels including at both the healthcare provider and government level, patients, and researchers.

5.3.1 Healthcare Providers

The study findings reveal critical gaps in current CAD management that healthcare providers must address. First, implementing structured patient education programs is essential to improve awareness of CAD symptoms, risk factors and emergency responses. These programs should particularly emphasize smoking cessation and dietary modifications, which emerged as the most challenging lifestyle changes for participants. Second, integrating psychosocial support into standard care protocols is vital which includes routine mental health screening during cardiac consultations and establishing referral pathways to counselling services. Third, decentralizing cardiac care through strengthened regional referral networks and subsidized medication programs would significantly improve access, especially for rural patients who currently face substantially longer wait times for specialist care than their urban counterparts.

5.3.2 Policymakers

Based on the study, the paper advised that policymakers should concentrate on creating a setting that gives priority to the provision of CAD prevention and management. National public health campaigns should be launched to raise awareness about the prevention and modifiable risk factors of CAD promoted by activities of smoking, diet, and sedentary lifestyle. Killer collaborations with community leaders can help get to underserved populations or at least get more bang for your buck, while enticing violence of vegetables or promoting fruits and vegetables to make them affordable to low-income households could be, and in some cases are, very powerful. Improving the healthcare infrastructure will also require expanding cardiac care facilities beyond Windhoek and investing in cardiovascular care training programs for specialists in the field of healthcare.

An environment that allows for prevention and management of CAD is established by policymakers. It is aggressive enough to launch nationwide public health campaigns aimed at increasing awareness of controllable risk factors, namely, smoking, unhealthy diets, and physical inactivity. Partnerships with the community leaders can help so that prevention initiatives reach underserved populations. Furthermore, supporting the affordability of nutritious foods should be subsidized for low-income households and workplace wellness programs should persuade healthier lifestyles. Improving healthcare infrastructure, however, requires the expansion of existing cardiac care facilities beyond Windhoek and provision of specialized training to hospital professionals. The adoption of these strategies can facilitate the decrease in prevalence of CAD and improve the public health outcome of the global population.

5.3.3 Patient Empowerment

The study identified three critical factors for successful patient self-management. First, practical behavior changes, particularly adoption of Mediterranean-style diets and monitored exercise regimens, proved most effective for long-term adherence. Second, structured peer support networks significantly improved outcomes, with engaged patients maintaining nearly double the medication compliance rates of isolated individuals. Third, digital health solutions emerged as a priority need, especially among younger patients who strongly preferred app-based symptom trackers and telehealth options over traditional care models.

5.3.4 Future Research

More general future research would address the existing gaps in knowledge and practice. Investigating the rural CAD patients' experiences can reveal intricate opportunities and barriers to care. Additional study to separate out the gender differences in CAD experience influenced by hormonal and social factors can produce specific solutions. Furthermore, this will help to guide the improvements of existing healthcare policies and programs to reduce CAD burden and explore the economic feasibility of universal healthcare coverage for chronic diseases.

Coronary artery disease is not just a medical problem; rather it is a complex experience, strongly disrupting the whole life of a patient. Participants showed emotional distress and their sense of control over their daily life was lost. In addition, this further study showed the extent of the immense suffering undergone by the patients and relates to the psychological and social side of CAD other than the medical difficulty in living with a disease. The foundation of sustaining patients emotionally and promoting adherence to treatment plans was identified as family support.

Although the rates of survival improved due to advances in diagnosis and treatment, CAD is leading the world in mortality and morbidity. It is no surprise that the condition has occurred and spotlight the need for further research, novel approaches, and cooperation in the realm of researchers, clinicians, and allied professionals. Although lifestyle factors play a significant role, these are not the sole factors involved, as their development as well as progression are also very due to the genetic factors.

Outpatient services, including physician consultations and mental health care, also had mentioned in this study to be gap in accessibility and affordability. CAD is a burden because of the intersection of poor lifestyle habits, inadequate care access and comorbidities. However, the insights from this research will be useful in helping healthcare professionals' nurses, physicians, and others in ways to empower CAD patients. This allows practitioners to provide holistic care approaches by addressing both the medicinal and psychosocial aspects of the disease to better quality of life. Ongoing innovations in CAD management will alleviate this serious health problem as CAD continues to have a profound global impact.

5.4 Summary of the Chapter

The study shows that CAD is considerably more than in a medical condition, affecting a whole host of aspects in a patient's life. Insights of key themes focused on emotional distress, felt lost control, and the significant importance of strong support systems. Medical advancements aimed at increasing the survival rates of CAD have not yet been able to diminish its high impact on the global health threat. To generate better patient outcomes healthcare accessibility and affordability should be bridged and treatment approaches based on holistic approaches should be emphasized. However, as the findings provide key insights for the healthcare professionals, policymakers and researchers on how to manage this effectively, there is a need for collaborative efforts.

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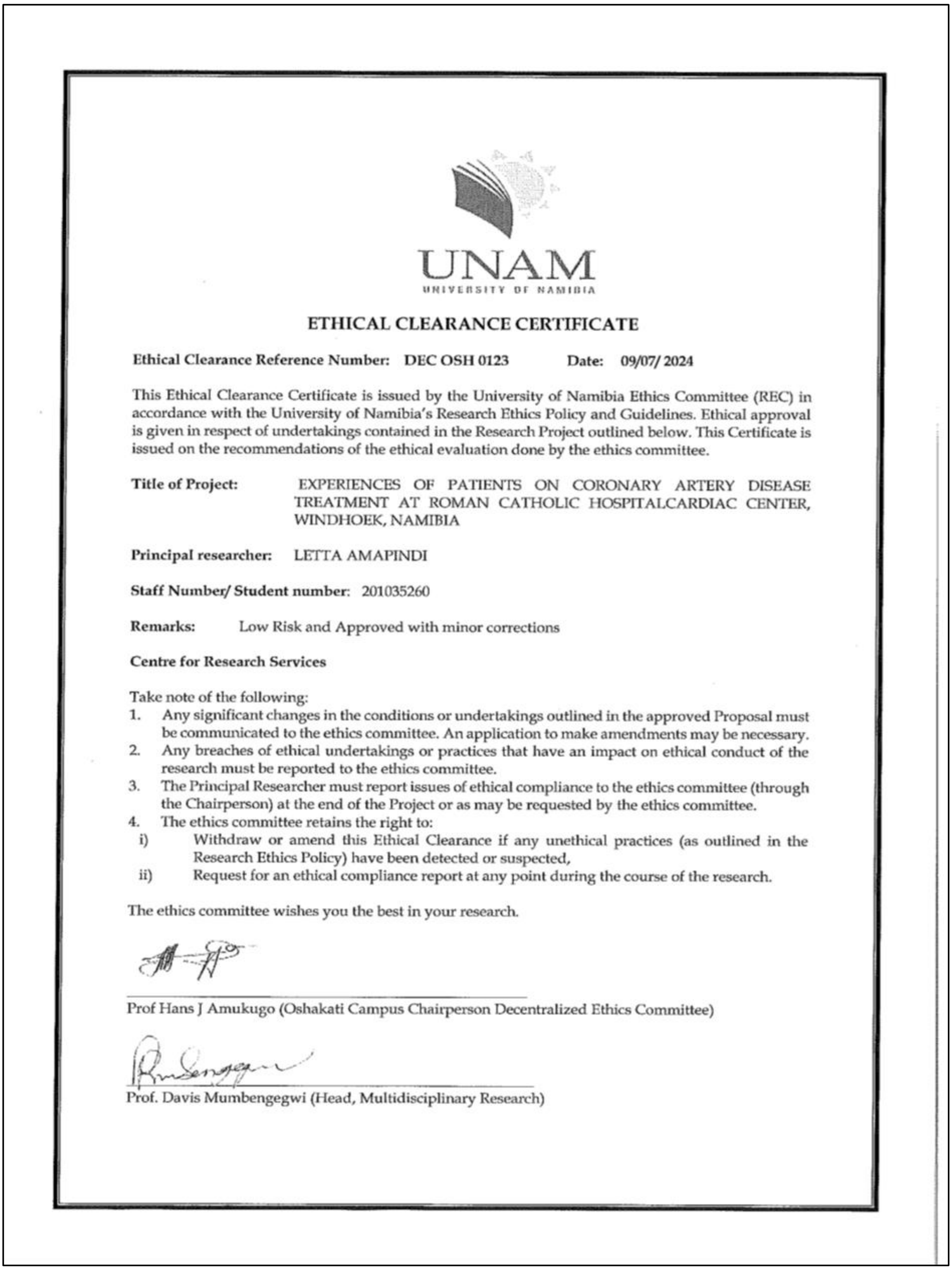
APPENDIX

Appendix 1: Ethical Clearance Certificate UNAM



UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: DEC OSH 0123 **Date:** 09/07/ 2024

This Ethical Clearance Certificate is issued by the University of Namibia Ethics Committee (REC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the ethics committee.

Title of Project: EXPERIENCES OF PATIENTS ON CORONARY ARTERY DISEASE TREATMENT AT ROMAN CATHOLIC HOSPITALCARDIAC CENTER, WINDHOEK, NAMIBIA

Principal researcher: LETTA AMAPINDI

Staff Number/ Student number: 201035260

Remarks: Low Risk and Approved with minor corrections

Centre for Research Services

Take note of the following:

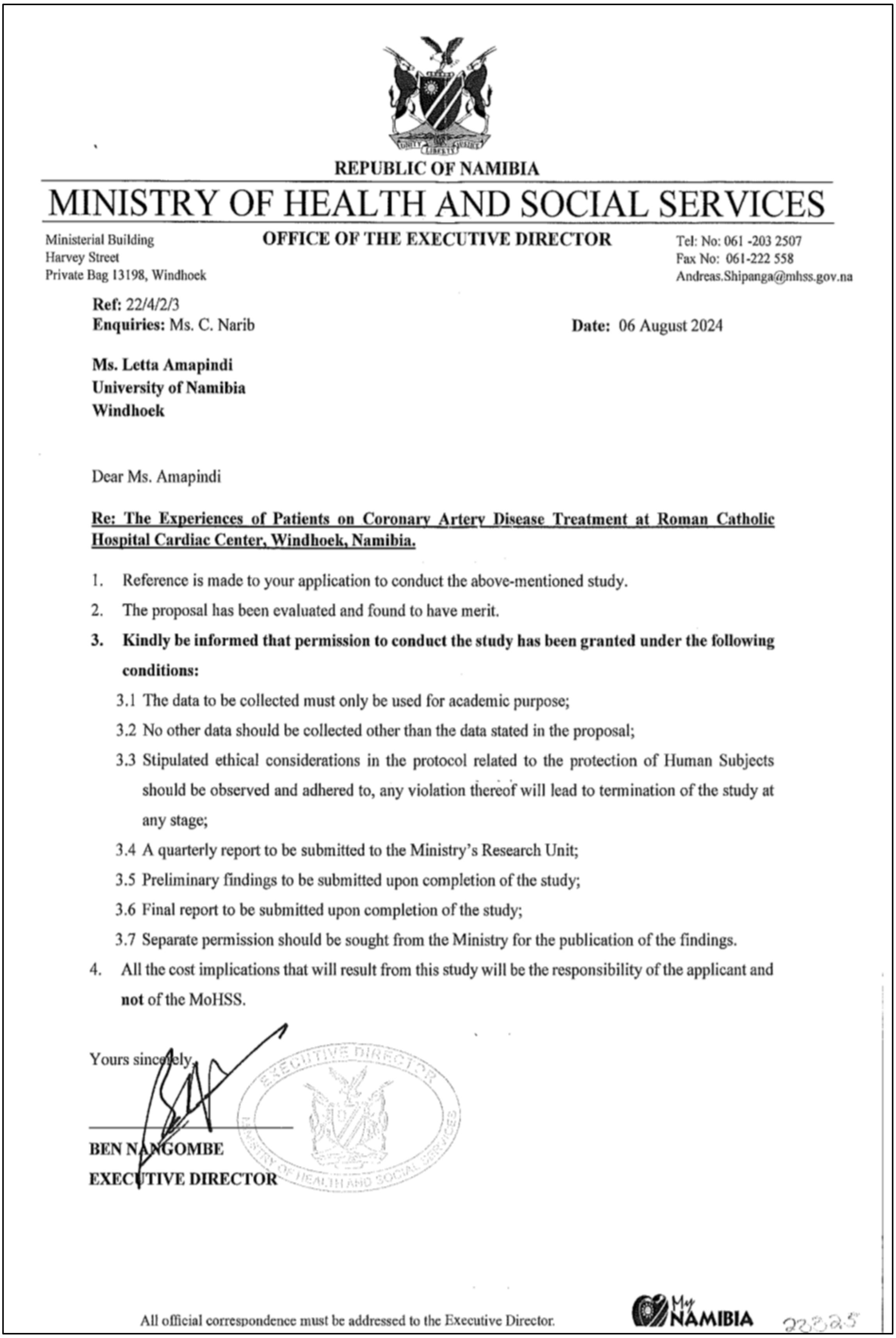
1. Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the ethics committee. An application to make amendments may be necessary.
2. Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the ethics committee.
3. The Principal Researcher must report issues of ethical compliance to the ethics committee (through the Chairperson) at the end of the Project or as may be requested by the ethics committee.
4. The ethics committee retains the right to:
   - i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,
   - ii) Request for an ethical compliance report at any point during the course of the research.

The ethics committee wishes you the best in your research.

Prof Hans J Amukugo (Oshakati Campus Chairperson Decentralized Ethics Committee)

Prof. Davis Mumbengegwi (Head, Multidisciplinary Research)

Appendix 2: Letter of granted permission MOHSS



REPUBLIC OF NAMIBIA

MINISTRY OF HEALTH AND SOCIAL SERVICES

OFFICE OF THE EXECUTIVE DIRECTOR

Ministerial Building
Harvey Street
Private Bag 13198, Windhoek

Tel: No: 061 -203 2507
Fax No: 061-222 558
Andreas.Shipanga@mhss.gov.na

Ref: 22/4/2/3
Enquiries: Ms. C. Narib

Date: 06 August 2024

Ms. Letta Amapindi
University of Namibia
Windhoek

Dear Ms. Amapindi

<u>Re: The Experiences of Patients on Coronary Artery Disease Treatment at Roman Catholic Hospital Cardiac Center, Windhoek, Namibia.</u>

1. Reference is made to your application to conduct the above-mentioned study.
2. The proposal has been evaluated and found to have merit.
3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**
   - 3.1 The data to be collected must only be used for academic purpose;
   - 3.2 No other data should be collected other than the data stated in the proposal;
   - 3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects should be observed and adhered to, any violation thereof will lead to termination of the study at any stage;
   - 3.4 A quarterly report to be submitted to the Ministry's Research Unit;
   - 3.5 Preliminary findings to be submitted upon completion of the study;
   - 3.6 Final report to be submitted upon completion of the study;
   - 3.7 Separate permission should be sought from the Ministry for the publication of the findings.
4. All the cost implications that will result from this study will be the responsibility of the applicant and **not** of the MoHSS.

Yours sincerely,

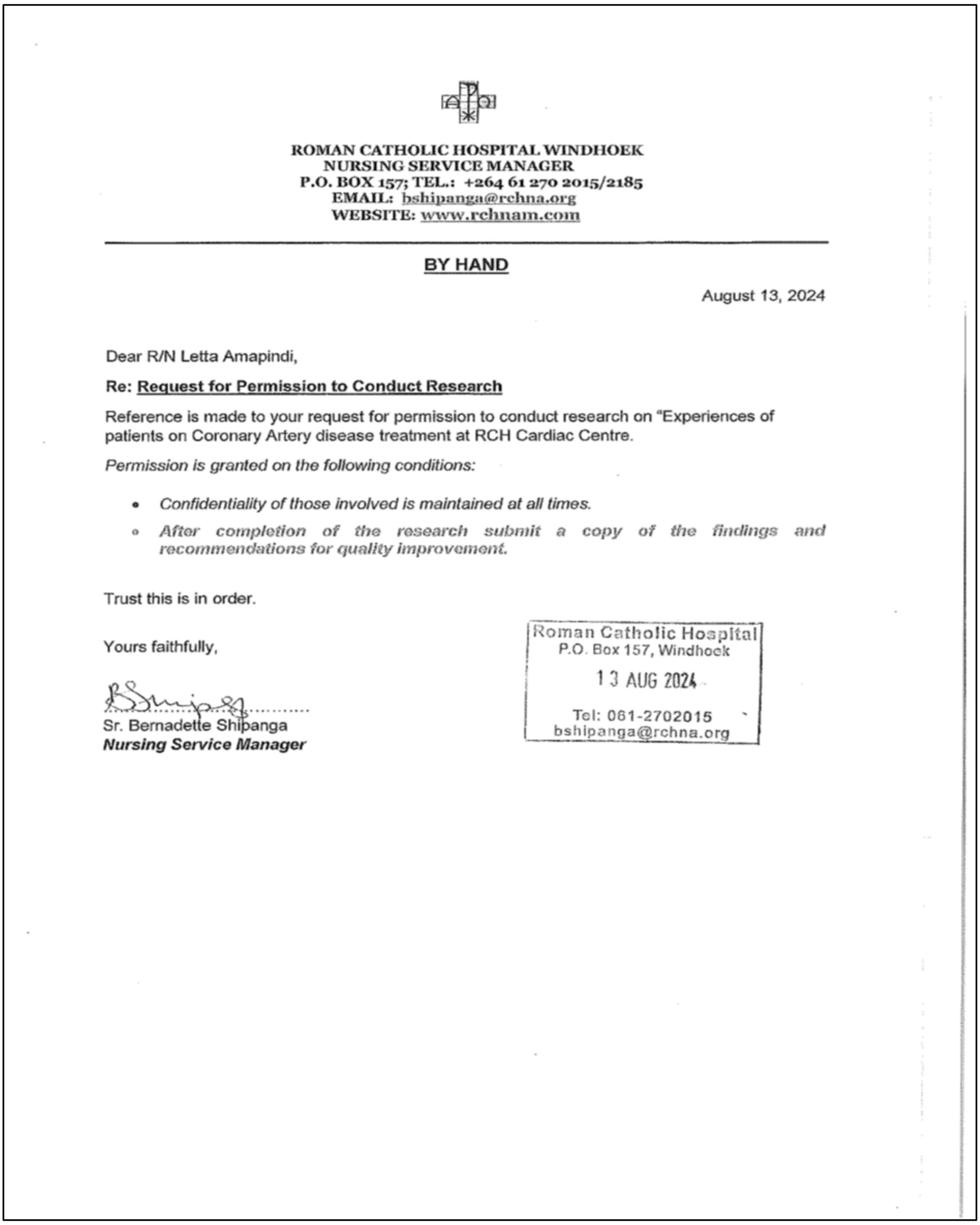
BEN NANGOMBE
EXECUTIVE DIRECTOR

All official correspondence must be addressed to the Executive Director.

MyNAMIBIA

22325

Appendix 3: Permission from letter from the RCH management



ROMAN CATHOLIC HOSPITAL WINDHOEK
NURSING SERVICE MANAGER
P.O. BOX 157; TEL.: +264 61 270 2015/2185
EMAIL: bshipanga@rchna.org
WEBSITE: www.rchnam.com

BY HAND

August 13, 2024

Dear R/N Letta Amapindi,

Re: Request for Permission to Conduct Research

Reference is made to your request for permission to conduct research on "Experiences of patients on Coronary Artery disease treatment at RCH Cardiac Centre.

Permission is granted on the following conditions:

- *Confidentiality of those involved is maintained at all times.*
- *After completion of the research submit a copy of the findings and recommendations for quality improvement.*

Trust this is in order.

Yours faithfully,

Sr. Bernadette Shipanga
Nursing Service Manager

Roman Catholic Hospital
P.O. Box 157, Windhoek
13 AUG 2024
Tel: 061-2702015
bshipanga@rchna.org

Appendix 4: Consent form for participants

Consent form for patients

Consent form to participate in research study.

Title: Experiences of patients on coronary artery disease treatment at Roman Catholic Hospital- Cardiac Centre, Windhoek, Namibia.

Investigator: Letta. Amapindi, student number 201035260

Cell phone number: 0813094824 Email: lamapindi@gmail.com

Greetings Respondents, you are cordially invited to participate in a research study on the experiences of patients with coronary artery disease at the Roman Catholic Hospital-Cardiac Centre in Windhoek, Namibia, by Ms. Letta Amapindi, a Master of Public Health student at the University of Namibia (UNAM). The inquiry is being overseen by DR H. Iita and DR J. Amadhila from UNAM's Faculty of Health Sciences and Veterinary Medicine. Protocols for the study have been approved by the Ministry of Health and Social Services, the Roman Catholic Hospital, the UNAM Postgraduate Studies Committee, and the UNAM Research Ethical Committee.

You were chosen as a possible study participant due to your cardiac treatment. During the interview, you are politely requested to respond to the researcher's questions. About fifteen to thirty minutes will pass. You do not need to provide your name or contact details. Participation in the study is free. It is not anticipated that taking part in this study would hurt or inconvenience you in any way.

Because it would help us understand the experiences of those who have coronary artery disease and pinpoint the experiences that highlight the challenges, the information provided would be important. Additionally, it could help healthcare providers better tailor therapies, enhance patient care, and eventually improve Namibia's general health results. The study is conducted in an anonymous fashion. No one will be able to determine whether you participated in this poll or identify you or your remarks. Your involvement in this investigation is entirely voluntary. For any reason, you are free to decline to answer any question that you do not wish to answer.

If you have any questions about the study, please contact me at the at the at number and e-mail provided with the introduction.

I agree to participate in this research study voluntarily.

Name ……………………………………

Age…………………………………………

Date………………………………………

Signature………………………………

Appendix 5: Questionnaire

Date: August 2024

Introduction and instructions.

Thank you for taking this time to be interviewed by me. The interview will take about 15-30 minutes. As explained in the consent form, you do not need to reveal your name or any other personal information. All questions require an answer.

1. Demographic characteristics:

1.1 Age: _____

1.2 Sex: [Tick (√) in the appropriate box]

1.2.1 MALE
1.2.2 FEMALE
1.3 Marital status: [Tick (√) in the appropriate box]

	CHOICE	TICK
1.3.1	MARRIED	
1.3.2	SINGLE	
1.3.3	DIVORCE	
1.3.4	WIDOWED	
1.3.5	IN A COMMITTED RELATIONSHIP	

1.4 Education background [Tick (√) in the appropriate box

	CHOICE	TICK
1.4.1	Did not attend school	
1.4.2	Primary education (grade 1-7)	
1.4.3	Secondary education (grade 8-10)	
1.4.4	Secondary education (grade 11)	
1.4.5	Secondary education (grade 12)	
1.4.6	Tertiary education	

1.5 Employment status [Tick (√) in the appropriate box

	CHOICE	TICK
1.5.1	Unemployed	
1.5.2	Pensioner	
1.5.3	Primary caregiver (At Home)	
1.5.4	Employed in private sector formally	
1.5.5	Employed in government sector formally	
1.5.6	Self employed	

1.6 Place of residence. [Tick (√) in the appropriate box

	CHOICE	TICK
1.6.1	Zambezi	
1.6.2	Erongo	
1.6.3	Hardap	
1.6.4	Khomas	
1.6.5	Karas	
1.6.6	Kavango	
1.6.7	Kunene	
1.6.8	Ohangwena	
1.6.9	Omaheke	
1.6.10	Omusati	
1.6.11	Oshana	
1.6.12	Oshikoto	
1.6.13	Otjozondjupa	

1.7 Weight ______

1.8 Height_____

1.9 Indicate the presence of other health problems [Tick (√) in the appropriate box.

	CHOICE	TICK
1.9.1	Diabetes mellites	
1.9.2	Hypertension (high blood pressure)	
1.9.3	High cholesterol	
1.9.4	Gout	
1.9.5	Renal problems	
1.9.6	Any others ______	

Experiences

1. Main question

What are your experiences regarding coronary artery disease?

2. Probing questions

1. How long have you been managing the condition of coronary artery disease?

2. What kind of dietary changes have you implemented since your diagnosis of coronary artery disease?

3. What type of physical activities or exercises do you engage in to promote good health? How do you maintain consistency?

4. How do you ensure that you are adhering to your prescribed medications and treatment on a regular basis?

5. Can you talk about the challenges you faced while adhering to your treatment plan?

6. Are there any specific signs or signals when you suffer from coronary artery disease that prompt you to seek immediate medical attention or advice?

7. How frequently do you have follow up appointments with your cardiologist per year?

8. Can you recall any interaction with the health care providers that significantly impacted on your experience of treatment?

9. Looking back at your experiences so far, what have been the most important lessons you have learned about managing coronary artery disease and undergoing treatment?

10. Is there anything else you would like to share about your experiences with coronary artery disease and its treatment that we haven't covered?

11. What advice would you give to others who are also managing coronary artery disease and seeking established effective self-care routine?

Thank you!