

**CANCER PATIENT'S EXPERIENCE OF LONG COVID-19 AT THE
CANCER DISEASES HOSPITAL, LUSAKA, ZAMBIA**

BY

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**A DISSERTATION SUBMITTED TO THE UNIVERSITY OF ZAMBIA IN
PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF
MASTERS OF SCIENCE IN ONCOLOGY.**

THE UNIVERSITY OF ZAMBIA

LUSAKA

2025

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DECLARATION

I, Active Mooya, solemnly declare that this dissertation is my original work. I am the sole author and all the content presented herein is a result of my own work. Any contributions or assistance from other individuals have been duly acknowledged.

I further declare that all sources of information and data used in this report, whether published or unpublished, have been appropriately cited and referenced. The Dissertation has not been previously submitted at University of Zambia or any other university. I am submitting it for the Degree of Master of Science in Oncology Nursing.

Signature (Candidate):Date:

DEDICATION

I dedicate this study to my beloved family. To my wonderful husband, whose unwavering support and encouragement have been my guiding light throughout my academic journey. To my three beautiful children, your laughter and love have inspired me to strive for excellence. And to my mentors and colleagues in the field of nursing oncology, for their invaluable guidance and inspiration.

In memory of all the patients and families affected by cancer, whose resilience motivates me to contribute to this field.

ACKNOWLEDGEMENTS

First and foremost, I extend my heartfelt gratitude to Almighty God for providing me with the strength, hope, and wisdom to persevere during my studies, especially during moments of weakness.

I owe a debt of appreciation to my dedicated supervisors, Dr M. Makukula and Mrs. V. Kalusopa for their precious guidance, endless patience, and firm support throughout this academic journey and equipping me with the necessary research skills

I would like to acknowledge the Funding for review/development of this study which was supported by the Fogarty International Center of the National Institutes of Health, U.S. Department of State's Office of the U.S. Global AIDS Coordinator and Health Diplomacy (S/GAC) and the President's Emergency Plan for AIDS Relief (PEPFAR) under the Award Number R25 TW011219 under the project title: Strengthening Health Professional Workforce Education Programs for Improved Quality Health Care In Zambia (SHEPIZ) Project. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

I am deeply grateful to the Medical Superintendents of CDH for permitting me to conduct this study at their esteemed facility. Their support was invaluable to the success of this research.

Finally, I want to express my heartfelt thanks to my family and friends for their enduring words of encouragement and the solid psychological support they provided throughout this study.

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ABSTRACT

Cancer patients are particularly vulnerable to the effects of Long COVID-19 due to their immune-compromised state. The intersection of cancer and Long COVID-19 presents unique challenges, including disruptions in treatment, heightened psychological distress, and financial burdens. In Zambia, the impact of Long COVID-19 on cancer patients remains under-explored. This study aimed to explore the lived experiences of cancer patients with Long COVID-19 at the Cancer Diseases Hospital in Lusaka, Zambia. A qualitative descriptive phenomenological design was employed to explore the subjective experiences of cancer patients diagnosed with Long COVID-19. The study purposively included 14 participants using data saturation technique. Data were collected through in-depth interviews and analyzed thematically to identify key themes related to the experiences of patients. The findings yielded four themes: impact of long COVID-19 on cancer treatment, Psychological distress from long COVID-19, healthcare access and support challenges. It revealed that Long COVID-19 significantly disrupted cancer treatment, leading to delayed chemotherapy and radiation therapy. Participants reported severe psychological distress, including heightened anxiety, depression, and fear of worsening cancer prognosis. Coping mechanisms varied, with some patients relying on social support, spirituality, and resilience strategies. However, healthcare access remained a major challenge, with limited resources, financial burdens, and delays in treatment exacerbating the difficulties faced by patients. Long COVID-19 has compounded the challenges faced by cancer patients in Zambia, affecting their physical and mental well-being. The study highlights the need for integrated healthcare approaches, improved mental health support, and policy interventions to ensure uninterrupted cancer care during pandemics. Addressing these gaps is crucial for enhancing the quality of life and treatment outcomes for cancer patients experiencing Long COVID-19.

Keywords: *Long COVID-19, cancer patients, healthcare access, psychological distress, coping mechanisms, treatment disruption.*

ABBREVIATIONS

COVID	Corona Virus Disease
UTH	University Teaching Hospital
MOH	Ministry of Health
PTSD	Post-Traumatic Stress Disorder
WHO	World Health Organization
CDH	Cancer Diseases Hospital
US	United States of America
PASC	Post-Acute Sequelae of Severe Acute Respiratory Syndrome- Covid-19 Infection

CHAPTER ONE

1.0 Introduction

Long COVID-19, also known as post-acute sequelae of SARS-CoV-2 infection (PASC), refers to a condition where individuals continue to experience a range of symptoms and complications long after the acute phase of COVID-19 has resolved (Lam et al., 2023). While the acute phase of COVID-19 primarily affects the respiratory system, long COVID-19 symptoms can affect various organ systems and have a profound impact on the physical, mental, and social well-being of affected individuals (WHO, 2021).

Symptoms such as persistent tiredness that interferes with daily activities (fatigue), shortness of breath, cough, or chest pains (respiratory issues), difficulty concentrating (often referred to as “brain fog”), headaches, sleep disturbances and memory issues, joint pain and muscle aches, anxiety, depression, and mood changes and persistent anosmia (loss of taste or smell) have been reported and various ways of management have been established globally (Al-Aly., 2024).

Management of long COVID-19 focuses on alleviating symptoms and improving quality of life, involvement of specialists such as cardiologists, neurologists and rehabilitation therapists to address various symptoms. Long COVID-19 is reported to affect a significant proportion of individuals who have had COVID-19, although the exact prevalence remains uncertain due to variations in study populations and definitions. Studies suggest that approximately 10-30% of COVID-19 patients may develop long COVID symptoms (Merhavy et al., 2024). Long COVID-19 can affect individuals of all age groups and backgrounds, including those who had mild or asymptomatic COVID-19 initially (Husain et al., 2020).

1.1 Background

Cancer patients, especially those undergoing treatment, are thought to be especially susceptible to serious Long COVID-19 problems (Liang et al., 2020; Yu et al., 2020). Additionally, cancer and its therapy have been shown to impair immune function (Singh et al., 2021; Liu et al., 2021). The reallocation of healthcare resources in response to Long COVID-19 have impacted health service delivery for chronic illnesses, including oncology and haematology services (Willan et al., 2020).

Early reports of cancer patients' experiences of Long COVID-19 highlighted a higher perceived risk of infection, fear of infection and more severe complications compared to healthy controls (Casanova et al., 2020). Thus, visiting the hospital for regular care may elevate anxiety and fear (Kourie et al., 2020), whereas not attending treatment or follow-up appointments may increase anxiety and fear of neglecting their health (Kourie et al., 2020).

Studies conducted by (Singh et al., 2021), revealed that patients experienced a delay in receiving cancer treatment due to Long COVID-19, which was related to higher COVID-19, emotional vulnerability, depression, and anxiety. In contrast, other studies reported low worries and no differences in levels of distress, or anxiety, compared to healthy controls and most patients wished to continue their treatment plan. Psycho-social factors (such as decreased social contacts and support) and personal tendencies (for example uncertainty intolerance) may affect this variability in individual's reactions to the pandemic (Derakshan et al., 2020).

In Zambia, health care services for cancer patients at the Cancer Diseases Hospital (CDH) were rescheduled during the pandemic for social restrictions (Holmes et al., 2020). This disruption to scheduled oncology services may lead to emotional distress arising from lack of symptom control, limited access to cancer treatment, curtailment of care, and uncertainty about the course of treatment. In addition to delays in cancer diagnosis and disruption of active treatment plans, cancer patients may experience distress associated with the risk of contracting Long COVID-19 infection on a background of immunosuppression state, social isolation, stigmatization of illness, separation from family, loss of employment, and poverty (Keim-Malpass., 2023). Such challenges are also likely to increase social isolation and loneliness (Holmes et al., 2020), which are independently associated with anxiety, depression, and self-harm (Elovainio, 2017).

All these factors, if not appropriately mitigated can predispose cancer patients to experience psychological distress and social burdens consequently, predisposing them to depression, anxiety, and stress. While social burdens have been studied globally, there is still a paucity of such studies in Zambia. Therefore, this study aimed to explore patient's experience of Long COVID-19 at the University Teaching Hospital, CDH in Lusaka, Zambia.

1.2 Statement of the Problem

In the wake of the COVID-19 pandemic, a growing concern has emerged regarding the prolonged effects of the virus, commonly referred to as "Long COVID-19."

This phenomenon encompasses a range of persistent symptoms experienced by individuals even after they have seemingly recovered from the acute phase of the illness including fatigue, shortness of breath and cognitive dysfunction. Particularly worrisome is the impact of Long COVID-19 on vulnerable populations, such as cancer patients and their families. The consequences can be severe including disruption of cancer treatment by delaying chemotherapy and radiation therapy thereby worsening the disease progression and prognosis (Kuderer et al., 2020). In addition, there is increased psychological distress including anxiety, depression and fear adding to their emotional and financial burden.

The number of cancer patients contracting long COVID-19 has risen steadily over the past three years, as depicted in Table 1.

Table 1: Number of Cancer Patients with long COVID-19 as Recorded from 2020 to 2022

YEAR	Cancer Patients with long Covid-19	Number of Admissions	Percent (100%)
2020	620	200	25%
2021	800	250	33%
2022	1000	300	42%
TOTAL	2420	750	100%

Source: Cancer Diseases Hospital (CDH), 2023

The narrative accompanying the table illustrates the escalating magnitude of long COVID-19 cases among cancer patients, highlighting a concerning trend that necessitates exploration. The probable causes of cancer patients acquiring long COVID-19 include factors such as compromised immune systems due to cancer treatments, frequent hospital visits exposing them to potential sources of infection, and community transmission. Others include the effects of long COVID-19 on cancer patients, their families, and the community as a whole are complex. For cancer patients, the virus can exacerbate existing health challenges, delay or disrupt treatment schedules, and increase anxiety and distress. Families may face emotional strain and practical difficulties in caring for affected loved ones, while the community may experience heightened fear and uncertainty, as well as strain on healthcare resources.

In response to long COVID-19, both the management of the Cancer Diseases Hospital and the Ministry of Health implemented various measures to mitigate the spread of COVID-19 and support affected patients.

These measures include enhanced infection control protocols, vaccination campaigns, provision of personal protective equipment, and public health campaigns to promote awareness and prevention. This increasing incidence of long COVID-19 among cancer patients at the Cancer Diseases Hospital underscores the urgent need for research to understand better the experiences and challenges faced by this vulnerable population. By addressing the gaps in scientific knowledge, this study aimed to inform targeted interventions and support strategies to improve the care and well-being of cancer patients with long COVID-19.

1.3 Justification of Study

Long COVID-19 emerged as a substantial health concern affecting many individuals who have had COVID-19 (Malambo et al., 2022). Understanding the experiences of cancer patients living with long COVID-19 is crucial to address the physical, psychological, and social challenges they face (McCorkell, 2021). By investigating the long COVID-19 experience, this study will contribute to the overall knowledge and understanding of the condition, enabling healthcare professionals to provide appropriate care and support. In Zambia there is limited information about the cancer patient long COVID-19 experiences (Zulu et al., 2022). Hence this provides an opportunity to address this gap. It is expected that findings from this study will provide valuable insights especially for researchers and nations to establish experiences of long COVID-19 cancer patients at Cancer disease Hospital. This study will add to the current body of scientific knowledge in the health insurance field. This study will also help in validating cancer patient's experiences with Long COVID-19. A qualitative study on finding the right General practitioner for people with long COVID-19 experiences conducted by Kingstone et al., (2020) revealed that participants found it hard to find a healthcare professional who would believe their symptoms were real. Hence, conducting this research will help many cancer patients with long COVID-19 to have their symptoms recognized and validated. This recognition will also benefit the patients from being stigmatized, improve healthcare providers understanding of their condition and their cases will be managed more effectively at CDH. On the other hand, health care workers will also benefit from this study in understanding the range of symptoms and challenges faced by cancer patients with long COVID-19, insights from patient experiences may also guide them to develop personalized treatment plans that address the unique needs of cancer patients with long COVID-19.

Furthermore, it will also benefit health workers in offering targeted support and resources to cancer patients experiencing specific long COVID-19 symptoms. The study will benefit policymakers in their efforts to safeguard public health. By understanding patient experiences, the risk factors, long-term complications, and potential transmission dynamics of long COVID-19. In addition, the study addresses gaps in understanding the cancer burden and long COVID-19 in Zambia which faces challenges including resource shortages and financial barriers that worsen clinical outcomes for patients. Using a qualitative approach, the study reveals patient experiences and coping strategies that are often absent in quantitative analysis. The study will benefit healthcare providers by adding to the body of knowledge information that can be used to design healthcare models. Policy makers will benefit by prioritizing funding and equitable pandemic responses. Researchers will benefit by comparing different study findings to our study findings to identify the gaps and the trends in this area.

1.4 Research Questions

What are the lived experiences of cancer patients with long COVID-19 at the Cancer diseases Hospital?

1.5 Conceptual Definitions

Long COVID-19: Long COVID refers to a condition in which individuals continue to experience a range of symptoms or complications for an extended period of time after the initial acute phase of COVID-19 infection (McCorkell, 2021).

Patient: A patient is any recipient of health care services that are performed by healthcare professionals (Oben, 2020).

Experience: experience refers to the process of encountering or undergoing events, situations, or sensations (Oben, 2020).

Symptoms: Symptoms can be defined as the subjective experiences or manifestations of an underlying medical condition or disease (Husain, 2020).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The literature review is an important component of dissertation since it aids in situating the study within the body of already existing knowledge. To gain understanding on the topic, literature was reviewed. The researcher summarized the lived experiences of long COVID-19 patients and adhered to a systematic approach aimed at addressing the research question. Search data bases such as PubMed, HINARI, Google scholar, CINAHL, and Cochrane Library were used.

2.1 Overview of Cancer and long COVID-19

One of the main causes of death globally, cancer is a complicated and multidimensional illness that presents serious obstacles to global public health (Siegel et al., 2021). Cancer, characterized by abnormal cell growth and spread, affects various body parts and presents various forms with distinct clinical features and treatment requirements. (Bray et al., 2018). Cancer management typically involves a combination of treatment modalities, including surgery, chemotherapy, radiation therapy, targeted therapies, and immunotherapy, based on the specific disease type and stage (National Cancer Institute, 2022).

The long COVID-19 pandemic has exposed cancer patients to a higher risk of severe illness and adverse outcomes. (Liang et al., 2020). According to new research, immunosuppression brought on by cancer treatments and underlying comorbidities may contribute to cancer patient's increased rates of long-term COVID-19 infection and mortality when compared to the general population (Luo et al., 2020). Furthermore, the junction of cancer and long COVID-19 offers specific issues for patient care, including disruptions to treatment schedules, delays in diagnosis, and increased psychological distress (Kuderer et al., 2020).

Furthermore, the idea of "long COVID-19"—which describes enduring symptoms and health issues that remain for weeks or months after the acute phase of the COVID-19 infection has passed—has become a major concern. (Nalbandian et al., 2021). Long COVID-19, initially characterized by respiratory symptoms, can progress to a range of organ system manifestations including fatigue, cognitive impairment, musculoskeletal pain, and mental health disturbances (Sudre et al., 2021). The prevalence and severity of long COVID-19 among cancer patients remain poorly understood, but emerging evidence suggests that this population may be at increased risk of experiencing prolonged symptoms and complications due to the interplay of cancer-related factors and long COVID-19-induced immune dysregulation (Maiese et al., 2021).

2.2 Cancer Patient's Experiences of Long COVID-19

The intersection of cancer and long COVID-19 presents a complex landscape that demands further exploration to adequately address the needs of affected individuals. Suerio et al. (2021) Long-term COVID-19 and cancer provide a complicated environment that necessitates more research. Through a prospective cohort study, David explored the complex nature of long-term COVID-19, illuminating the condition's risk factors and enduring symptoms. The broad methodology of the study, however, did not adequately reflect the distinct experiences and difficulties that cancer patients encounter when coping with the fallout from COVID-19 infection. It is essential to comprehend the unique issues and vulnerabilities of this group in order to develop treatments and support networks that are specifically suited to meet their requirements.

Similarly, Gharzi et al. (2021) provided valuable insights into the pathological features of long COVID-19 through a comprehensive literature review of autopsy findings. While their review deepened the understanding of the disease's impact on various organ systems, there was a notable gap in the exploration of cancer patient's experiences with long COVID-19. Given the heightened vulnerability of cancer patients to severe COVID-19 outcomes, the lack of research specifically addressing their experiences highlights a critical gap in understanding and underscores the urgency for further investigation.

Moreover, while quantitative studies such as that conducted by Meyiwa et al. (2020) contribute to understanding of the prevalence of long COVID-19 symptoms in cancer patients, they often overlook the qualitative aspects of patient's experiences.

Qualitative research is essential for capturing the significant challenges and coping mechanisms of cancer patients dealing with long COVID-19, providing valuable insights into their lived experiences and psycho-social well-being. Therefore, future research efforts should aim to complement quantitative data with qualitative inquiries to gain a comprehensive understanding of the impact of long COVID-19 on cancer patient's lives.

Furthermore, Jane et al. (2020) highlighted the heightened vulnerability of cancer patients to severe long COVID-19 outcomes, emphasizing the need for comprehensive support strategies tailored to their unique needs. However, the study primarily focused on clinical outcomes such as mortality and hospitalization rates, overlooking the significant experiences of patients grappling with the long-term effects of long COVID-19. Understanding these experiences is crucial for developing holistic care approaches that address both the physical and emotional needs of cancer patients affected by long COVID-19.

In addition to these studies, Nalbandian et al. (2021) explored the concept of "long COVID-19," highlighting persistent symptoms and health complications that continue for weeks or months after the acute phase of infection. While their findings provided valuable insights into the broader population, there was limited discussion of long COVID-19 in the context of cancer patients. Given the complexity of cancer care and the potential interactions between cancer treatments and COVID-19, further research specifically addressing the experiences of cancer patients with long COVID-19 is warranted. Such research endeavors will not only inform clinical practice but also contribute to the development of tailored support interventions aimed at enhancing the well-being of this vulnerable population.

2.3 Coping Mechanisms used by Cancer Patients with Long COVID-19

Cancer patients facing the dual challenges of cancer and long COVID-19 often employ coping mechanisms to navigate the physical, emotional, and psychological toll of their conditions. In a qualitative study by Pavitra et al. (2021) conducted in the United States of America, cancer patients emphasized the importance of social support networks and spirituality in coping with the stressors associated with long COVID-19.

Through in-depth interviews, participants highlighted the role of family, friends, and faith communities in providing emotional support, practical assistance, and a sense of belonging during challenging times. However, the study revealed a gap in understanding culturally specific coping strategies among diverse populations, such as racial and ethnic minorities, underscoring the need for more inclusive research approaches to capture the full spectrum of coping experiences.

Similarly, a study by Lee et al. (2020) in South Korea explored coping strategies among cancer patients dealing with the psychosocial impacts of long COVID-19. Using a mixed-methods approach, including surveys and focus groups, the study identified various coping mechanisms employed by participants, ranging from problem-solving strategies to emotion-focused techniques. Notably, mindfulness-based interventions emerged as a key coping strategy, with participants reporting benefits such as increased emotional regulation, reduced stress, and enhanced quality of life. However, while the study provided valuable insights into coping mechanisms, it lacked a longitudinal perspective, warranting further research to assess the sustainability and effectiveness of coping strategies over time and in different contexts.

Furthermore, a qualitative study by Akoto et al. (2021) in Australia examined coping mechanisms among cancer patients undergoing treatment during the COVID-19 pandemic. Through in-depth interviews and thematic analysis, the study identified a range of coping strategies employed by participants to manage the challenges posed by both cancer and long COVID-19. Problem-focused coping strategies, such as seeking information, adhering to treatment regimens, and maintaining a healthy lifestyle, were commonly reported. Additionally, emotion-focused coping mechanisms, including seeking social support, engaging in relaxation techniques, and practicing mindfulness, played a crucial role in buffering against distress and promoting psychological well-being. However, despite the adaptive nature of coping strategies reported by participants, the study noted a lack of tailored support services for cancer patients with long COVID-19, suggesting a gap in healthcare provision that requires attention from policymakers and healthcare providers.

In contrast, a study by Peter, et al. (2020) in the United Kingdom focused on the use of technology-mediated interventions to enhance coping among cancer patients during the pandemic using qualitative interviews and thematic analysis. Participants reported positive outcomes associated with virtual support platforms, including increased accessibility, flexibility, and anonymity. However, the study also highlighted the digital divide among cancer patients, with marginalized groups, such as older adults, individuals with limited digital literacy, and those from socioeconomically disadvantaged backgrounds, facing barriers to accessing online resources. Addressing these disparities is essential for ensuring equitable access to support services for all cancer patients, particularly those grappling with the challenges of long COVID-19.

Moreover, a mixed-methods study by Chama et al. (2021) in Zambia examined coping strategies among cancer patients with long COVID-19, integrating quantitative surveys with qualitative interviews to gain a comprehensive understanding of coping mechanisms and their effectiveness. The quantitative component of the study involved the administration of standardized measures of coping styles, stress, and psychological well-being, while the qualitative interviews provided rich insights into participants' lived experiences and coping strategies. The study identified a range of adaptive coping mechanisms, such as acceptance, positive reframing, seeking social support, and engaging in leisure activities. However, participants also reported maladaptive coping strategies, including avoidance, rumination, and substance use, highlighting the complex interplay between coping styles and psychological outcomes. Despite the diversity of coping strategies employed by participants, the study highlighted a lack of standardized assessment tools for measuring coping among cancer patients with long COVID-19, indicating a need for validated instruments to guide intervention development and evaluation.

Additionally, a qualitative study by Martinez et al. (2020) in Mexico explored coping mechanisms among cancer patients facing financial hardship exacerbated by the COVID-19 pandemic. Through semi-structured interviews and thematic analysis, the study examined how cancer patients navigate economic challenges, access to healthcare services, and social support networks in the context of the pandemic.

Participants described adaptive coping strategies, such as resilience, resourcefulness, and seeking assistance from community organizations and government agencies. However, the study also revealed systemic barriers to accessing financial assistance and healthcare services, particularly for marginalized populations living in poverty or rural areas. Addressing these structural inequalities is essential for ensuring equitable access to healthcare and support services for all cancer patients affected by long COVID-19.

2.4 Conclusion

In conclusion, the literature review provides a comprehensive overview of the intersection between cancer and long COVID-19, highlighting the unique challenges faced by cancer patients dealing with the aftermath of COVID-19 infection. The reviewed studies underscore the need for tailored interventions and support systems to address the physical, emotional, and psychological needs of this vulnerable population. Additionally, insights into coping mechanisms used by cancer patients with long COVID-19 emphasize the importance of holistic approaches to patient care, encompassing both clinical and psycho-social support. By synthesizing existing knowledge and identifying gaps in the literature, this review informs the current study by laying the groundwork for understanding the lived experiences of cancer patients with long COVID-19 at the Cancer Diseases Hospital in Lusaka, Zambia. Through qualitative inquiry, the study aims to capture the nuanced challenges and coping strategies of this population, ultimately contributing to the development of targeted interventions and support services tailored to their unique need.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the design and methodology that were used to address the research problem identified in the initial chapter and to achieve the objectives of the research. Accordingly, this chapter captured the research design, research process, and data analysis approach adopted in the study. Emphasis was placed on the efforts taken to ensure quality and ethics across the entire research process. The confidentiality and privacy of research participants were considered throughout.

3.1 Study Design

The research design served as the blueprint for the entire research endeavor, providing a structured framework to effectively achieve the study objectives. To explore cancer patient's experiences of long COVID-19, a qualitative study design using a descriptive phenomenological design was adopted. This approach was well-suited for delving into the subjective experiences, perceptions, and meanings attributed to living with long COVID-19 among cancer patients. Descriptive research, as outlined by Ader. (1994), focuses on understanding the conditions, practices, attitudes, opinions, ongoing processes, and emerging trends within a particular phenomenon. In this study, the descriptive phenomenological design enabled a detailed examination of the lived experiences of cancer patients affected by long COVID-19, shedding light on their perceptions, coping mechanisms, challenges, and support needs.

3.2 Study Settings

The study was conducted at the Cancer Diseases Hospital (CDH), the sole tertiary hospital providing specialized cancer services in Zambia. Located in Lusaka, CDH with bed capacity of 252 serves as a critical hub for comprehensive cancer care. As the primary institution for cancer referrals not only from across Zambia but also from neighboring countries, CDH represented a unique and information-rich setting for this study.

Its central role in catering to a diverse patient population ensured that the research captured a broad spectrum of experiences, contributing valuable insights to the study.

3.3 Target Population

The target population for this study consisted of all cancer patients receiving treatment at CDH in Lusaka, Zambia, who had been diagnosed with long COVID-19. Specifically, the study focused on individuals who were admitted to the hospital and were undergoing treatment for cancer while also experiencing symptoms of long COVID-19. This vulnerable group faced the compounded challenges of cancer and long COVID-19, and understanding their experiences was crucial for informing targeted interventions and support strategies to improve their care and well-being.

3.4 Study Population

The study population corresponded to the subset of the target population that was feasibly reached and engaged for research purposes which includes cancer patients who had documented long COVID-19 symptoms and were accessible. The accessible population for this study encompassed cancer patients currently receiving treatment at CDH, who had been formerly diagnosed with Long COVID-19. This group represented a subset of the target population who are defined as cancer patients at CDH with Long COVID-19 and were available and eligible for participation during the study. By targeting this population, the study aimed to capture a broad range of experiences related to cancer care and treatment, which provided valuable insights into the specific challenges faced by cancer patients living with long COVID-19. Additionally, focusing on the accessible population facilitated data collection and analysis within the existing infrastructure of the hospital.

3.5 Inclusion Criteria

The study included respondents who:

1. Provided informed consent to participate
2. Cancer patients who had documented long COVID-19 symptoms

3. Were medically stable to engage in interviews without interrupting their treatment schedule.

3.6 Exclusion Criteria

Exclusion was based on patients who:

1. Were critically ill to participate.
2. Were receiving intensive treatment of which an interview would disrupt their treatment.

3.7 Sample Size

A sample size of 14 participants was selected, allowing the researcher to deeper into the issues under study. This aligned with the recommendations of Sandelowski. (1995) and other studies, which suggested that a sample size of 6-12 participants is sufficient for phenomenological research. Phenomenological studies focus on achieving data saturation. This is the point at which no new themes or insights emerge from additional interviews. The focus is not on statistical generalizability but rather on recruiting participants until thematic redundancy is reached. The study used 14 participants to ensure enough saturation.

This sample size enabled the researcher to probe various issues and follow up with the same informants when additional information was needed (Ngoma, 2006). The long COVID-19 patients at CDH provided a representative picture of such patients in Lusaka and countrywide, making the data manageable for analysis.

3.8 Sampling Technique

A purposive sampling strategy was used to identify participants meeting the study's criteria. Purposive sampling, according to Neuman (2011), is appropriate when selecting unique cases or participants that are especially informative. In this study, participants who had experienced long COVID-19 were selected to participate in the study.

3.9 Data Collection technique

Data was collected through in-depth interviews with cancer patients affected by long COVID-19. In-depth interviews provided a rich and detailed understanding of participants' experiences, perceptions, and emotions (Smith, 2015). The interviews were guided by a study guide, ensuring that key areas of interest were explored while allowing participants to elaborate on their experiences in their own words (Bird, 2016). This approach facilitated comprehensive insights into the lived experiences of cancer patients with long COVID-19.

3.10 Data Storage

With permission using both the consent forms and verbal requests, notes were taken during the interviews, and all data collected from the questionnaires and interview guides were stored electronically. Names and personal identification were excluded to maintain confidentiality.

3.11 Measures to Ensure Quality of Data

Lincoln and Guba (1985) outlined criteria to ensure trustworthiness, including credibility, dependability, transferability, and confirmability. In this study, trustworthiness referred to the degree of confidence in the data, interpretations, and methods used. Credibility was achieved by using triangulation, including multiple sources and checking interpretations with participants. Dependability was ensured through detailed documentation of activities and decisions. Transferability was supported by rich, detailed descriptions of the study context, and confirmability was ensured through detailed notes of decisions and analyses.

3.12 Data Analysis

Data were analyzed thematically, with themes identified through familiarization, coding, and reviewing of the data (Caulfield, 2022). Thematic analysis was chosen because it is well-suited for exploring people's views, opinions, and experiences. The data were analyzed using thematic analysis, following the six-step process outlined by (Caulfield, 2022) as follows:

1. **Familiarization:** The transcripts were carefully read multiple times to fully understand the content.
2. **Generating Initial Codes:** Recurrent ideas and statements were identified, and each

was assigned a code.

3. **Searching for Themes:** The codes were grouped into categories to form broader themes based on common patterns.
4. **Reviewing Themes:** The identified themes were revisited, and any overlaps or contradictions were addressed to ensure coherence.
5. **Defining and Naming Themes:** Each theme was clearly defined and given a name that represented the underlying data.
6. **Writing the Report:** Finally, the themes were organized into the report, supported by direct quotes from participants.

3.13 Ethical Consideration

Ethical clearance was obtained from the University of Zambia Biomedical Research Ethics Committee with reference number 5021-2024 and permission was also obtained from CDH. Confidentiality and anonymity were maintained, with participants' names excluded from the data.

3.14 Trustworthiness

To ensure credibility, this research employed strategies such as prolonged engagement and peer review to enhance the trustworthiness of the data and interpretations (Shenton, 2019). A significant amount of time was spent engaging with participants. Prolonged engagement helped to build rapport, gain a deeper understanding of the participants' experiences, and ensured that the interpretations were grounded in their reality. The researcher consulted with the research supervisors about the translation of themes from the transcribed interviews to ensure accuracy and supportive reasoning (Creswell, 2013).

3.15 Dissemination and Utilization of Findings

The findings were disseminated to relevant stakeholders, including the Ministry of Health and CDH, and published in a peer-reviewed journal. The data also provided a foundation for future research and informed healthcare policies to support cancer patients living with long COVID-19.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.0 Introduction

This chapter presents the findings of the study based on the experiences of cancer patients with Long COVID-19 at the Cancer Diseases Hospital, Lusaka. The findings are organized into themes derived from the participants' narratives during the interviews. The chapter begins with a demographic breakdown of the participants, followed by the explanation of the steps undertaken in thematic analysis, and finally, the exploration of the themes with supporting direct quotes from participants.

4.1 Demographic Information of the Participants

The sample consists of 14 participants who had been diagnosed with both cancer and Long COVID-19. Below is a summary of their demographic information in a table 4.1.

Table 1.1 Demographic Characteristics (n=14)

Participant ID	Age	Gender	Occupation	Education	Monthly Income (ZMW)
P1	35	Female	Teacher	Secondary	4,500
P2	58	Male	Civil Servant	Diploma	8,000
P3	42	Male	Small Business	Tertiary	6,500
P4	60	Male	Retired Officer	Secondary	2,000
P5	49	Female	Small Business	Secondary	3,500
P6	50	Female	Farmer	Primary	2,500
P7	30	Male	Engineer	Tertiary	9,000
P8	33	Male	Teacher	Secondary	5,000
P9	44	Female	Civil Servant	Diploma	7,000
P10	52	Male	Retired Officer	Secondary	3,000
P11	65	Male	Retired Teacher	Secondary	2,500
P12	47	Female	Trader	Secondary	4,000
P13	36	Female	Civil Servant	Diploma	6,000
P14	41	Male	Business Owner	Tertiary	10,000

The demographic characteristics of the participants (n=14) reveal a diverse group in terms of age (30–65 years), gender, occupation, education, and income. The majority were male (n=8), with occupations ranging from professionals like teachers and engineers to retirees, farmers, and small business owners. Education levels varied from primary to tertiary, while monthly incomes ranged from ZMW 2,000 to ZMW 10,000.

This diversity provides a broad perspective on the socioeconomic factors influencing the lived experiences of cancer patients with Long COVID-19.

4.2 Identification of four key themes

The themes were identified posteriori as the themes emerged from the data itself after collection and analysis. The nature of the study design which is phenomenological, a thematic analysis based on qualitative approach points indicates that the themes were obtained posteriori. The following are the identified themes:

1. Impact of Long COVID-19 on Cancer Treatment
2. Psychological Distress from Long COVID-19 Symptoms
3. Coping Mechanisms Used by Patients
4. Healthcare Access and Support Challenges

The following table presents a concise summary of the identified themes, sub themes, and associated codes, offering a structured overview of the data that emerged from the study Table 4.2.

Table 4.2. Theme, Sub theme and Codes

Theme	Subtheme	Code
1. Impact of Long COVID-19 on Cancer Treatment	Treatment delays Disrupted progress	Missed appointments, delayed chemo, recovery delays worsened health relapse, prolonged treatment
2. Psychological Distress from Long COVID-19	Emotional toll Anxiety and fear	Hopelessness, mental exhaustion, uncertainty Fear of death, isolation, mental breakdown
3. Coping mechanisms	Social support Spiritual resilience	Family support, virtual connections, peer to peer groups
4. Health care access and support challenges	Treatment delays Financial burden	Missed appointments, lack of resources, overwhelmed system Medical costs, transportation, inadequate funding

4.3 Theme 1: Impact of Long COVID-19 on Cancer Treatment

The impact of Long COVID-19 on cancer treatment emerged as a dominant theme, revealing profound effects on cancer patients. Two sub themes emerged from the analysis: Treatment delays and Disrupted progress.

4.3.1 Treatment Delays

This sub theme presents narratives from different participants to illustrate the challenges faced. Most participants experienced significant delays in treatment, worsened health conditions, and prolonged recovery periods for participants. Participants expressed concerns about the setbacks in their cancer treatment progress, with some feeling as though they were fighting two battles simultaneously.

P1, 35 years went on to say: *"My chemotherapy was delayed for almost a month because I had to recover from the Long COVID symptoms first. The doctors said it wasn't safe to continue while I was still weak."*

P2, 58 years added a personal reflection: *"It felt like I was fighting two battles at the same time—cancer and Long COVID. I just wanted to get back to my treatment, but the symptoms wouldn't go away."*

The overall experience left participants questioning their progress. (P10, 52 years) mentioned: *"I thought I was doing well with my cancer treatment, but when Long COVID hit, it was like starting over again. I felt like I had regressed."*

4.3.2 Disrupted Progress

This sub theme explores how the participants' cancer treatments were disrupted due to the symptoms of Long COVID-19. Many faced disruptions in their treatment schedules due to lingering long COVID symptoms, leading to heightened anxiety and feelings of helplessness. The inability to access healthcare services regularly further compounded their struggles, making them feel physically weaker and emotionally distressed. Ultimately, the participants' experiences highlight the severe challenges posed by Long COVID-19, which not only affected their treatment timelines but also their overall well-being and confidence in recovery.

P4, 60 years explained: *"I had breathing difficulties from Long COVID, and it made me miss several of my radiation appointments. This slowed down my progress."*

These interruptions led to heightened anxiety among patients. "I was very anxious because every time my treatment was delayed, I felt like my cancer was getting worse. It was a scary feeling."

This disruption also meant that some participants had to make difficult choices regarding their health. (P14, 41 years) narrated: *"I was advised to prioritize recovering from Long COVID first, but in the back of my mind, I was thinking about how far behind my cancer treatment was getting."*

Another participant, (P6, 50 years) commented on the challenges faced due to lack of immediate healthcare access: *"Being in the hospital for cancer was already stressful, and Long COVID just added another layer of difficulty. I couldn't see my doctors as often, and that scared me."*

4.4 Theme 2: Psychological Distress from Long COVID-19 Symptoms

This theme examines the psychological burden experienced by cancer patients due to prolonged COVID-19 symptoms. Participants reported anxiety, fear, depression, and feelings of isolation as they struggled to manage both cancer and Long COVID-19. Two distinct sub themes emerged: Emotional toll, Anxiety and fear.

4.4.1 Emotional Toll

Many participants expressed struggling with overwhelming stress as they navigated the dual challenges of cancer and Long COVID, with persistent symptoms like fatigue and brain fog leading to a sense of losing control. The isolation from loved ones further exacerbated their mental anguish, creating a deep sense of loneliness and helplessness. Some participants described their mental state as deteriorating, with hope for recovery diminishing over time, leading to increased depression and anxiety about the future. The persistent fear of not recovering from either illness took a heavy emotional toll, with many feeling mentally exhausted and struggling to maintain their strength and optimism. Some participants had this to say:

"The fatigue and the brain fog made me feel like I was losing control over my life. I was scared that I wouldn't recover from either illness." P11, 65 years

For some, the isolation imposed by Long COVID-19 worsened their mental state. (P8, 33 years) explained:

"I was cut off from my family and church gatherings for some time, which made me feel very alone. It wasn't just the physical pain, but the emotional toll was unbearable."

A Business Man (P3, 42 years) articulated these challenges:

"I was already dealing with the stress of cancer, and then when the Long COVID symptoms wouldn't go away, it felt like everything was falling apart. I couldn't sleep, and I was constantly worried."

4.4.2 Anxiety and Fear

Participants faced significant challenges of anxiety and fear as they could not really bear dual burden of illness of cancer and long COVID-19.

A Farmer (P6, 50 years), reflected on the helplessness of the situation:

"Dealing with cancer is already overwhelming, but with Long COVID, it was like a never-ending cycle of fear and uncertainty. Some days I didn't even want to get out of bed."

The long-term impact on mental health was also evident. (P10, 52 years), narrated: *"I used to be optimistic about beating cancer, but Long COVID made me lose that hope. I became more depressed and anxious about my future."*

For some participants, the fear of not recovering was persistent. (P13, 36 years), added:

"I couldn't tell what was worse anymore, cancer or Long COVID. I was constantly terrified of what would happen next, and that fear stayed with me."

P9, 44 years commented on the mental exhaustion:

"It's exhausting—physically, yes, but mentally even more. I wasn't just fighting the symptoms; I was fighting the fear and worry that came with them."

4.5 Theme 3: Coping Mechanisms Used by Patients

This theme focuses on the strategies cancer patients adopted to cope with the dual burden of Long COVID-19 and cancer. Despite the overwhelming challenges, participants employed various coping mechanisms such as social support, spirituality, and mental resilience. Two sub themes emerged: Social support and Spiritual resilience.

4.5.1 Social Support

Social support also extended beyond family. (P5, 49 years), explained:

"I joined an online support group for cancer patients. Hearing other people's stories and struggles made me feel less alone in this fight."

Family support, even though virtual means, played a crucial role in maintaining morale and encouragement. (P9, 44 years), mentioned the importance of family support:

"Having my family around me, even virtually, made a big difference. They were my source of strength, and their encouragement kept me going."

Some participants focused on celebrating small victories and maintaining a positive mindset to stay motivated. Focusing on small victories was essential. (P3, 42 years), shared:

"I celebrated small milestones, like days when I could breathe a little better or when I had more energy. It gave me hope that things would get better."

Practical strategies such as journaling, self-care routines, and joining online support groups helped participants track progress, regain a sense of control, and feel less isolated.

(P14, 41 years), adopted a practical approach:

"I started journaling to keep track of my symptoms and progress. Writing things down helped me see improvements, even if they were small."

An engineer (P7, 30 years), talked about maintaining a positive mindset:

"I had to constantly remind myself that I was fighting for my life. Keeping a positive attitude helped me push through the difficult days."

4.5.2 Spiritual Resilience

Many found solace in their faith, with prayer providing strength and hope during difficult times. Humor served as a valuable tool to lighten emotional burdens, while acceptance of uncontrollable circumstances brought a sense of peace. Overall, these coping mechanisms helped patients navigate their challenging journeys with strength and determination.

A Trader (P12, 47 years), described how spirituality played a vital role:

"I turned to prayer during this time. It gave me strength when I felt like giving up. My faith helped me believe that I could recover."

A Farmer (P6, 50), shared how focusing on self-care helped:

"I made sure to eat well, rest, and do breathing exercises. Taking care of my body was one way I could feel like I had some control."

P8, 33 years described how humor helped:

"I tried to find humor in small things. Laughing helped me forget the pain for a while, and it was a way to lift my spirits."

A Teacher (P1, 35), highlighted the role of mental resilience:

"It wasn't easy, but I kept telling myself that I was stronger than the illness. Believing in my own resilience was key to getting through this."

Lastly, (P10, 52 years), discussed acceptance: *"I learned to accept that some things were beyond my control. Once I stopped fighting the things I couldn't change, I found more peace."*

4.6 Theme 4: Healthcare Access and Support Challenges

This theme explores the difficulties participants faced in accessing healthcare services, including delays in treatment, lack of adequate support, and financial burdens. The COVID-19 pandemic strained healthcare systems, making it harder for cancer patients to receive timely care. Two sub themes emerged: Treatment delays and financial burden.

4.6.1 Treatment Delays

Many participants experienced postponed appointments and felt neglected as healthcare systems prioritized COVID-19 care. This sense of being overlooked added to their emotional distress, with some feeling as though their cancer was deemed less important. Participants also noted issues such as long waiting times, limited hospital resources, and insufficient specialized care for managing both conditions. The lack of coordination between cancer and COVID care systems further exacerbated their struggles, leaving many feeling helpless and frustrated with the overall healthcare system. A civil servant (P2, 58 years), described his experience with treatment delays: *"Because of the COVID restrictions, I couldn't get the care I needed right away. Appointments were pushed back, and I was left waiting for weeks."*

A retired Officer (P11, 65 years), shared his concerns about support from healthcare workers: *"There were times when I felt like the doctors didn't fully understand how to manage both my cancer and COVID symptoms. I needed more specialized care."*

In this context P11 is alluding to resource limitations, overwhelmed systems and lack of coordinated expertise thereby leading to failure to have access to health and support.

The participants felt that they experienced prolonged COVID-19 Symptoms because of delayed treatment and lack of specialized care.

4.6.2 Financial Burden

Financial burdens compounded the situation, as managing both cancer treatments and Long COVID expenses became overwhelming. Participants also mentioned the financial strain. (P10, 52 years), explained:

"The costs just kept piling up. Not only was I paying for cancer treatments, but I also had to deal with the costs of managing Long COVID. It was overwhelming."

In this context P10 is alluding to financial strain including expensive medical costs transportation and inadequate insurance coverage. This is well aligned with health access and support.

4.7 Conclusion

In summary, this chapter has provided a detailed presentation of the findings based on interviews with 14 cancer patients who experienced Long COVID-19. The four key themes impact on cancer treatment, psychological distress, coping mechanisms, and healthcare access challenges reveal the profound effects of Long COVID-19 on patients' physical and mental well-being, as well as the limitations within the healthcare system. The experiences shared by participants offer valuable insights into the dual burden faced by these vulnerable individuals, highlighting the urgent need for more integrated and holistic care approaches for cancer patients with Long COVID-19.

CHAPTER FIVE DISCUSSION

5.0 Introduction

This chapter provides a comprehensive discussion of the findings from the study on the lived experiences of cancer patients with Long COVID-19 at the Cancer Diseases Hospital, Lusaka. The findings are compared with relevant studies globally, interpreted within the context of Zambia's healthcare system, and examined to understand their broader implications for healthcare policy and practice. The discussion is organized around the demographic information and four key themes: impact on cancer treatment, psychological distress, coping mechanisms, and healthcare access challenges

5.1 Demographic Discussion

The study included 14 participants with a diverse demographic background, ranging from 30 to 65 years old, with various occupations such as teachers, civil servants, and small business owners. This diversity in socioeconomic status, education, and income allowed for a comprehensive understanding of how Long COVID-19 affected different aspects of participants' lives, particularly in accessing healthcare and coping with dual health burdens.

Comparing these demographics to studies in high-income countries reveals both similarities and differences. For instance, Pavitra et al., (2021) examined cancer patients experiencing Long COVID-19 in the United States and observed similar diversity in socioeconomic backgrounds. However, access to healthcare in wealthier countries was primarily determined by insurance coverage and proximity to high-quality medical facilities. In contrast, the Zambian participants in this study faced significant systemic barriers, such as a strained healthcare system, resource limitations, and the prioritization of COVID-19 care over chronic illnesses like cancer because NHIMA doesn't cover all the costs.

Globally, studies also highlight income disparities in healthcare outcomes. Gulia et al., (2020) reported that cancer patients in low-income countries, as Zambia, experienced heightened financial difficulties that worsened access to timely cancer treatment, exacerbating health inequities.

This finding resonates with the financial strain reported by Zambian participants, where monthly incomes ranged from ZMW 2,000 to 10,000, further underscoring the compounded challenges faced by those in lower-income buckets.

However, contrasting findings from Musche et al., (2020) in Germany suggest that demographic factors, such as socioeconomic status and income, may not always directly influence treatment outcomes. This study found that strong government support during the pandemic, including subsidies and free access to healthcare, mitigated financial burdens for cancer patients, even among low-income groups. Similarly, studies in Japan (Harada et al., 2022) revealed minimal differences in healthcare access between high and low-income patients, attributing this to the country's universal healthcare system.

These contrasting findings underscore the role of systemic healthcare structures in moderating the impact of demographic factors on patient outcomes. While Zambia's context reveals significant disparities influenced by socioeconomic status, other settings demonstrate how robust healthcare policies and social support systems can reduce these inequities, highlighting an area for potential policy improvement in Zambia.

5.2 Theme 1: Impact of Long COVID-19 on Cancer Treatment

The disruption of cancer treatment due to Long COVID-19 symptoms was one of the most significant challenges faced by participants. Chemotherapy, radiation therapy, and regular follow-ups were often delayed, leading to worsening health conditions and increasing anxiety. This finding aligns with global research, such as the study by Monroy-Iglesias et al., (2021), which found that cancer patients in Italy experienced similar treatment delays due to Long COVID-19, with many facing complications from missed treatments. In Zambia, the impact was more severe due to systemic healthcare limitations. The healthcare system, already strained by a lack of resources and staff shortages, was further overwhelmed by the COVID-19 pandemic. Participants reported long waiting times, delayed diagnoses, and postponed treatments, which had serious implications for their overall cancer prognosis. A study conducted in India by Desai et al., (2021) similarly highlighted that cancer patients in low-resource settings were disproportionately affected by pandemic-related healthcare disruptions, leading to poorer outcomes compared to patients in more developed countries.

In contrast, studies in countries with more robust healthcare systems present a different perspective. For instance, Young et al., (2020) highlighted that in the UK, treatment delays were mitigated through quick adaptations, such as telemedicine and prioritization of urgent cancer cases. These interventions significantly reduced the negative impact of Long COVID-19 on cancer care. Similarly, Harada et al., (2022) found that in Japan, a combination of universal healthcare and proactive pandemic response measures ensured minimal disruption to cancer treatment schedules

However, not all research supports the significant treatment delays reported in this study. Massicotte et al., (2020) examined cancer care during the pandemic in Canada and found that while initial disruptions were reported, the healthcare system adapted swiftly, and the long-term impact on treatment schedules was negligible for most patients. This suggests that with sufficient resources and strategic planning, the challenges associated with Long COVID-19 can be mitigated, even in the context of a global health crisis.

These contrasting findings underscore the critical role of healthcare infrastructure and policy in determining how cancer treatment is affected by crisis like Long COVID-19. While the Zambian context reveals significant barriers, other nations demonstrate that timely interventions and adaptive healthcare strategies can minimize disruptions. This comparison highlights the urgent need for policy improvements and capacity building within Zambia's healthcare system to ensure continuity of cancer care during public health emergencies.

5.3 Theme 2: Psychological Distress from Long COVID-19 Symptoms

Psychological distress was a major concern for participants, who reported heightened anxiety, fear, depression, and isolation due to prolonged Long COVID-19 symptoms. These mental health challenges were compounded by their existing cancer diagnoses, making it difficult for participants to maintain a positive outlook on their recovery.

Global studies have documented similar findings Graham et al. (2021) and Cushio et al., (2020) reported that cancer patients in the United States with Long COVID-19 faced significant psychological challenges, including heightened fear of death, anxiety about treatment disruptions, and feelings of hopelessness.

However, in high-income countries, access to psychological support services helped mitigate some of these issues. For instance, cancer patients in the UK were able to access teletherapy and mental health hotline, which provided critical emotional support during the pandemic (Gulia et al., 2020).

In Zambia, participants had limited access to mental health services. Many reported feeling isolated and unsupported, particularly during the early months of the pandemic when healthcare facilities were overwhelmed with COVID-19 cases. The lack of psychological support in Zambia reflects the findings of Chama et al., (2021), who noted that mental health services in low-income countries are often underdeveloped or inaccessible, leaving patients to cope with emotional distress on their own. Participants in this study frequently turned to family and spiritual support to manage these challenges. This reliance on familial and religious networks has also been highlighted in studies from Kenya (Julia, 2023) and South Africa (Mthetwa, 2023), where patients used spirituality and prayer to alleviate the emotional toll of long COVID-19 and cancer.

However, not all studies align with these findings. A study conducted by Martinez et al., (2020) in Mexico revealed that while psychological distress was prevalent among cancer patients with Long COVID-19, community-based mental health interventions, such as peer support groups, effectively reduced feelings of isolation and anxiety. Similarly, a study by Lee et al., (2020) in South Korea found that structured mindfulness and emotional regulation programs significantly improved the psychological well-being of cancer patients during the pandemic. These studies demonstrate that with targeted mental health interventions, even low-resource settings can achieve better psychological outcomes for cancer patients.

In contrast to the widespread distress observed in Zambia, Akoto et al., (2021) noted a surprising resilience among some cancer patients in Australia, who viewed the pandemic as an opportunity to refocus on self-care and emotional growth. This finding highlights that individual and contextual factor, such as cultural attitudes and access to resources, play a significant role in shaping psychological responses to Long COVID-19.

The findings of this study underscore that psychological distress among cancer patients with Long COVID-19 is a universal issue (Bazar et al., 2022), but its impact is more severe in low-resource settings like Zambia, where mental health services are scarce. The contrasting evidence from other regions highlights the potential benefits of integrating culturally sensitive mental health interventions into cancer care in Zambia, emphasizing the need for systemic reforms to address these gaps during global crisis like the COVID-19 pandemic.

5.4 Theme 3: Coping Mechanisms Used by Patients

Despite the overwhelming challenges, participants demonstrated resilience by employing various coping strategies to manage their dual diagnoses of cancer and Long COVID-19. The most common strategies included spirituality, family support, and maintaining a positive outlook. These findings align with studies from other countries, where similar coping mechanisms were observed among cancer patients with Long COVID-19. For example, in a study conducted in South Korea, Lee et al., (2020) found that cancer patients used mindfulness and positive thinking as key strategies to cope with Long COVID-19. In Zambia, participants similarly reported finding comfort in focusing on small victories and maintaining hope, which provided them with the strength to continue their cancer treatments despite the added burden of Long COVID-19.

Spirituality played a particularly strong role among Zambian participants, with many turning to prayer as a coping mechanism. This finding is consistent with research from other African contexts, where faith and religion are deeply embedded in the cultural approach to illness and recovery. A study by Pavitra et al., (2021) in Uganda found that cancer patients relied heavily on religious faith to navigate their treatment journeys, often seeing illness as a test of their spiritual endurance. Social support, particularly from family, was another key coping mechanism. Participants described how their families provided emotional and practical support, which helped them manage the stress of Long COVID-19 and cancer. This is a common finding across studies in both high and low-income countries. In the United States, for instance, Pavitra et al., (2021) reported that cancer patients leaned on their family networks for support during the pandemic, finding solace in the presence of loved ones, even when interactions were virtual.

However, not all studies emphasize the same coping strategies. A study by Martinez et al., (2020) in Mexico found that economic hardships forced some cancer patients to adopt maladaptive coping mechanisms, such as withdrawing from social support networks or relying on substance use to manage stress. Similarly, a study in Australia by Akoto et al., (2021) highlighted a reliance on digital support platforms, such as telemedicine and online counseling, rather than traditional familial or spiritual support. This difference suggests that cultural, economic, and systemic factors significantly influence the coping mechanisms employed by patients in different settings.

Moreover, some research challenges the effectiveness of spiritual or family reliance as a sole coping strategy. For instance, Graham et al., (2021) reported that while faith and family were crucial for emotional resilience, patients in the United States who lacked access to structured psychological interventions, such as cognitive behavioral therapy (CBT), experienced higher levels of distress. This contrasts with the findings from Zambia, where formal mental health services were largely absent, yet participants leaned heavily on traditional support systems.

These results show that while spirituality and family support underscore the importance of culturally relevant support systems for cancer patients in Zambia, they may not be sufficient to address all aspects of emotional distress. The contrasting evidence suggests that integrating formal mental health services, peer support groups, and tailored psychological interventions could complement traditional coping mechanisms, offering a more holistic approach to patient care.

5.5 Theme 4: Healthcare Access and Support Challenges

The challenges participants faced in accessing healthcare services during the pandemic were significant and multifaceted. Delays in treatment, long waiting times, financial burdens, and lack of adequate support from healthcare providers were common complaints. These challenges were not unique to Zambia, similar issues were reported globally as healthcare systems struggled to manage both COVID-19 and chronic conditions like cancer.

In Zambia, however, the limitations of the healthcare system were more pronounced. Participants reported feeling neglected as cancer care services were deprioritized during the pandemic. This mirrors findings from other low-resource settings, where overwhelmed healthcare systems left patients with chronic illnesses like cancer without adequate care (Chama et al., 2021).

Similarly, a study by Gulia et al., (2020) highlighted that in low-income countries, healthcare resource allocation during the pandemic exacerbated inequalities, leaving vulnerable populations to face delayed or denied treatments.

In contrast, Monroy-Iglesias et al., (2021) found that in the UK, rapid adaptations in healthcare delivery, such as telemedicine and prioritized appointments for urgent cases, mitigated the impact of the pandemic on cancer patients. These innovations allowed healthcare systems to continue providing care for chronic illnesses while managing COVID-19 cases. In Zambia, such measures were either unavailable or insufficient, and the healthcare system's focus on COVID-19 left many cancer patients feeling overlooked.

Financial strain was another major issue highlighted by participants. Managing the costs of both cancer treatment and Long COVID-19 care was overwhelming, with expenses such as medications, transportation, and follow-up appointments significantly burdening their already limited resources. This finding aligns with studies in other low-income countries, where the pandemic's financial toll deepened healthcare inequities (Gulia et al., 2020). However, in high-income settings, government-funded subsidies and insurance systems often alleviated such financial challenges. For example, Harada et al., (2022) reported that in Japan, universal healthcare policies ensured minimal out-of-pocket expenses for cancer patients during the pandemic.

Contrasting evidence from South Africa (Julia et al., 2023) revealed that even within low-resource settings, strategic partnerships between public and private healthcare providers reduced treatment delays and minimized financial burdens for cancer patients. This suggests that while systemic limitations exist in many low-income countries, innovative resource-sharing initiatives can help bridge gaps in care delivery during crises.

Furthermore, some studies challenge the extent of disruption reported in Zambia. A study by Lee et al., (2020) in South Korea noted that although delays occurred early in the pandemic, healthcare systems adapted quickly, ensuring continuity of care through restructured workflows and extended clinic hours. This contrasts sharply with the Zambian experience, where participants continued to face significant access challenges well into the pandemic.

These results indicate that healthcare access challenges faced by cancer patients with Long COVID-19 in Zambia reflect broader issues of inequity in low-income countries. However, contrasting evidence from other settings demonstrates that strategic adaptations, such as telemedicine, resource-sharing, and healthcare subsidies, can mitigate these challenges. These findings underscore the urgent need for policy interventions in Zambia to prioritize cancer care during pandemics, strengthen healthcare infrastructure, and promote innovative solutions to manage the dual burden of chronic illnesses and global health crises.

5.6 Implications for Nursing

The findings of this study have significant implications for nursing, particularly in the areas of practice, administration, education, and research. Nurses play an important role in the care of cancer patients, and the insights from this study highlight the need for more integrated and patient-centered approaches to nursing care in times of crisis.

5.6.1. Nursing Practice

The delays in cancer treatment and the psychological distress experienced by patients underscore the need for nurses to prioritize holistic care. This includes addressing both the physical and mental health needs of patients with Long COVID-19 and cancer. Nurses must also be prepared to offer psycho-social support, helping patients navigate the emotional toll of treatment disruptions. This requires enhancing communication between healthcare teams and patients, ensuring that patients feel supported and informed throughout their treatment journeys.

5.6.2 Nursing Administration

The challenges highlighted in this study, such as healthcare system strain and delayed treatments, emphasize the importance of effective nursing administration. Nursing leaders must focus on improving resource allocation, ensuring that cancer care is not neglected during health crisis.

Nursing administrators should also advocate for policies that prioritize cancer patients and ensure that healthcare services are delivered efficiently, even in emergencies.

5.6.3 Nursing Research

The dual burden of cancer and Long COVID-19 presents an important area for further research. Nursing research should focus on developing evidence-based practices that address the specific needs of cancer patients with Long COVID-19. Future studies should explore the long-term effects of these conditions on patient outcomes and investigate interventions that can mitigate the physical and emotional impact of treatment disruptions.

5.7 CONCLUSION

Long COVID-19 significantly delayed cancer treatments such as chemotherapy and radiation therapy, leaving patients at a higher risk of disease progression and emotional distress. The dual burden of cancer and Long COVID-19 led to severe psychological distress. Patients reported anxiety, fear, and depression due to prolonged symptoms and treatment interruptions. Despite the overwhelming challenges, patients used various coping mechanisms, such as spirituality, family support, and mental resilience, to manage the emotional and physical toll of their illnesses. The pandemic overwhelmed Zambia's healthcare system, limiting cancer patients' access to timely care. This led to feelings of neglect and frustration among patients, who had to deal with financial burdens, treatment delays, and inadequate support from healthcare providers.

The findings from this study provide critical insights into the lived experiences of cancer patients with Long COVID-19 at the Cancer Diseases Hospital, Lusaka. The comparison with global studies reveals that while many challenges are shared universally, the specific context of Zambia's healthcare system exacerbated the difficulties faced by patients. These challenges, particularly in healthcare access and mental health support, underscore the need for stronger healthcare infrastructure and integrated care systems. Addressing these gaps will be essential for improving patient outcomes and ensuring that vulnerable populations are not left behind during future global health crises.

5.8 RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made to the Ministry of Health and the Cancer Diseases Hospital.

To the Ministry of Health

1. The Ministry should invest in strengthening Zambia's healthcare infrastructure to ensure that cancer treatment services remain uninterrupted during public health crisis. This includes increasing staffing levels, improving resource allocation, and ensuring that oncology services are prioritized alongside pandemic responses.
2. The Ministry should integrate mental health services into routine cancer care. Mental health support should be provided as part of the treatment package for cancer patients, particularly those dealing with Long COVID-19 symptoms.
3. The Ministry should develop comprehensive pandemic preparedness plans that specifically address the needs of chronic disease patients, including those with cancer. This includes ensuring the availability of telemedicine services, maintaining cancer treatment appointments, and providing financial support for vulnerable patients.
4. The Ministry should implement training programs for healthcare workers on managing dual diagnoses (e.g., cancer and Long COVID-19). This training should focus on both clinical and psycho-social care, ensuring that healthcare workers are equipped to meet the complex needs of these patients.

To the Cancer Diseases Hospital

1. The hospital should develop systems to ensure that cancer treatment continues uninterrupted during pandemics. This includes implementing telemedicine services, prioritizing urgent cases, and creating alternative treatment pathways for patients unable to attend in-person appointments due to Long COVID-19
2. The Cancer Diseases Hospital should establish dedicated mental health support for cancer patients. This can include counseling services, support groups, and psycho-social interventions to help patients manage the emotional toll of both cancer and Long COVID-19
3. The hospital should improve its communication strategies, ensuring that patients are well-informed about their treatment options and any potential delays. Effective communication can help alleviate some of the anxiety and uncertainty experienced by cancer patients.

4. The hospital should provide ongoing training for its staff on how to offer integrated care for patients with multiple health challenges, such as cancer and Long COVID-19. This includes both clinical training and education on providing holistic, patient-centered care.

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APPENDICES

Appendix 1: Information Sheet

Dear Participant,

I am a student studying at the University of Zambia, School of Nursing Sciences. As partial fulfillment of this program, students are required to undertake research in any area of interest that will be of benefit to the provision of quality health care and to contribute the scientific body of knowledge that will be beneficial to the entire society. I am carrying out a study on the **Patient Experiences of Long COVID at the University Teaching Hospital in Lusaka, Zambia**. The study is being conducted as part of MSP dissertation and it is strictly for academic purposes.

Participation

If you agree to take part in the study, you will be required to sign a consent form before you complete the questionnaire. Your participation in this study is purely voluntary and will not take much of your time. Please note that the study is purely academic and you are free to withdraw from the study at any given time if you so wish.

Confidentiality

Any information collected from this interview will be confidential. Please take note that no names will be indicated on the questionnaires. Only serial numbers will be used so that no participant can be identified at all.

Risks and benefits

There are no known risks involved in this study. There are no financial or material benefits for your participation in this study but the information you will provide will give an insight into the current situation. These insights will help with developing or adapting interventions on how to remedy the problem.

Appendix 2: Consent Form

I have read the information sheet carefully and the contents have been explained to me. I therefore voluntarily agree to participate in this study.

Participant’s signature: Date.....

Researcher’s signature:Date.....

Appendix 3: Interview Guide

I am a student from the University of Zambia, School of Humanities. I am carrying out a research on the **Patient Experiences of Long COVID-19 at Cancer Diseases Hospital in Lusaka, Zambia**. Information gathered would be used to design appropriate interventions for the program. Participation is voluntary. I would like to take your permission to use tape recorder for proper documentation of our discussions.

SECTION A: Demographic Characteristics of Participants

1. Age
2. Sex.....
3. Educational attainment
4. Occupation.....

SECTION B: Experiences of Long COVID-19 patients

1. Are you familiar with the concept of Long COVID and its impact on individuals?
2. Have you been diagnosed with long COVID?
3. If yes, when were you initially diagnosed?
4. How long have you been experiencing symptoms of long COVID?
5. Did you have a confirmed COVID-19 infection prior to experiencing long COVID symptoms?
6. If yes, how severe were your initial COVID-19 symptoms (mild, moderate, severe)?
7. Were you hospitalized during your initial COVID-19 infection?
8. What is your view on drugs and equipment used to treat Long COVID-19 patients?

SECTION C: Challenges of Long COVID-19 Symptoms among Cancer Patients

9. Have you experienced long term COVID-19 symptoms before?
10. Which symptoms were persistent?

11. How did these Long COVID-19 symptoms affect your treatment and recovery process?
12. Did you ever face any challenges in accessing healthcare due to lingering long COVID- 19 symptoms?
13. Did you receive adequate support from healthcare providers to manage both long COVID-19?

SECTION D: Coping mechanisms used by cancer patients with long COVID

14. What are some of the coping strategies that you used in managing physical and emotional aspect of both cancer and long COVID?
15. What challenges did you face in implementing these coping strategies?
16. What lifestyle changes did you make in order to cope with the long COVID-19?
17. Can you describe a specific situation where a coping strategy was particularly effective for you?