

IMPACT OF CANCER DIAGNOSIS AMONG CANCER PATIENTS IN THE VHEMBE DISTRICT OF
LIMPOPO PROVINCE, SOUTH AFRICA

RAFUNDISANI TAKALANI FRIDAH

Student Number: 15018375

A dissertation submitted in fulfillment of the requirements for the degree:

Masters of Nursing

Department of Advanced Nursing Science

School of Health Sciences

University of Venda

Supervisor

Prof D.U. Ramathuba

Co-Supervisor

Prof M.S. Maputle

28 September 2018

DECLARATION

I, **Takalani Fridah Rafundisani** declares that the dissertation entitled “**Impact of cancer diagnosis among cancer patients in Vhembe District of Limpopo Province, South Africa**” is my own work and that all sources used or quoted have been indicated and acknowledged by means of complete references. The research report has not been previously submitted in full or partial fulfilment of the requirements of the equivalent or higher qualification at any other recognised educational institution.

Student’s name **Takalani Fridah Rafundisani**

Signature: _____ **Date**.....

DEDICATION

This work is dedicated to my husband, Stephen for his support, our two children, Murendeni and Mususumeli for being a source of inspiration and all cancer patients for providing me with all the necessary information.

Acknowledgements

I would like to thank the following for their contributions and support during the study:
God Almighty for giving me the strength and inspiration;
My research supervisor, Prof DU Ramathuba and Co-Supervisor Prof MS Maputle;
My parents, Mr Samson and Mrs Samaria Tshifularo, for their support;
My husband, Stephen Rafundisani, for his support;
My two children, Murendeni and Mususumeli, for their patience;
The District Hospitals' CEOs and the oncology nurses for welcoming me to do my study;
All the participants, for cooperating willingly and responding to the questionnaires;
Mr Moses Moyo for assisting with data analysis, and
I am grateful to Dr P Kaburise from the English Department, University of Venda, for providing editorial assistance.

ABSTRACT

Historically, cancer is regarded as a disease with very devastating effects on human beings because it leads to many deaths across the world, compared to AIDS, tuberculosis and malaria collectively. Cancer diagnosis has impacted negatively on patients and their immediate families and has caused unbearable consequences. Unlike other chronic diseases, cancer patients undergo different types of treatments which affect their well-being and as a result they tend to have different experiences to those of other chronic diseases sufferers.

The study design used was a quantitative cross sectional survey. The purpose was to investigate the impact of cancer diagnosis on cancer patients in Vhembe district. The target population included all patients in the Vhembe District of Limpopo, South Africa who have been diagnosed with cancer in the past six months. Using a probability simple random, a sample of 207 patients diagnosed with cancer, from seven selected hospitals in Vhembe District were selected as respondents and a self-administered questionnaire was used to collect data. Data was analysed using a software package for descriptive statistics (SPSS version 23). Graphs, tables and charts were used to display the results visually and chi-square to compare variables. Ethical principles of privacy, anonymity, informed consent were considered. The findings revealed that cancer diagnosis has negative outcomes as patients experience physical hardship, psychological stress, financial difficulties, as well as interference with family and social life. The study recommended that cancer patients and their families, be supported through the cancer journey.

Keywords: Cancer, Diagnosis, Impact, Cancer patients, Oncology

ACRONYMS AND ABBREVIATIONS

ACS	American Cancer Society
AIDS	Acquired Immune Deficiency Syndrome
APA	American Psychological Association
CA	Cancer
CANSA	Cancer Association of South Africa
IARC	International Agency for Research on Cancer
IPQ	Illness Perception Questionnaire
IPQ-R	Illness Perception Questionnaire Revised
NBCF	National Breast Cancer Foundation
NCI	National Cancer Institute
WHO	World Health Organisation

TABLE OF CONTENTS

DECLARATION	ii
ABSTRACT.....	v
TABLE OF CONTENTS.....	vii
LIST OF TABLES.....	x
LIST OF FIGURES	xi
CHAPTER ONE.....	1
OVERVIEW OF THE STUDY	1
1.1. Introduction and Background.....	1
1.2. Problem Statement	5
1.3. Study Rationale	6
1.4. Significance of the study	6
1.5. Purpose of the study	6
1.6. Research objectives	7
1.7. Research questions	7
1.8. Definition of terms used in the study	7
1.9. Structure of the dissertation.....	8
1.10. Summary.....	8
CHAPTER TWO	10
LITERATURE REVIEW	10
2.1. Introduction	10
2.2. Impact of cancer diagnosis on cancer patients	10
2.2.1 Cancer	10
2.2.2 Stages of cancer development and management	11
2.2.3 Mortality	12
2.2.4 Common impact of cancer diagnosis on patients	13
2.3. Coping strategies from cancer diagnosis.....	18
2.3.1 Information needs of cancer patients	19
2.3.2 Information regarding a cancer diagnosis.....	21
2.3.3 Family support	22
2.4. Illness perceptions, psychological distress and coping strategies of cancer patients....	24
2.4.1 Illness Perceptions and coping strategies of cancer patients	24
2.4.2 Relationship between psychological distress and coping strategies among cancer patients	25
2.5. Theoretical/conceptual framework.....	26
2.6. Summary	29
CHAPTER THREE	30

RESEARCH DESIGN AND METHODOLOGY	30
3.1. Introduction	30
3.2. Study population	31
3.3. Sampling.....	32
3.3.1. Sampling of hospitals.....	32
3.3.2. Sampling of respondents.....	32
3.4. Inclusion criteria.....	34
3.5. Data collection.....	34
3.6. Data collection instrument	35
3.7. Data collection procedures	35
3.8. Validity and reliability	35
3.8.1. Validity application.....	36
3.8.2. Reliability application.....	37
3.8.3. Data Analysis.....	37
3.9. Research ethics.....	37
3.9.1. Ethical clearance	38
3.9.2. Informed Consent.....	38
3.9.3. The right to self –determination.....	38
3.9.4. Right of privacy	39
3.9.5. Confidentiality	39
3.9.6. Anonymity	39
3.9.7. Right to fair treatment of respondents	39
3.10. Summary.....	40
CHAPTER FOUR.....	41
RESULTS PRESENTATION, ANALYSIS AND DISCUSSIONS	41
4.1. Introduction	41
4.2. Section I: Prevalence of cancer diagnosis by demographic characteristics of patients in Vhembe District	41
4.3. Section II: Impact of cancer diagnosis and its treatment among cancer patients.....	48
4.4. Section III: Strategies used by patients to cope with the impact of cancer diagnosis	59
4.5. Section IV: Illness perceptions’ and psychological distress’ effects on the coping strategies of cancer patients in the Vhembe District.....	60
4.6. Chi Square results.....	62
4.7. Conclusion.....	68
CHAPTER FIVE	69
SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS.....	69
5.1. Introduction	69

5.2. Summary of research.....	69
5.2.1. Summary of findings.....	69
5.3. Chi-square results	73
5.4. Integration of findings related to theoretical framework	75
5.4.1. Representation of health threat	75
5.4.2. Stage 1: Theoretical interpretation.....	76
5.4.3. Stage 2. Coping.....	76
5.4.4. Stage 3: Appraisal	77
5.4.5. Emotional response to health threat.....	77
5.5. Limitations	78
5.6. Recommendations	78
5.7. Conclusion remarks.....	80
REFERENCES.....	81
ANNEXURES.....	105
ANNEXURE A: Consent Form	105
Questionnaire	106
ANNEXURE M: Ethical Clearance Certificate.....	122

LIST OF TABLES

Table 4.1: Demographic characteristics.....	41
Table 4.2: Distribution of respondents by family cancer history.....	44
Table 4.3: Distribution of respondents by cancer diagnosis period of time	45
Table 4.4: Various types of cancer in respondents	47
Table 4.5: Impact of cancer diagnosis among patients in Vhembe District	53
Table 4.6: Time taken to start treatment	56
Table 4.7: Duration on treatment since treatment started	57
Table 4.8: Results on change in life after cancer diagnosis.....	58
Table 4.9: Coping strategies possibly used by patients diagnosed with cancer.....	59
Table 4.10: Effects of illness perceptions and psychological distress on coping strategies of cancer patients.....	61
Table 4.11: Chi-square results for impact of cancer diagnosis on coping strategies used and impact of cancer diagnosis	63
Table 4.12: Illness perceptions and effects of psychological distress on coping strategies used by patients, to deal with impact of cancer diagnosis.....	64

LIST OF FIGURES

Figure 2.1: The self-regulatory model.	27
Figure 3.1: Map for Vhembe District Municipalities	31
Figure 4.1: Distribution of respondents by time for waiting for results	46
Figure 4.2: Results on who results were communicated.....	48
Figure 4.3: Feelings of respondents	48
Figure 4.4. Reaction of respondents after getting results.....	49
Figure 4.5: What respondents thought of doing after cancer diagnosis.....	50
Figure 4.6: Main concerns of the cancer patients after diagnosis.....	51
Figure 4.7: Impact of cancer diagnosis on respondents.....	52
Figure 4.8: Types of cancer treatments offered	56
Figure 4.9: Respondents' most dreaded effects of cancer diagnosis	58

LIST OF ANNEXURES

Annexure A	Consent Form
Annexure B	Questionnaire
Annexure C	Application for Permission from Limpopo provincial government department of health
Annexure D	Permission from Limpopo provincial government department of health
Annexure E	Application for Permission from Vhembe District Department of Health
Annexure F	Permission from Vhembe District Department of Health and selected hospitals
Annexure G	Permission from Siloam Hospital
Annexure H	Permission from Elim Hospital
Annexure I	Permission from Malamulele Hospital
Annexure J	Permission from Louis Trichardt Memorial Hospital
Annexure K	Permission from Donald Fraser Hospital
Annexure L	Permission from Messina Hospital
Annexure M	Ethical Clearance Certificate

CHAPTER ONE

OVERVIEW OF THE STUDY

1.1.Introduction and Background

Cancer is defined as an abnormal and uncontrolled growth of body cells that are likely to affect almost any part of the human body (Piotie, 2017:1; World Health Organisation, (WHO, 2017). The main problem with these abnormal cells is that they grow and spread way beyond their usual limitations by invading adjoining healthy organs of the body and this makes cancer treatment problematic (Northouse, Katapodi, Schafenacker & Weiss, 2012:236; WHO, 2017). When organs are infected by cancer cells, they malfunction leading to different body conditions and eventually death - a dreaded outcome (National Cancer Institute, 2018).

In 2016, South Africa was ranked 50th on the World Cancer Research Fund's list of countries with the highest cancer prevalence rates (Health24, 2017). The most prevalent types of cancer among South African men in 2016 were prostate cancer, lung, oesophagus, colon/rectum and bladder cancer, while breast cancer, cervical, uterus, colorectal and oesophageal cancer are the most prevalent among South African women (Piotie, 2017:1). Being diagnosed with cancer is one of the most feared phenomenon among human being because it negatively impacts on patients, in many ways (Ramsey, Bansal, Fedorenko, Blough, Overstreet, Shankaran & Newcomb, 2016:981). Cancer diagnosis has different impact on different patients and causes them to develop perceptions, attitudes and beliefs about cancer; these eventually determine how patients behave afterwards (Mathews, 2009). Cancer treatment and coping strategies usually depend on the impact of the disease on the perceptions, attitudes and beliefs about the disease that patients have, as these play a crucial role on the patients' level of understanding of the disease (Bain, Lain & Thon, 2014). Understanding cancer diagnosis and its impact on early mortality among cancer patients is vital as that would affect the perceptions and beliefs of cancer patients towards a diagnosis of cancer. This research is designed to study impact of a cancer diagnosis among cancer patients in the Vhembe District of Limpopo Province, South Africa.

One of the top ten major causes of human mortality, worldwide, is cancer because it claims more lives than AIDS, tuberculosis and malaria (Venter, 2014:12; Pietrangelo & Holland, 2017). According to the WHO's 2018 report, 54% of the 56.9 million deaths that occurred

worldwide in 2016 were due to the top ten killers diseases, including cancer. The report shows that cancer was the eighth killer disease in 2000 and the sixth in 2016 (WHO, 2018) indicating a rise in the death of patients from various types of cancers; the report also indicated that these deaths were related to lung and tracheal cancer which affected 1.7 million people globally. The National Cancer Institute (2018) reports that in 2012, cancer was among the leading causes of death throughout the worldwide from which 8.2 million deaths and 14.1 million new infections were reported. Based on these reports, it could be deduced that cancer-related deaths still remain a cause for concern, worldwide.

Cancer is a well-known public health global problem, significantly, associated with death and numerous human disabilities (Pietrangelo & Holland, 2017, Ramathuba, Ngambi, Khoza, & Ramakuela, 2016). In developing countries, cancer has been regarded as the second leading cause of death among adults (Sait, Anfinan, Eldeek, Al-Ahmadi, Al-Attas, Sait, Basalamah, Al-Ama & El-Sayed, and 2014). In 2012, cancer caused 8.2 million deaths in the world, with more than half of all cancer deaths each year being from lung, stomach, liver, colorectal and female breast cancer (IARC, 2012). As one of the world's leading causes of death, cancer has far-reaching economic impact, in the form of premature deaths and disabilities, causing governments to use substantial amounts of money in addressing the disease (Northouse, Katapodi, Schafenacker. & Weiss, 2012:56). For example, a Press release by Health24 (2017) indicates that in 2008, premature deaths and disabilities of the productive workforce from cancer had an estimated total global economic impact of US\$895 billion. This implies that more financial resources will need to be committed to fighting the cancer endemic alone. In 2015, 58,237 people died of cancer in South Africa while 114,091 new cancer cases were reported in the same year (Nhlapo, 2016). Besides, emotional, physical and psychological impact, cancer diagnosis brings about financial problems among families of the affected members. Generally, cancer treatment can be very expensive for the majority of South African cancer patients who may not afford to pay between R10, 000 and R1 million per year on treatment, depending on the type of cancer (Nhlapo, 2016). In South Africa, cancer can be diagnosed and treated quite successfully, as long as this is done on time, before the disease has spread throughout the body. The situation in rural South Africa, where the study was conducted, however, presents a different and complex picture in which the poor populace are either ignorant of whether cancer can be treated or were scared of getting tested unless they fall ill and then get diagnosed.

Predictions are that by 2030, 12 million people will die yearly due to cancer-related deaths and 9 million of these deaths would be in developing and under-developed countries (American Cancer Society ACS, 2016:5; IARC, 2012:2). According to Venter (2014:12), in 2008 approximately 12,7 million cancer cases were reported with 7, 6 million cancer deaths, worldwide; about 56% of the reported cases and 64% of the deaths occurred in the economically-developing world (Venter, 2014:12). In 2005, South Africa's new cancer cases were 25678 males and 27205 females (Venter, 2014: 12). Health24 (2017) also predicts a 78% increase in cancer for South Africa by 2030; these figures are naturally, a cause for concern for a single country, such as South Africa where health facilities are at the disposal of the general population.

The manner in which patients perceive and cope with the stress of any illness affects their adaptation to chronic illnesses, such as cancer (Kiliçkaya & Karakaş, 2015: 483). Literature shows that cancer diagnosis does not only affect the patients but also the families and caregivers who always feel depressed, anxious, and afraid; effects viewed as being common and normal responses to this life-changing experiences (ACS, 2016:5). This implies that cancer patients should be given an opportunity to express their concerns such as fears, pain, and other issues to health persons, as this help them to feel more comfortable. Daher, (2012:23) says:

“Although depression, anxiety and other emotional problems could be eased by a combination of medicines, support groups, or psychotherapy, there is a need for cancer patients to realise and accept that they need help to deal with their emotions and responses to the major changes that cancer brings to their lives.”

The above statement emphasises the need for cancer patients to be provided with a well-planned care that fully involves them and their families in order to reduce these negative experiences and problems (Sprah & Sostaric, 2004:36).

From Daher's (2012:25) point of view, it is expected that a person's mental attitude in response to cancer diagnosis would certainly affect his/her chances of survival, therefore, Wu and Kim (2009: 23) suggest that a strong fighting spirit is needed in order for one to withstand emotional and psychological impact of cancer diagnosis in a positive manner that would make the patient cope well with cancer treatment. Cancer patients need to be listened to as they express their feelings, beliefs, perceptions and attitudes towards cancer and its

therapies. To attain this state of acceptance, Sprah and Sostaric (2004:36) suggest that cancer patients have to be encouraged and supported emotionally in addition to the availability of many ways of coping fundamentally meant for them and intended to reduce distress and to improve the quality of their lives. Sprah and Sostaric (2004:36) further observe that most of the present studies do not provide convincing evidence on why psychological coping strategies which include acceptance, fatalism, denial, helplessness and hopelessness play an important medical part in the endurance or reappearance of cancer.

Wu and Kim (2009:3) note that cancer has profound effects, including bodily and financial challenges linked to its diagnosis and treatment; these consequences are dreaded by patients causing them to experience deep psychosomatics. The period between cancer diagnosis and treatment proves to be the most gruelling time as it causes in cancer patients' fear of the unknown and they become desperate and desolate (Taghavi, Dehghan, Mardani & Rezaee, 2015:134). During the waiting period to start cancer treatment, patients begin to be anxious about how long they will continue to live, the methods they will use to overcome the impending complications arising from the treatment process, the physical pain and related side effects, the self-blame, as well as worries for their families (Wu & Kim, 2009:3). Nhlapo (2016) note that patients diagnosed with cancer who cannot afford to pay for treatment feel hopeless, and they view the world as beyond their control, they anticipate undergoing a painful death and this has severe impact on their lives. Besides these challenges, most of the primary health-care services in rural South Africa, including Vhembe District are reported to be not cancer-oriented (Health24, 2016), for example, cancer testing is only done in selected centres such as Polokwane Provincial hospital, for the whole of the Limpopo Province. Cancer-related deaths in Vhembe District have been on the rise from 2014 to 2016 as shown by annual mortality rate for each main hospital in Vhembe District Hospitals, Limpopo, in Table 1.1.

Table 1.1: Cancer annual mortality rate from age 25 years and above, in the financial year 2014-2016, in the Vhembe District Hospitals, Limpopo

Hospital	Year		
	2014	2015	2016
Elim	54	61	73
Louis Trichardt	52	64	73
Malamulele	58	72	85

Messina	57	69	73
Siloam	57	69	86
Tshilidzini	72	86	89
Donald Fraser	54	60	72
Totals	404	481	551

Source: Vhembe District Health Information Services, 2014-2016

Table 1.1 reveals that cancer mortality rate was on the increase from 2014 to 2016, indicating that new cancer infections were also on the rise. The mortality rate increased by 19.1% between 2014 and 2015 and 14.6% between 2015 and 2016. The increase in the cancer mortality rate could be due to a number of factors and has many impacts that this study was designed to invest. The following subsection describes the problem being investigated by this study.

1.2. Problem Statement

In Vhembe District, at least 1563 people have been diagnosed with cancers and are undergoing treatment in various hospitals, while others are awaiting the commencement of treatment (Hayes & Bornman, 2017: 118). The Table 1.1 depicts the alarming mortality rate among cancer patients in Vhembe District which translates to negative impact on patients and their families. Cancer patients have different perceptions about the illness and diverse health beliefs which impact on how patients cope with cancer, at the time of diagnosis to the beginning of the therapy. A study by Ramathuba, Jacqueline and Ndou (2014:186) reports that patients diagnosed with cancer experience poor communication and attitudes, experienced body changes, sense of withdrawal and depression and problems with follow-up care. According to Ramathuba et al. (2014:186) a cancer diagnosis is not limited to a person's physical experiences, but also impacts a person's soul and spirit. Many studies on cancer diagnosis deal much with experiences while paying less attention to the impact of cancer diagnosis on the patients. The Observer (November 09, 2017) also report that Vhembe District faces a serious challenges with regards to cancer and oncology and these have many impact particularly women. However, the paper does not specify the impact of cancer diagnosis among the patients. Furthermore, studies on cancer diagnosis also focus on specific aspects such as perceptions (Semenya & Potgieter, 2014:4) or dealt with a specific type of cancer such as cervical cancer (Ramathuba et al., 2016) with isolated references to impact of the diagnosis to the patients. Patients diagnosed with cancer experiences extreme fear due to the entrenched myths and beliefs surrounding cancer. The researcher as an oncology nurse,

has observed that lack of literacy information about how cancer impacts on cancer patients and their caregivers causing them to suffer physical, emotional and psychological stress. The majority of patients are secretive and do not come out in the open when diagnosed; this prolongs the disease's process resulting in patients not starting treatment on time and failing to get support. Additionally, some patients only come forth when cultural and spiritual remedies have failed, by then, the disease would have taken its toll. This aggravates the situation as well as generating fears and agony among newly-diagnosed patients, when they observe other patients dying on a regular basis. Patients thus lose hope and do not see a reason to live, which affects their quality of life and their survival.

1.3. Study Rationale

The rationale for conducting this study is to identify the impact of cancer diagnosis and coping strategies in dealing with physical, psychological and emotional problems, of patients diagnosed with cancer, especially, those in rural settings. A similar study has not been undertaken in Vhembe District, despite extensive global research into cancer patients' handling of the disease. It is important, therefore, to investigate the impact of the diagnosis among cancer patients to ascertain their coping strategies.

1.4. Significance of the study

This study seeks to contribute to health policy, nursing education, nursing practice, and health research and the handling of cancer patients. The findings of this study, hopefully, will influence policy makers to consider putting in place strategies and facilities that likely to reduce the severe negative impact of cancer on patients. The study is likely to contribute to health research providing information and insights about the impact of cancer diagnosis among patients in rural areas. The study may stimulate further research cancer diagnosis impact in other districts around South Africa. Importantly, patients diagnosed of cancer may benefit from the findings of this study on how to deal with the diagnosis and impact of cancer.

1.5. Purpose of the study

The purpose of the study is to investigate the impact of cancer diagnosis on cancer patients, from hospitals in the Vhembe District.

1.6. Research objectives

The objectives underpinning this research were, to:

- Establish the prevalence of cancer diagnosis by demographic characteristics of the patients in Vhembe District;
- Determine the types of cancer that patients were diagnosed of in Vhembe District;
- Determine the impact of cancer diagnosis among cancer patients in the Vhembe District;
- Identify the coping strategies commonly used by cancer patients before and during treatment; and
- Determine how illness perceptions and psychological distress affect the coping strategies of cancer patients in the Vhembe District.

1.7. Research questions

The study is guided by these research questions:

- What is the prevalence of cancer diagnosis by demographic characteristics?
- What types of cancers are the patients in Vhembe District diagnose of?
- What is the impact of cancer diagnosis among cancer patients in Vhembe District?
- What coping strategies are used by cancer patients to overcome the impact of cancer diagnosis?
- How do illness perceptions and psychological distress affect the coping strategies of patients diagnosed of cancer?

1.8. Definition of terms used in the study

Cancer

Cancer is a group of diseases characterized by an uncontrolled growth and spread of abnormal cells (American Cancer Society, 2015). For this study cancer means a malignant and invasive growth or tumour and malignancy in any body tissues.

Diagnosis

Diagnosis refers to the act or process of identifying or determining the nature and cause of a disease or injury through evaluation of patient history, examination, and review of laboratory data (The Free Dictionary, 2011 on line). Dictionary (2013) defines diagnosis as “the act or procedure of determining or identifying a diseased condition by means of a

medical examination and laboratory test” In this study cancer diagnosis refers to a systematic medical process of determining whether a patient has cancer cells in his/her body or not.

Impact

Impact refers to a measure of the tangible and intangible effects (consequences) of one thing or entity's action or influence upon another (Business Dictionary, 2009). In this study impact means negative effects of cancer diagnosis on patients waiting and undergoing treatment.

Patient living with cancer

A patient living with cancer is a person who has been diagnosed of cancer and is living with cancer whether he/she is undergoing treatment or not (Business Dictionary, 2009). This study adopted the above definition of a cancer patient.

1.9. Structure of the dissertation

This dissertation is divided into five chapters each dealing with a major aspect of the research. Chapter 1 introduced the dissertation by providing the background, the problem statement, study rationale, significance, research purpose, research questions and definition of terms. Chapter 2 is on literature review, from various sources, using different subtopics. The review is done based on the research questions and other pertinent aspects. The chapter also provides the theoretical framework that was adopted. Chapter 3 elaborates on the research methodology; this was followed by the ethical issues observed during the conducting of the research. Chapter 4 presents analyses and interprets the results of the study. Chapter 5 is the last chapter in which conclusions of the study are summarised. The chapter also provides the limitations and recommendations from the research.

1.10. Summary

In this chapter, the researcher provided the introduction and overview of the research study; this included the background to the research problem, rationale, significance, purpose of the

study, objectives and research questions. The next chapter describes the literature reviewed for the study.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This study is on the impact of cancer diagnosis among cancer patients in the Vhembe District of the Limpopo Province, South Africa. Literature review is structured around the objectives of the study, namely, the impact of cancer diagnosis on cancer patients, and how a cancer diagnosis, perceptions about the illness and psychological distress affect the coping strategies of cancer patients. To make the literature review manageable, certain concepts are discussed under specific subheading of each objective.

2.2. Impact of cancer diagnosis on cancer patients

In order to understand how a diagnosis of cancer affects patients, it was necessary for the researcher to elucidate on two important concepts of this research - cancer and mortality. It is difficult to write this section without referring to either of them; hence, they are deservedly treated under the immediate subheadings.

2.2.1 Cancer

Cancer is a disease in which a group of abnormal cells grow uncontrollably by disregarding the normal rules of cell division (Hejmadi, 2010:6). According to Ludmila and Flores (2009: 10), cancer is group of hereditary diseases that cause abnormality of key genetic material which in turn, leads to molecular pathway that are critical for carcinogenesis. Cancer is characterised by an uncontrolled growth of the cells which then tend to invade the surrounding tissue and to metastasis to distant body (Jones, 2011:25; Mosby, 2013:15). Cancer is one of the major killer diseases throughout the world, including South Africa (Cancer Association of South Africa CANSA's, 2012:33). Many people are diagnosed with cancer, some of whom are aware of the disease and others are not. Cancer occurs in many parts of the body, namely, in the breast, skin, lungs, colon, prostate and the lymphoma; additionally, showing different symptoms, subject to the type of cancer which a patient has developed (Kiliçkaya & Karakaş , 2015:486). This implies that the term 'cancer' is a general one referring to categories of diseases identified by abnormal cells that grow and invade healthy cells in the body (National Breast Cancer Foundation NBCF, 2014). Davis

and Balentine (2011) define cancer as the uncontrolled growth of abnormal cells anywhere in a body and these cells are termed either, cancer, malignant, or tumour.

According to National Cancer Institute NCI (2012), cancer can be classified as a hereditary disease which result from certain alterations to inheritable factors that control the way human body cells function, especially, how they grow and divide. Cancer is thought to first start from at least one abnormal cell with a multiple of damaged or deformed genes (NBCF, 2012). When the abnormal cell survives and multiplies out of control, this results in a cancerous (malignant) tumour (Harrington & Smith, 2008:2667). The disease spreads throughout the body when these cancerous cells break away from the original tumour and penetrated into the blood vessels or lymph vessels, which then branch into tissues throughout the body (Schneider, 2013). Cancer cells spread throughout the body causing damage to healthy tissues and organs when it reaches the metastasis stage (Davis & Balentine, 2011).

2.2.2 Stages of cancer development and management

Cancer progresses in five stages, 0 to 4, which are treated and managed differently (Cancer.Net, 2015). The stages of cancer progression are briefly described below.

Stage 0 describes cancer in situ or in the place in which cancer cells are still located in the place they started and have not spread to nearby tissues (Cancer Institute NSW. 2017). Cancer at this stage is often highly curable, usually, by removing the entire tumour with surgery (Cancer, Net 2015).

Stage I also known as ‘early-stage cancer’ is when small cancers or tumours have grown but not deeply into nearby tissues (Cancer Institute NSW. 2017). At this stage the cancer is still minute, has not spread throughout the body but just within the vicinity tissues (Cancer, Net 2015). No harm or damage is realised.

Stage II and III is when larger cancers or tumours would have grown more deeply into surrounding organs and tissues and they are likely to move to the lymph nodes, but they have yet not spread out to other parts of the body (Cancer Institute NSW. 2017).

Stage IV at times call ‘advanced or metastatic cancer’ occurs when the cancer has spread to other organs or parts of the body.

Management of cancer at each stage depends on the type of cancer that a patient is suffering from. Generally, cancer management involves cancer diagnosis, treatment and survivorship care (WHO, 2017). *Cancer diagnosis* based on pathological examination is regarded as the first critical step in the management. *Cancer treatment* involves careful consideration of evidence-based options that usually consist of many therapeutic modalities such as surgery, radiotherapy and systemic therapy ((Royal College of Obstetricians and Gynaecologists, 2014:32; WHO, 2017). Cancer treatment services are based on well-established health system that guarantees high-quality, effective, safe and accessible treatment for every cancer patients. *Survivorship care* occurs when active treatment for cancer is developed into a plan to monitor the possibility of cancer relapse or spread, supervision and management of health problems linked to cancer diagnosis or cure and assessment for development of other kinds of cancer types (Royal College of Obstetricians and Gynaecologists, 2014: 32). Survivorship care depends on a number of strategies, such as frequent check-ups and/or tests meant to control the effect of cancer diagnosis and treatment (WHO, 2017).

2.2.3 Mortality

By definition, mortality could mean a comparative occurrence of death, within a particular group considered, according to a number of factors, such as age or occupation (Business Dictionary, 2013). Cancer can lead to early mortality or premature deaths among patient due to a number of factors that arise from this situation. When an individual is diagnosed with cancer, the person usually, suffers from stress to cope with the cancer itself, as well as its financial implications, as cancer requires a lot of financial resources for treatment. According to Barton (2016: 24) early mortality among cancer patients can be due to financial distress they suffer upon being diagnosed with the disease. The survival chances of cancer patients also depended at the stage at which they were diagnosed. Excess rate ratios for mortality within 1 year of diagnosis indicate that stage and age were the prominent cofactors, followed by gender, loss of income and place to stay as most common contributory factors. (McPhail, Johnson, Greenberg, Peake & Rous, 2015). This implies that early mortality among cancer patients is due to many factors. Literature also shows that early cancer relapse was found to be linked to a noticeable magnified risk of death, within the first 6 months post-treatment (Cheung, Renfro, de Gramont, Saltz, Grothey, Alberts, Andre, Guthrie, Labianca, Francini, Seitz, O'Callaghan, Twelves, Van Cutsem, Haller, Yothers & Sargent, 2015:212). Cheung, *et al.*, (2015) also indicate that a greater likelihood of early mortality was linked to advanced

age, male gender, stage of the tumour and grade, while treatment received was difficult to use for prediction.

2.2.4 Common impact of cancer diagnosis on patients

There is growing awareness that cancer can have a major impact on newly-diagnosed patients, those living with the disease, and their families. A diagnosis of cancer is not only a stressful event for the patients, but partners and other family members also can suffer from clinical levels of depression and severe levels of anxiety and stress reactions (Sharp & Timmons, 2010:12). Patients diagnosed with cancer tend to form certain perceptions about the disease and this shapes the course of progression of their beliefs and attitudes altogether, hence, the need to examine perceptions on the illness as an impact factor on early oncology patients. Well-documented areas of impact of cancer diagnosis include, finance, psychological, physical, social and emotional (Irish Cancer Society, 2014:12; Rice, Mehta, Shapiro, Pope, Harth, Morley-Forster, Sequeira, & Teasell, 2016:36).

In the subsequent subsections, each of the impact areas from cancer diagnosis is discussed, namely, illness perception, psychological distress, physical challenges as well as social and emotional distress.

2.2.4.1 Illness Perceptions

Studies show that the perceptions about illnesses affect the manner in which patients cope with their complaints and these perceptions are important deciders of the outcome of a treatment programme (Jonsbu, Martinsen, Morken, Moum & Dammen, 2012: 7), including cancer cases. Illness perceptions are representations or beliefs that patients have about their illness (Morgan, Villiers-Tuthill, Barker & McGee, and 2014: 50). These beliefs are based on the assumptions that individuals form from their own ways of thinking about illness or threat as well as the experience or symptoms when they start a search for understanding a health threat (Hooper, 2013:4). These factors cause patients to develop unique perceptions of an illness' identity, cause, timeline, consequences, perceived control and emotional reactions to the illness (Hooper, 2013:4). Illness perceptions are cognitive and emotional feelings to an illness or injury that had led to a certain ways of behaving (Jonsbu, *et al.*, 2012:7). An illness perception may refer to the combination of the interpretation of a bodily sensation and general information from previous social communications (Van Wilgen, van Ittersum & Kaptein, 2013:27). Illness perceptions can be significant causes of certain behaviours of

patients and may be associated with a number of vital outcomes, such as treatment adherence and functional recovery (Petrie, Jago & Devcich, 2007: 15; Jonsbu, *et al.*, 2012:7). Another characteristic of illness perceptions is the fact that each of them has an identity component, such as the illness name and the range of symptoms with which the patient associates the condition (Van Wilgen *et al.*, 2013:27). In addition, illness perception contains beliefs on the possible causes of the illness and the duration it may take for the illness to be cured (Jonsbu, *et al.*, 2012:7; Van Wilgen *et al.*, 2013:27). When illness perceptions are being formed, they also include beliefs about the personal negative effects pertaining to the condition of the patient, their family and caregivers and whether the illness is responsive to personal control or to treatment (Van Wilgen *et al.*, 2013:28). The knowledge of illness perceptions is vital as it forms the basis on which this study was conducted.

There is a plethora of literature indicating the extent to which research on illness perceptions in various chronic diseases has progressively been conducted. A number of studies on illness perceptions regarding different aspects of cancer have been conducted through the use of Illness Perception Questionnaire (IPQ), an instrument which has proved to be reliable and applicable to many situations. In their study, Petrie *et al.*, (2007:163) implemented the IPQ with a variety of chronic disease and established a strong link between patients' perceptions of their illness and behavioural outcomes or consequences.

The IPQ is a widely used multifactorial pencil-and-paper questionnaire which assesses the five cognitive illness representations on a five-point Likert scale (Broadbent *et al.*, 2006). Currently a revised version of IPQ, the Illness Perception Questionnaire–Revised (IPQ-R) is in used and the scale has been increased by adding more items, dividing the control dimension into personal and treatment control, and then including a cyclical timeline dimension, an overall comprehension of illness factor, and an emotional representation (Moss-Morris, Weinman, Petrie, Horne, Cameron, Buick, 2002:14). Broadbent *et al.*, (2006:632) observe that the IPQ-R has many items some of which are too long to answer, hence, makes it difficult for ill respondents to complete. The authors also argue that the IPQ-R is not suitable for very ill patients with limited motivation and time to complete it. They, therefore, propose a shorter questionnaire that is suitable for very ill or elderly patients who need an easy-to-complete questionnaire, requiring limited reading and writing ability (Broadbent, *et al.*, 2006; Petrie *et al.*, 2007: 165). This study utilised the customised IPQ in data collection, among cancer patients in the Vhembe District hospitals.

2.2.5 Psychological distress caused by cancer diagnosis

Cancer diagnosis and its treatment usually provoke psychosocial disruptions causing signs of depression and anxiety among the affected individuals (Annette, Julia & Ganz, 2015; Jacobsen & Andrykowski, 2015). Although psychological distress is common among patients diagnosed with cancer, it is often unrecognized and untreated (Rice, *et al.*, 2016:36). The detection of distress and its management in cancer patients are important aspects of clinical care, hence, the need for a clear scope to improve the detection of psychological distress among cancer patients (Ryan *et al.*, 2005: 8). According to Wei *et al.*, (2010:2) distress refers to a multifactorial unpleasant emotional experience of a psychological, social and/or spiritual nature that usually affects the ability of an individual to deal effectively with situations, such as a diagnosis of cancer. Distress leads to deprecation of one's quality of life, increased poor health actions, higher usage of medical services and higher mortality, as well as being harmful to treatment observance and self-care tasks (Wei *et al.*, 2010:2). A diagnosis of cancer causes stress that usually generates a great deal of uncertainty and fear, hence, symptoms of concern, depression, and other types of psychological distress are obvious occurrences (Wei *et al.*, 2010:5). Psychological distress is prevalent amongst patients diagnosed with cancer, however, wide variations in prevalence of psychological distress that result depend on different types of cancer one suffers from, situations in which one finds him/herself, stage of illness and patients' choices (ACS, 2016: 56). According to Hoffman, Lent and Raque-Bogdan (2013:242) most of the individual who survive cancer are most likely to talk about psychological predicaments, poorer health, and hopelessness, such as being unable to perform activities once performed before being ill.

The American Psychological Association (APA, 2014) suggests that properly administered psychotherapy can reduce anguish, apprehension and unhappiness among patients diagnosed with cancer, while simultaneously improving the patients' quality of life, increasing treatment adherence, thereby, improving the long-term health outcomes and reducing associated costs. To achieve these results, however, the perceptions, beliefs and attitudes of patients towards their cancer diagnosis should always be positive. When cancer patients live beyond their expectations, they always perceive and believe that there is an association between their psychological posture and their long-term existence (Ghandourh, 2016:5). Schneider, Kisby and Flint (2010) view anxiety as a symptom that characterises diagnosis and depression as more common after the medical treatment. This implies that cancer patients should be given

special attention, before and after treatment. Plaxe and Mundt (2014:4) argue that effects of cancer stress can be short-lived through temporal factors, such as time since diagnosis and treatment.

Psychological distress can be treated using the ‘stepped care principle’ which are: 1) observant waiting; 2) a guided self-assisted course; 3) face-to-face problem-solving and treatment; and 4) psychotherapy, medication or a recommendation to other facilities, such as social work (Schuurhuizen, Braamse, Beekman, Bomhof-Roordink, Bosmans, Cuijpers, Hoogendoorn, Konings, van der Linden, Neefjes, Verheul & Dekke, 2015: 308). Schneider *et al.*, (2010:54) contend that a patient with comparatively a high level of distress, related to treatment is likely to be at a high risk of non-compliance, decreased or delayed dosing, and disruption or stoppage of chemotherapy which can reduce the likelihood of remission or cure and put the patient in a greater danger of dying. Normally, screening of patients is undertaken when a step is completed upon which treatment is offered, provided the psychological distress no longer continues or the patients no longer request additional assistance (Schuurhuizen *et al.*, 2015:310). From the literature reviewed, it is clear how difficult it is to predict what impact cancer diagnosis and treatment would have on an individual's ability to work and perform other daily duties. Among the many psychological effects of cancer diagnosis, the list below features in many literatures reviewed.

- Feelings of anger;
- Change of outlook on life;
- Feeling depressed;
- Feeling embarrassed or difficulty in coping, which can affect relationships, work and day-to-day life in many ways;
- Fear of cancer death;
- Feeling out of control;
- Feeling hopeless;
- Financial problems;
- Impacting negatively on family/friends;
- Isolation anxiety;
- Lack of confidence;
- Memory/concentration problems;
- Feelings of sadness, and

- Inability to work or continue education

2.2.5.1 Physical impact of cancer diagnosis

The physical impact of cancer may lead to the affected patients being unable to participate in activities that had been a normal part of their life before, such as going to school or college, shopping, working, socialising, being physically active, going on holidays and enjoying sexual intimacy (Costa, Mercieca-Bebber, Rutherford, Gabb & King, 2016:560). Some of the common physical impact of cancer diagnosis and treatment frequently mentioned in many studies include:

- Pain
- Fatigue
- Nausea and vomiting
- Weight loss, weight gain
- Sleep disturbance
- Changes in bowel function
- Bowel or bladder adhesions, strictures, fistulae
- Changes in bladder function
- Sexual difficulties
- Hot flushes
- Eating difficulties
- Speaking difficulties
- Breathing difficulties

Physical impact of cancer diagnosis and treatments usually affect the quality of life and emotions in different ways.

2.2.5.2 Social and emotional impact of cancer diagnosis

Cancer diagnosis is often met with a variety of emotions, such as shock, followed by panic, unhappiness, a feeling of isolation, or irritation and hatred (Creighton, Beach & Bamford, and 2015:2). Gorman (2016:6) notes that when cancer enters an individual's life, it also enters the lives of family members and close friends. This implies that cancer brings about changes in the social, emotional, physical, and spiritual well-being of patients and their family members, therefore has the capacity to present a major crisis for family members and the patient (Glajchen, 2004 in Gorman, 2016:7).

Research also indicates that waiting for treatment after diagnosis can contribute to many reactions, including feelings of loss of control, disrupted family organisation, as well as altering social relationships (Gorman, 2016:9). Family members also tend to be gripped by hollowness, helplessness and very mindful of being powerless to protect their loved ones; this leads to a strong sense of hopelessness and confusion (Creighton, Beach & Bamford, and 2015:5). On the emotional side, the patient and the family may experience denial or blame others for the diagnosis. There are also high chances that family members may experience vulnerability with the realisation that they, themselves may also be diagnosed with cancer. The mere seeing of a loved one, vulnerable and fearful tends to create a lot of distress, especially if there is a significant change from the patient's normal personality. Family members are likely to experience several changes in their social roles at the time of the patient's cancer diagnosis.

Spouses would assume the roles that were done by the patients, for example, if they were breadwinners. This leads to severe disruptions in schedules when family members take new social roles of caregiving, meal preparation, and other family duties; this may put a strain on some family members (Gorman, 2016:9).

2.3. Coping strategies from cancer diagnosis

By definition, a coping strategy refers to a continuously shifting of mental and behavioural efforts to manage certain external and/or internal demands that are judged as demanding or exceeding the resources of the person (Silva, Crespo & Canavarro, 2012:192). Coping strategies, therefore, can be described as specific skills that a person can use against stressful life events (Kashani, Vaziri, Akbari, Jamshidifar & Sanaei, 2014: 1323). Literature discusses coping strategies from three aspects, namely, problem-oriented, positive emotion-oriented and negative emotion-oriented coping strategies (Kashani, Vaziri, Akbari, Jamshidifar & Sanaei, 2014: 1323). The problem-oriented coping strategy stipulates the sequence of activities required by a patient to carry out constructive and useful events in stressful conditions; these usually include, active confrontation strategies, planning, refrain from engaging in competitive activities, avoiding doing things hastily and seeking instrumental support from others (Oz, Dil, Inci & Kamisli, 2012:27; Mertz, Bistrup, Johansen, Dalton, Deltour & Kehlet, 2012:439). The positive emotion-oriented coping strategy refers to efforts to control and govern emotional responses to stressful events; it includes strategies that are in search for social support, based on emotion, positive reinterpretation, acceptance and humour

(Mertz, *et al.*, 2012: 439; Oz *et al.*, 2012:27). On the other hand, negative emotion-oriented coping strategies (non-effective) involves patient not being effectively involved with the issue, denial, lack of behavioural involvement towards the problem, concentrating on emotion and abusing drugs and alcohol (Kashani, *et al.*, 2014: 1323). Mertz, *et al.*, (2012: 439-443) indicate that cognitive and emotional processing of an adverse situation may rely on humour which may be effective in reducing distress. In this case, humour acts as a means by which painful emotional responses could be softened and enables the affected individuals to alter or reframe their perceptions of the situation which would otherwise be overwhelming (Mertz, *et al.*, 2012: 439; Oz *et al.*, 2012: 27). Coping strategies of cancer patients have been linked to the factors discussed in the subsections below.

2.3.1 Information needs of cancer patients

Cancer diagnosis and its treatment are shocking experiences; therefore, patients need information on aspects like, diagnosis, prognosis, and treatment options to support them and their families in making informed decisions (Fanganda *et al.*, 2015:12; Shea–Budgell, Kostaras, Myhill & Hagen, 2014:168). Shea–Budgell *et al.*, (2014:168) indicate that patients diagnosed with cancer either seeks information about cancer or not. Research has ascertained the characteristics of newly-cancer-diagnosed patients who do or do not seek information about their care, the topics about which they seek information, and the means they prefer for receiving that information (Shea–Budgell, Kostaras, Myhill & Hagen, 2014:169). Some cancer patients are eager to know about their fate, although they may be psychologically distressed. Health information is extremely important before and after diagnosis and during treatment so that patients learn about many areas of their illness. Under such circumstances, it becomes essential to have knowledge on those things that cancer patients should know and from whom they should get the information, throughout the duration of their care; this is vital in providing good care for them. Besides facilitating treatment, the information that patients receive about the various aspects of cancer has proved of much benefit to them and their families, as they try to adjust and cope with the situation. Cancer patients with relevant information about cancer diagnosis and treatment understand the disease and use the information to make major decisions and selecting coping strategies, therefore, this development has changed health-care professionals’ approach to a patient with cancer, over the past decade (Zilinski 2010:14; Shea–Budgell, 2014:173).

There is a growing understanding about the need for cancer patients to partake in the process of decision-making, concerning their care, as this improves patients' satisfaction and quality of life (Shea–Budgell *et al.*, 2014: 171). This raises their hope to be cured and to survive for more years. Greater cancer patients' participation in illness management decisions is now accepted as a common phenomenon in many care centres. Patient can only participate positively in decision-management when they have access to accurate information they can base their decisions on.

Benefits that cancer patients can possibly derive from having relevant information about the diagnosis and treatment of cancer is well documented (Zilinski 2010:14). Literature shows that of the many sources of information available, the most significant ones are from the hospitals where the cancer patient had been diagnosed and treated (Kowalski, Lee, Ansmann, Wesselmann & Pfaff, 2014: 37). One problems faced in providing information to many cancer patients is that, not all patients need the same type of information or have the ability to use the information to their advantage. In many cases the patients' information needs and ability to use the information is often affected by the psychological state in which they are (Zilinski 2010:14). Levit, Balogh & Nass (2013:46) explain that the eagerness to get cancer-related information by patients depends on factors such as demographics, the situations they will be in during illness and their psychological states. The need for cancer-related information can be influenced by several aspects concerning the cancer patients, such as, 1) time since diagnosis; 2) type of treatment which patients are undergoing; 3) severity of disease, based on the stage of cancer; and 4) the role patients prefer to play in making decisions related to their treatment (Ankem, 2006:8). Cancer patients' information needs can further be affected by patients' psychological states, level of anxiety, presence of depression, and feelings of control over the whole issue (Ankem, 2006:8).

Current studies show that cancer patients' various information needs change, in relation to their illness and also these needs change with age and education (Shea–Budgell *et al.*, 2014: 174). Newspapers, television, friends and other non-medical resources have been found to be primary sources of information for older patients as compared to younger ones. While providing information has been shown to negatively affect coping in some studies, positive effects have also been identified in the form of faster recovery times, decreased pain and improved mental health and coping (Hooper, 2013:5).

Levit *et al.*, (2013) found that cancer patients require to be informed about all aspects pertaining to the diagnosis of their disease and the various treatment modalities. Research on palliatives of cancer indicate that providing the information that satisfies patients with progressive, life restraining conditions and their families, in a timely and suitable manner, is a key concern of palliative of care (Selman, Higginson, Agupio, Dinat, Downing, Gwyther, Mashao, Mmoledi, Moll, Sebuyira, Panajatovic & Harding 2009: 141). Lack of information on the causes, symptoms, treatment and progression of disease, adversely affects patients' and caregivers' abilities to cope with and manage serious illness, therefore, good communication tends to improve the outcomes of a treatment programme (Selman *et al.*, 2009: 141). In view of the foregone discussions, it could be stressed that information is an urgent need that cancer patients, family members, caregivers and medical personal have, in order to empower patients to face their cancer condition.

2.3.2 Information regarding a cancer diagnosis

Information pertaining to cancer patients, cancer diagnosis and treatment has been a subject of interest in the literature dealing with the provision of good health care. Current studies show that cancer patients expect to be informed about the progress of their health status, despite the fact that they were facing a bad prognosis (Adler, 2008: 28; Ham, Dixon & Brooke, 2012: 17). The amount and type of information to be given to cancer patients is a subject of debate among health professionals, as some argue that too much information is as harmful to the patients as too little information. Another crucial aspect is when to give information to the patients or the relatives of the patients. A study by Maree, Parker, Kaplan & Oosthuizen (2015:46) in Gauteng Province established that there was no consensus on which information was needed at specific points in time, as parents of cancer patients had different opinions on how information should be made available to them. This shows that although information is vital, there are no rules governing the communication of that information to the relevant persons. Clinicians tend to underestimate the amount of information that patients require and words to describe the cancer disease (Adler, 2008:33). Another area of concern relates to whom should the cancer diagnosis results to be disclosed, whether the patients only or to relatives who seek the information.

Cancer diagnosis information can be described as 'bad news' because it changes the patients' view of the future in a negative way (Narayanan, Bista, & Koshy, 2010:63; Campbell, 2015:11). Rights and obligations concerning breaking of bad news to a cancer patient,

repeatedly, put health professionals in an awkward position (Tsoussis, Papadogiorgaki, Markodimitraki, Delibaltadakis, Strevinas, Psyllakis, Tabakaki, Drossitis, Kabourakis, Papadimitraki, Kryptos, Daskalakis, Fragiadaki, Zoumadaki & Apostolakis, 2013:5). Several studies have been conducted to ascertain the information needs of cancer patients, with regard to cancer treatment, side-effects, in what context and by whom the information is given, as well as emotional support and participation in decisions (Maree *et al.*, 2015:45). It still, however, remains a debatable issue on the amount of information to tell cancer patients about their illness and how to best provide that information (Tsoussis *et al.*, 2013:5). There are many guidelines on clinical practice, research and consensus meetings intended to improve information and communication between health professionals and cancer patients and their families (Maree *et al.*, 2015:45).

There are several demographic factors that affect the type and amount of information that should be communicated to cancer patients. Factors, such as gender, age, social and economic factors have been found to be influential in the communication processes between health professionals and cancer patients or their families; these are determinants of the kind of information the patient needs (Maree *et al.*, 2015:47; Tsoussis *et al.*, 2013:7).

Well-educated patients from affluent areas, women, and unmarried persons have been reported to want more information, while patients with limited secondary education are more likely to underestimate the seriousness of the illness and request less information. Information needs among cancer patients also vary with education, age and gender (Narayanan, Bista & Koshy, 2010:64). Research indicates that highly-educated cancer patients require more information than less educated one, with females demanding more details than their male counterparts. (Mistry, Wilson, Priestman, Damery & Haque, 2010:198). This trend is also observed for women aged below 70 and those above 70; elderly women are reported as requiring more details than those below 70, who prefer to leave details to the medical staff (Mistry, *et al.*, 2010:198). In some studies, males have been reported to want less information and dissatisfied patients to have more information-avoiding behaviour than those who are satisfied Kieft, de Brouwer, Francke & Delnoij, 2014:291).

2.3.3 Family support

Patients who are at risk from the negative effects of cancer are those that lack support from their societies and good family relationships which are needed to reduce, for example, the

negative effects of stress due to diagnosis of breast cancer (Van Oers & Schlebusch, 2013:525). The role of the family in providing support to cancer patients remains vital as families want to be very positive and caring (Canadian Association of Psychosocial Oncology, 2012:16). This tends to place additional strain on the family, as this role allows no room for the sadness that is a very real part of everyone's experience of cancer (Canadian Association of Psychosocial Oncology, 2012:16). Family members typically experience fear of loneliness, a sense of helplessness, lifestyle disruption and uncertainty after cancer diagnosis. In this regard, although trying to give maximum support, family members struggle with the possibility of death of the patient and this forces them to try to avoid thoughts of death (Canadian Association of Psychosocial Oncology, 2012:16).

Under normal circumstances, family's decision on support for a cancer patient is usually out of a desire to fulfil a promise to the patient that he or she would be cared for at home; this is out of a desire to maintain a normal family life, rather than outside experts providing that support. Family support for cancer patients is an informal caregiving, commonly practised in situations where the patients have relatives who are ready to look after the patients at home or when they are also in hospital. Family support extends to beyond relatives to those who are willing to take care of the patients. In most cases the care given is non-professional because the care is provided by persons without medical training (Mosher, Jaynes, Hanna & Ostroff, 2013:431). Family caregivers are responsible for communication including sharing the patient's medical history with health providers, relaying diagnosis and prognosis to other family members, and making decisions about care with the patient (Wittenberg, Borneman, Koczywas, Del Ferraro & Ferrell, 2017:1). Family support can only be effective, if caregivers are effective in sharing news of the diagnosis, a complex role that involves making decisions about what information should be shared, when to share it, whether they or the patient should give the news, and how the news should be shared (Ewing, Ngwenya, Benson, Gilligan, Bailey, Seymour & Farquhar, 2016 378). In this context, family members have the duty and the wish to care for the sick patient although the process is difficult and stressful (Wittenberg, *et al.*, 2017:7). Family caregivers are also expected to provide psychological support to terminally-ill cancer patients and they also need psychological support themselves (Sjölander, 2012:17).

Along these expectations of the family in supporting the patients are many negatives that may occur during the support-giving process. The family support for cancer patient is also greatly

affected by the ambient culture and the social milieu (Sjölander, 2012:20). Communication problems can occur between patient, family, and healthcare providers, when the family caregiver struggles to meet the collective interests of others by keeping them informed yet maintain individual interests and privacy by withholding information about the patient or themselves (Stone, Mikucki-Enyart, Middleton, Caughlin, Brown, 2012: 957). Due to this, families are subjected to complex communication roles related to caregiving responsibilities which the family caregivers may take for granted (Shaunfield, 2015:20). Disagreements between patient and caregiver are likely to take place on treatment side-effects and benefits as well as what to report to the physicians (Ewing, *et al.*, 2016: 378-385; Wittenberg, Borneman, Koczywas, Del Ferraro & Ferrell, 2017:1-8). When families fail to perform the duties of caregiving for various reasons, family members become barriers to treatment and survivor care (Wittenberg, *et al.*, 2017:1).

2.4. Illness perceptions, psychological distress and coping strategies of cancer patients

There are many coping strategies that can be utilised by patients diagnosed with cancer, although illness perceptions and psychological distress tend to affect how they can cope with the cancer management process. Each of the following subsections discusses how coping strategies could be affected by illness perceptions and psychological distress

2.4.1 Illness Perceptions and coping strategies of cancer patients

Literature shows that patients can cope with their illness in several ways by being more or less adaptive in specific situations (Hopman, Rijken, 2015: 11). The manner in which patients perceive their illness affects the way they cope with it (Heins, Korevaar Rijken Schellevis, 2013: 211). With many chronic diseases' situation, illness perceptions have proven to be predictive of coping and adjustment strategies, something which is not common with cancer disease (Hopman, Rijken, 2015:11). This subsection discusses how illness perceptions of cancer patients are related to their coping strategies.

Studies on the relationship between cancer patients' illness perceptions and coping strategies have mainly been among patients with a specific type of cancer (Heins, Korevaar Rijken Schellevis, 2013:211). For example, studies on breast cancer patients treated with chemotherapy report that patients were more likely to suppress competing activities, mentally disengage, and show restraint with negative emotion-oriented coping strategies, in contrast to those patients treated with radiotherapy who showed more acceptance towards positive

emotion-oriented coping strategies (Hopman, Rijken, 2015: 11; Kashani, *et al.*, 2014: 1323). Patients diagnosed with cancer always show signs of suffering from pre-treatment illness perceptions due to the anticipated and experienced negative effects of their illness as well as post-treatment mal-adaption (Llewellyn, McGurk & Weinman, 2007: 123). The patients are reported to have been in denial of their health condition, therefore engaged in substance abuse and also exhibited behavioural disengagement (Llewellyn, *et al.*, 2007 in Heins, *et al.*, 2013:211).

A study by Hopman and Rijken (2015:15) on the relationship between illness perceptions and coping strategies found out that patients' views on the chronicity of cancer varied but many of them believed that their illness would be long-lasting. The same study found that recently-treated patients experience more negative consequences ($p < 0.001$), perceive their illness as more chronic ($p < 0.01$) and exhibited a variety of denial coping strategies. Patients who perceived their illness as long-lasting adopted passive coping, felt more emotionally burdened, and had more negative consequences (Hopman & Rijken, 2015:15). These studies are credible in their own capacity, however, they cannot be generalised to all types of cancer and also to populations which have different cultures which influence their beliefs about cancer.

It is against this background that this study undertook to determine the relationships between illness perceptions and coping strategies of cancer patients, in the Vhembe District.

2.4.2 Relationship between psychological distress and coping strategies among cancer patients

Psychological distress is the discomfort of a patient when experiencing symptoms of disorders or anxiety before and after treatment (Ong, Ibrahim & Wahab, 2016: 211). Psychological distress refers to the context of strain and stress (Goldzweig, Merims, Ganon, Peretz & Baider, 2012:376). This implies that psychological distress consists of a series of undesirable emotions such as anxiety and depression, which are the end states of a maladaptive process and these affect coping strategies among cancer patients (Yahaya, Subramanian, Bustam & Taib, 2016:723). Literature on coping strategies among patients diagnosed with different types of cancer reports that psychological distress has an effect on the coping strategies a patient or family would have to use to reduce the negative effects of the situation. Ong *et al.*, (2016: 211) report that psychological distress varies over a continuum depending on the level of emotional stress and the stage of cancer treatment. Their

study reported that patients who had just been diagnosed with cancer had more emotional stress than those who were already under treatment; the newly-diagnosed tended to lack proper coping strategies, hence, relied on negative-emotion coping strategies in which they would use several means to come to terms with the new situation (Ong, *et al.*, 2016: 211). The effect of psychological distress on coping strategies was also affected by type of cancer one was diagnosed of, the resources one was likely to use during treatment and the age of the patient (Yahaya, *et al.*, 2016:723). The patients' predisposition towards cancer also played a major part in the level of emotional distress, hence, the coping strategies. Patients who had knowledge about cancer or positive beliefs about the disease had expectations of leading a longer life after treatment, suffered less emotional distress and used positive-emotion coping strategies (Yahaya, *et al.*, 2016:723). For example, patients diagnosed of skin cancer suffered less distress and used positive-emotion strategies as they expected to heal in the long run, unlike those diagnosed of colony, prostate, oesophageal and lung cancer who were less likely to use positive-emotion coping strategy, unless encouraged by other means (Ong, *et al.*, 2016: 211).

The discussions show that psychological distress has varying effects on the coping strategies of patients and it is also affected by several factors, such as gender, type of cancer, age, knowledge about cancer, support from family and service providers. This study takes cognisance of these factors as it seeks to uncover the situation in the Vhembe District.

2.5. Theoretical/conceptual framework

This study utilises the Common Sense Model of Self-regulation (CSMoS) by Leventhal, Meyer & Nerenz (1980). The CSMoS is a complex, multi-level framework depicting the process of self-regulation of health and illness (McAndrew, Musumeci-Szabo, Mora, Vileikyte, Burns, Halm, Leventhal & Leventhal, 2008). Figure 2.1 shows the self-regulatory model.

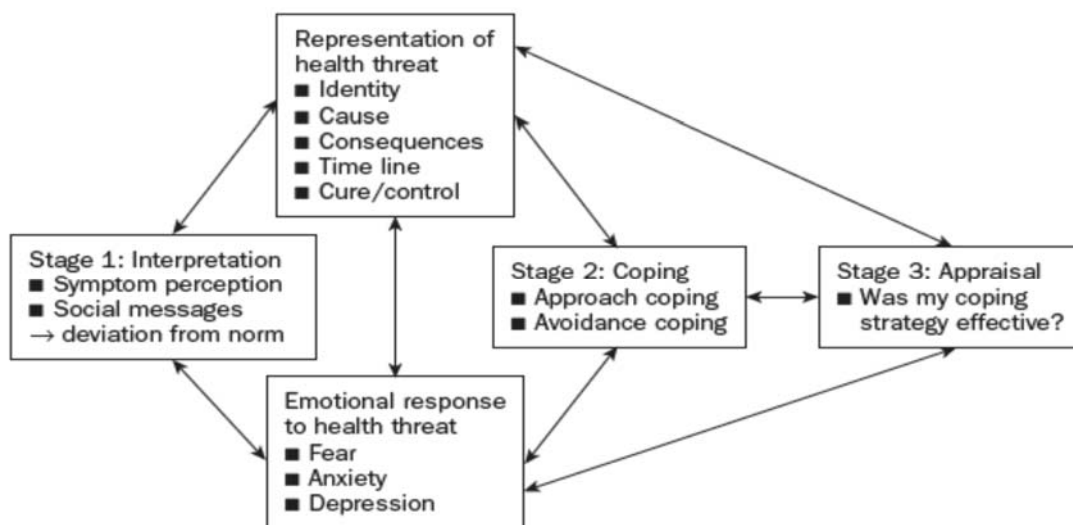


Figure 2.1: The self-regulatory model.

Source: Ogden (2000), based on Leventhal *et al.*, (1980)

The Common-Sense Model of Self-Regulation theoretical framework is used to elucidate a series of processes through which cancer patients come to know about cancer dilemma, explore their emotional reactions to the threat, understand perceptions of the threat and potential treatment actions; this makes it possible for them to create action plans for addressing the threat, and also integrate continuous feedback on action plan efficacy and threat-progression.

Furthermore, the model would be used to show how illness perceptions influence coping strategies which mediate the relationship between illness perceptions and health outcomes. Illness perceptions and coping strategies impact on health outcomes over and above the progression of the cancer disease. Illness perceptions of cancer-diagnosed patients are influenced by various factors including identity, cause, consequences, timeline, as well as, personal and treatment control.

The CMSoS indicates that, cognitive death trap and labelling especially in rural areas (a representations or illness perceptions) are usually formulated around the following dimensions: 1) identity (refers to the illness label and the major symptoms associated with it); 2) cause (causal beliefs); 3) timeline (acute–chronic or cyclical); 4) control (the extent to which the illness is perceived as amendable by personal or treatment control); 5)

consequences (of the condition for the patient's life); 6) coherence (patients' understanding of the illness); and 7) emotional representations (extent to which the patient experiences symptoms of anxiety or depression) (Broadbent, Petrie, Main & Weinman, 2006:34; Hopman & Rijken, 2015:12). Similar perceptions are also profound in rural areas of Vhembe, for since the majority of the population are still hold on to their cultural and religious beliefs, they have their own ways of explaining, predicting, reacting to the process and managing of such chronic diseases, inclusive of oncology.

Ogden (2000) argues that the CSMoS is problem-solving based as it proposes that patients are likely to treat their illnesses and symptoms in the same manner as they treat other related problems. This implies that when a person is faced with a problem, he/she tends to act in order to solve the existing problem, thereby, returning to the original status of normality. With regards to health and illness, healthiness is the normal status of a person and illness is a problem to be solved, therefore, on the onset of an illness, an individual should be motivated to re-establish his/her original state of health.

Ogden (2000:416) posits that traditional models describe problem-solving in three stages:

- interpretation – making sense of the problem;
- coping – dealing with the problem in order to regain a state of equilibrium; and
- appraisal – assessing how successful the coping stage has been.

The proponents of this notion emphasise that the three stages occur repeatedly until the coping strategies are deemed as being successful and a state of equilibrium re-established. The nature in which the three processes occur can be said to be self-regulatory in that they occur in an on-going and dynamic fashion, thereby, restoring the status quo.

Once a person is diagnosed with cancer, one becomes anxious, psychologically distressed and denies that he/she has the disease, therefore, varying coping strategies have to be devised by the individual in order to deal with the situation at hand (Hooper, 2013:1). How an individual cancer patient copes with the situation tends to influence his/her psychological state, perceived quality of life, likelihood of seeking medical care and compliance with medical advice (Hooper, 2013:1; Mohieldin *et al.*, 2016: 50).

Rees *et al.*, (2004:752) posits that for cancer patients, illness perceptions are important in predicting psychosocial responses to treatment, independence of objective assessment of the illness' severity. Accordingly, it has also been established that a patient's causal beliefs about cancer is associated with the patient's adjustment to an illness (Rees *et al.*, 2004:752; Stockford *et al.*, 2007:15). These processes are also prevalent among cancer patients in Vhembe as they also deal with situations differently, by either, visiting the traditional practitioners, the spiritual world and other religious practices that define their illness perception and the quality of life desired.

2.6. Summary

This chapter examined literature on cancer diagnosis from different sources. Literature was reviewed following the research questions and objectives of the study, namely, the impact of cancer diagnosis on cancer patients, and how a cancer diagnosis, illness perceptions and psychological distress affect the coping strategies used by patients diagnosed with cancer.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

A research methodology is the total strategy from identification of the problem to the final plans for data gathering and analysis (Cresswell, 2014:55). This study follows a quantitative research methodology.

The purpose of this study was to investigate the impact of cancer diagnosis among cancer patients in Vhembe District of Limpopo Province, South Africa. Mouton (2009:63) explains that a survey can be used to collect data about opinions, attitudes, beliefs, and perceptions on a topical issue of from a sample of the target population to answer research questions.

A research is always initiated when there is a need to find a solution to an existing problem in the society. In order to solve the problem, the researcher has to select a research design and methodology suitable to the research questions to be answered or objective to be achieved. The process to follow and the methodology of the research is chosen to support the outcome and the significance of the results. This chapter discusses the design, methodology and the overall research process. The chapter is organised in the following sections: introduction, research approaches, research paradigm. The following subsection describes and justifies the research design and methodology which was used in this study.

3.2 Research design

The study adopted a survey strategy of quantitative design, utilising a questionnaire data collection / generation technique.

The study used a descriptive cross- sectional survey. A quantitative approach was used as it provides a high level of measurement as well as a high degree of reliability. It also minimizes researchers' bias as compared to a qualitative approach where there is interaction with the participants in the process of collecting non-numerical data. By describing the response of participants in proportions, frequencies or percentages, will help to bring out the impact of cancer diagnosis among patients in Vhembe District.

3.3. Study setting

This study was conducted in Vhembe District, one of the six regions of the Limpopo Province. The map underneath displays the locations of the district hospitals in Vhembe district. The district has eight hospitals, namely, Donald Fraser, Elim, Louis Trichardt Memorial, Malamulele, Mesina, Siloam, Tshilidzini and one mental health hospital. Cancer patients consult at these hospitals and are referred to Polokwane Provincial Hospital for further cancer treatment - chemotherapy, radiation or surgery; they then return to be managed at the districts. Each of the district hospitals has oncology nurses and patients are admitted in general wards as there are no specific oncology wards. The district hospitals have no oncologist, only general practitioners.

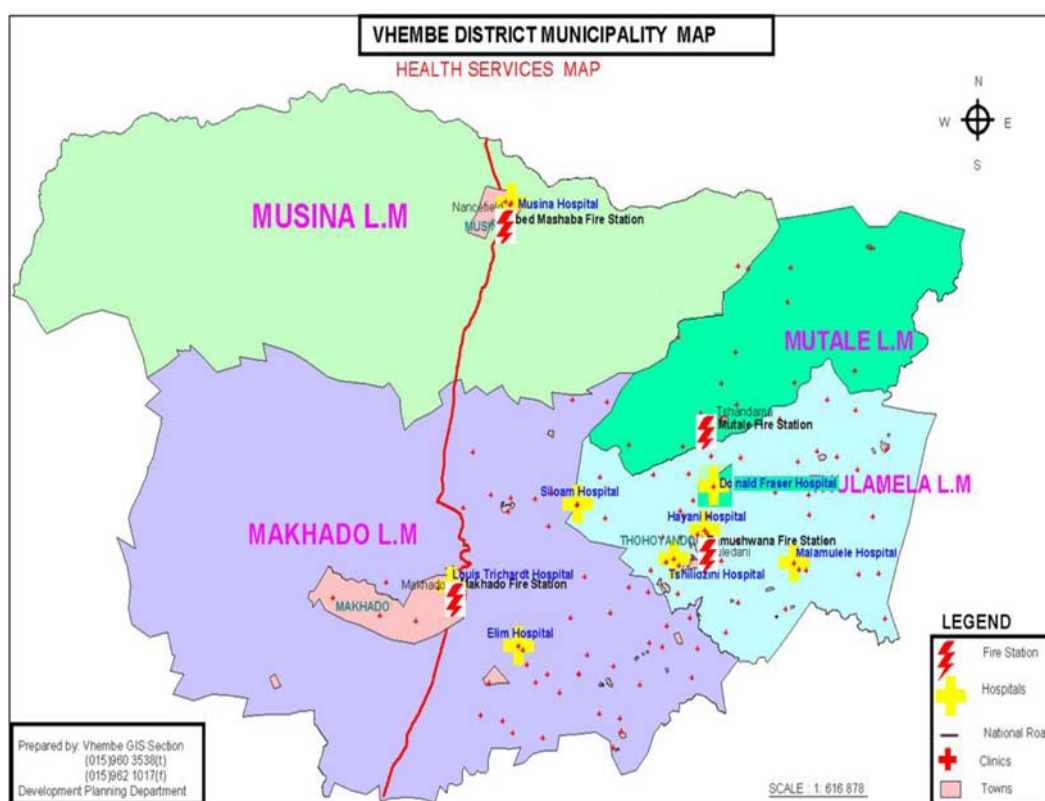


Figure 3.1: Map for Vhembe District Municipalities

3.2. Study population

According to Creswell (2014:68) a study usually utilises a population, a group of individuals, events that have the same characteristics and from which a sample will be selected. For this study, the population was made of all cancer patients, either awaiting commencement of treatment or are already on treatment.

3.3.Sampling

The researcher selected a sample of the hospitals and then the respondents. The sampling process was needed for the researcher to systematically choose a sample of subjects to use in this study. Wanjohi. (2012:159) conceptualises sampling as the process or technique of choosing a sub-group from a population to participate in a given research. Sampling can be viewed as the process of selecting a number of individuals for a study in such a way that the selected individuals represent the large group from which they were selected (Creswell, 2014:66; Locklear, 2012). The main purpose, therefore, of sampling in this study was to enable the researcher to select individuals from the population, from whom the results could be used to arrive at meaningful findings that could possibly be applied to the whole population of cancer patients in the province. Wimmer and Dominick (2011:56) are of the view that the type of sampling method used usually affects the generalizability of the research results to the entire population; an improper sampling method, therefore, can threaten the external validity of the results with regards to presentation. Wimmer and Dominick (2011:58) similarly, mention that a sample that is not representative of population, regardless of its size, is inadequate for testing purposes. In general, sampling makes it possible to estimate characteristics of a large group by examining the characteristics of the smaller groups.

3.3.1. Sampling of hospitals

In Limpopo there is only one major hospital where cancer is diagnosed and treated, namely, the Polokwane Provincial Hospital (PPH). Other hospitals from various districts refer patients to PPH for diagnosis and even treatment. This implied that, there was no selecting of hospitals since all of them were for the researcher targeted patients from all hospitals in the Vhembe District. Vhembe district has many hospitals that refer patients to PPH and therefore all hospitals were purposively selected as they all have an oncology unit. Seven hospitals were included for this study.

3.3.2. Sampling of respondents

A simple random selection method was used to gather respondents for the study. The advantage of random selection or random sampling is that everyone in the population had an equal probability of being selected, ensuring that the sample would be representative of the population (Creswell, 2014:68). This implies that random samples can produce more statistically valid results in that they can be generalised to describe or predict the

characteristics of the whole population. To obtain the exact number of respondents per hospital, the sampling frame with seven hospitals in the Vhembe District was used as shown in Table 3.2. The number of patients from each hospital, used in the computations for sample frame are in the second column. Random sampling was used to select respondents after determining the sample size for each hospital.

Table 3.2: The sample frame

Name of hospital	No of cancer patients in each hospital	No of respondents	Percentage
A	51	26	11.4
B	80	41	18.2
C	72	37	16.4
D	48	26	10.9
E	55	28	12.5
F	49	25	11.2
G	85	44	19.4
Total	440	227	100

Adopted from Oncology Register Vhembe District 2017

The sample size was calculated using the formula below where:

n = sample size of the adjusted population.

N= population size

e = accepted level of error set at 0.05.

$$n = \frac{N}{1+N(e)^2}$$

$$n = \frac{440}{1 + 440 \times (0.05)^2}$$

$$n = 440 / (1 + 440 \times (0.05)^2)$$

$$= 440 / (1+ 1.13)$$

$$440/2.13$$

$$\text{Sample size (n)} = 207$$

Each sample size was increased by 10 % in order to leave room for non-response (n = 207 + 20 = 227).

To compute the number of respondents to be drawn from each hospital the researcher used the formula given below.

Number of respondent = (number of patients per hospital * 227)/440

For example for hospital E number of respondents = 51 *227/440 = 26

3.4. Inclusion criteria

The sample criteria list the characteristics or attributes that were essential for inclusion in the target population (Demaerschalk, Kleindorfer, Adeoye, Demchuk, Fugate, Grotta, Khalessi, Levy, Palesch, Prabhakaran., Saposnik, Saver & Smith, 2016: 581). The inclusion criteria used to select respondents in this study were:

- Both male and female patients,
- aged from 25 years and above
- diagnosed with any type of cancer in the last 6 months, and
- patients awaiting treatment and those already undergoing treatment.

3.5. Data collection

During the process of data collection, the researcher generates data, by applying tools designed for that purpose to the sample or cases selected for the study (Merriam, 2009:45; Mouton, 2009:67). Surveys use structured questionnaires as collection techniques because they typically involve collecting data on a large number of variables, from a large and representative sample of respondents (Hox & Boeije, 2006: 593). Data collection in this study used the questionnaire method to elicit the respondents' answers on the impact of cancer diagnosis. The use of questionnaire as a data collection technique is widely reported in many studies related to cancer diagnosis in which the researchers used the technique to collect data on variables dealing with perceptions and beliefs of a sample (van Gog, Paas, Savenye,

Robinson, Niemczyk, Atkinson, Johnson, O'Connor, Rikers, Ayres, Duley, Ward & Hancock, and 2007: 34).

3.6.Data collection instrument

In order to successfully collect data, the researcher used a questionnaire containing close-ended questions. The limited responses involve some form of scale that could be nominal, ordinal, interval, or ratio (van Gog *et al.*, 2007:34). A questionnaire design process involves a set of steps in which the researcher decides the type data needed, based on the objectives. The questionnaire consisted of four sections, namely, section 1: demographic and prevalence of cancer, section 2: impact of cancer diagnosis, section 3: coping strategies section 4: illness perceptions' and psychological distress' effects on the coping strategies of patients diagnosed with cancer The questionnaire was pre-tested to make it suitable for the purpose it was designed for.

3.7. Data collection procedures

Data collection procedures involve how data were collected from the respondents. For this study, the researcher distributed the questionnaire in an unsealed envelope, personally, to the respondents. During data collection, the researcher gave respondents sufficient time to browse through the questionnaire before completing it. Assistance was given to those respondents who needed help with certain items; the questionnaire had been translated in the local languages. Written consent forms were completed prior to the completion of the questionnaire by each respondent. Oncology nurses, one from each hospital, was recruited to assist the researcher in the distribution and collection of completed questionnaire. After completion, each respondent returned the completed questionnaire to the assistants who then handed them to the researcher on the same day. Upon submission, each questionnaire was marked with a code for data capturing purposes only.

3.8.Validity and reliability

In this study, validity and reliability were considered very essential as these features ensured that the research was successful and acceptable among readers. In this study the researcher addressed the concepts of validity and reliability as described in each of the following subsections.

3.8.1. Validity application

Validity refers to the extent to which a concept is accurately measured in a quantitative study, that is, the degree to which an instrument is doing what it is intended to do (Drost, 2011:105; Heale & Twycross, 2013:66). It is in this study the intention was to investigate the impact of cancer diagnosis on oncology patients and as such the instrument was designed to measure the attributes. There are several types of validity upon which an instrument can be evaluated - internal, face, content, construct and external.

- *Face validity* refers to the extent to which the measuring instrument looks as though it is measuring what it purports to measure and is a subjective judgment on the operationalization of a construct (Heale & Twycross, 2013:67). Face validity of the questionnaire was determined by an expert statistician and the supervisor in the Nursing Department at the University of Venda.
- *Construct validity* is defined by (Heale and Twycross 2013:67) as the degree to which a research instrument measures the intended construct. It deals with the underlying attributes that deal with the scores that the instrument produced.
- *Content validity* is the type of validity in which different elements, skills and behaviours are adequately and effectively measured (Cohen, Manion, & Morrisom, 2011: 65; Heale & Twycross, 2013:67). In this study, the questionnaire and the data collected were reviewed by experts in the field of research. The researcher used the reviewer's comments to correct ambiguous, complex and obscure questions. Furthermore ineffective and irrelevant questions were discarded from the questionnaire.
- *Internal validity* refers to the degree to which the researcher observes and measures what he/she is supposed to measure (Cohen, Manion, & Morrisom, 2011: 65; Heale & Twycross, 2013). It is concerned with the congruence of the research findings with the reality (Marshall & Rossmann, 2006: 20). Instead of triangulation, the researcher used personal checks and peer examinations to ensure the results reported upon emanated from the data collected.
- *External validity* is concerned with the applicability of the findings to other settings or with other subjects (Cohen, Manion & Morrisom, 2011: 45). External validity was ensured by clear description of the population and setting so that it can be determined to what extent the results are generalizable.

3.8.2. Reliability application

Heale and Twycross (2013: 66) define reliability to mean, the extent to which a measurement technique can be depended upon to secure consistent results upon repeated application. Reliability is the extent to which measurements are repeatable when different persons perform the measurements, on different occasions, under different conditions, with supposedly alternative instruments which measure the same thing (Thanasegaran, 2009:36; Drost, 2011:105). In this research, steps taken to cater for reliability included, methodically gathering of data, using a properly constructed and pilot-tested questionnaire containing clear questions requiring respondents to express their opinions and views. Sheran and Sarbaum (2012:98) independently postulate that a researcher should pre-test the instrument on a neutral population but with the same characteristics as the study population. This assertion compelled the researcher to check for the reliability and validity of the questionnaire. Pre-testing assisted the researcher to identify weakness of the instrument and points for correction. Individuals used for the pre-test did not form part of the study (Faux, 2010:10).

3.8.3. Data Analysis

The process of data analysis is for generating operational and beneficial information from accumulated results of a study. This study collected quantitative data, making it imperative for the researcher to adopt quantitative data analysis techniques. According to van Gog *et al.*, (2007), quantitative data analysis techniques provide researchers with tools to draw inferences on perceptions, beliefs and knowledge about a subject of discussion, as well as statistically proving a change or variation in knowledge structures of the population. In this study, SPSS version 23.0 was used to process and analyse data quantitatively. Data were coded so that both descriptive and analytic statistics were used to analyse the results obtained. Cross-tabulation of demographic and other variables on perceptions were done to obtain the associations and trends. The results of data analysis are presented in Tables and Graphs where necessary.

3.9. Research ethics

A numbers of ethical issues were addressed, as outlined in the following subsections. Any study utilising human beings as subjects involves ethical issues (Fouka & Mantzorou, 2011). According to Babbie (2007:33) research ethics should be taken as moral values required to guide the researcher to carry out a research using the most appropriate research methodology, being responsible and morally considerate of others. This research study considered a number

of ethical issues, such as clearance to conduct the study with cancer patients, an agreement from individual respondents, anonymity and privacy for respondents, protection of respondents and other researchers from harm, and avoiding the use of deception as suggested by Fouka and Mantzorou, (2011:166).

3.9.1. Ethical clearance

As a requirement of the University Higher Degrees Committee on research, the researcher presented the proposal to the School of Health Sciences and the Higher Degree Committee of the University of Venda for approval. The researcher sought permission to conduct the research in the District from the District and Provincial Departments of Health. Furthermore, permission were requested from the participating cancer patients in the form of a written consent

3.9.2. Informed Consent

Participants in a study have the right to make an informed decision regarding their participation in any study. Informed consent refers to the respondents' right to adequate and relevant information before their participation in the study (De Vos *et al.*, 2011). The researcher explained to respondents the purpose of the study and the procedures that would be involved, potential risks / benefit, how confidentiality would be maintained and the right to withdraw from participation. The researcher ensured that the explanation was at the level of the respondents' comprehension or understanding. Informed consent was obtained when respondents signed the forms agreeing to complete the questionnaires.

3.9.3. The right to self –determination

The right to self-determination for each respondent is based on the ethical principle that requires a researcher to respect the respondents. In this study the researcher treated all respondents with due respect and as well as independent beings, free to conduct their lives as they wish. The researcher elaborated to each respondent the objectives of the study and also explained that they were free to withdraw from the research whenever they wished, without explaining the cause to the researcher. It was the duty of the researcher to ensure that the rights of respondents are protected throughout the study. To ensure respondents had autonomous right to self-determination, researcher ascertained that respondents fully understood that they had the right to decide whether or not to participate in the research, voluntarily. Respondents were given the opportunity to ask the researcher questions about the

study, and also that they were not compelled to answer any of the researcher's questions. The researcher also assured the respondents that they could stop taking part in the study, at any time, without being afraid of penalties.

3.9.4. Right of privacy

Privacy is the right an individual has to determine the time, extent and general circumstances under which personal information will be shared or withheld from others (De Vos *et al.*, 2011). No private information of respondents about their experiences, such as details regarding diet and economic status of the families from which they were coming from would be shared without the individuals' knowledge. The researcher took upon herself to respect respondents' right to privacy, hence, no private information was shared with others. All information about the subjects remained anonymous and confidential.

3.9.5. Confidentiality

All respondents were assured that all the information they provided was to be treated confidentially and only used in this research. The researcher promised the respondents that the questionnaires were to remain under lock and key to prevent the public from accessing them and will be disposed by shredding and incineration after the release of the results. The respondents, however, had the right to inspect the questionnaire. Completed questionnaires were stored safely in a locked vault after data capturing awaiting shredding and incineration.

3.9.6. Anonymity

Research respondents were instructed not to write their names or any information that would identify them on the questionnaires. No respondent's identity was supposed to be revealed so that they remained anonymous. All respondents were told not to write their details on the questionnaire but simply complete and submit it to the researcher. Upon receiving the questionnaires from each hospital, the researcher wrote a hospital number for easy data capturing.

3.9.7. Right to fair treatment of respondents

The researcher treated all respondents fairly as required by the ethical principle of justice, which holds that the respondents should be treated fairly; the researcher also ensured that the population and the respondents were fairly selected (Babbie, 2007: 67; Myers, 2009: 46). By

using random sampling technique, the researcher strived to give each population member a chance to participate in the research.

3.10. **Summary**

This chapter outlined the research design and methodology of the study, as well as the study setting, population, sample, inclusion criteria of the respondents, validity, reliability, data collection, data analysis and research ethics.

CHAPTER FOUR

RESULTS PRESENTATION, ANALYSIS AND DISCUSSIONS

4.1. Introduction

This chapter presents the process of data analysis and the research findings based on the quantitative data collected from cancer patients. Study findings are presented and discussed in the form of tables, graphs and charts. The results of this study are presented and analysed in sections, as follows - Section 1: Demography and prevalence; Section 2: Impact of cancer diagnosis; Section 3: Coping strategies used by patients and Section 4: Illness perception and psychological distress. For each analysis and interpretation given, a short literature-controlled discussion is given.

4.2. Section I: Prevalence of cancer diagnosis by demographic characteristics of patients in Vhembe District

Demographic characteristics of the sample studied was analysed in this section. Results of cross tabulation of demographic characteristics with gender are presented in frequency table, **Table 4.1.**

A total of 207 patients diagnosed with cancer participated; 129 (62.3%) were females and 78 (37.7%) were males.

Table 4.1: Demographic characteristics

	n = 207					
	Female		Male		Total	
	No.	%	No.	%	No.	%
Hospital						
A	8	3.9	4	1.9	12	5.8
B	10	4.8	4	1.9	14	6.7
C	13	6.3	6	2.9	19	9.2
D	18	8.7	3	1.6	21	10.3
E	19	9.2	10	4.8	29	14.0

n = 207						
	Female		Male		Total	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
F	16	7.7	16	7.7	32	15.4
G	45	21.7	35	16.9	80	38.6
Total	129	62.3	78	37.7	207	100
Age range						
25 to 30	6	2.9	8	3.9	14	6.8
31 to 40	22	10.6	13	6.3	35	16.9
41 to 50	53	25.6	15	7.2	68	32.8
Above 51	47	22.7	40	19.3	87	42.0
Total	129	62.3	78	37.7	207	100
Educational level						
Grade 9	87	42.0	43	20.8	130	62.8
Matric	27	13.0	17	8.2	44	21.2
Diploma	12	5.8	13	6.3	25	12.1
Degree	3	1.5	5	2.4	8	3.9
Total	129	62.3	78	37.7	207	100
Employment type						
Formal	31	15.0	27	13.0	58	28.0
Informal	29	14.0	16	7.8	45	21.8
Unemployed	69	33.3	35	16.9	104	50.2
Total	129	62.3	78	37.7	207	100
Business type						
Business	5	2.4	6	2.9	11	5.3
Spouse	30	14.5	7	3.4	37	17.9
Salary	34	16.4	30	14.5	64	30.9
Grant	60	29.0	35	16.9	95	45.9
Total	129	62.3	78	37.7	207	100

The results show that 80(38.6%) of the cancer patients were from Hospital G of which 21.9% were female and 16.7% male respondents and Hospital A had the smallest number of respondents, 12(5.8%) of which 3.9% were females and 1.9% males. The results show that

the most of the patients diagnosed of cancer currently, in referral hospitals, except Hospital F were females.

Age range: The results show that respondents diagnosed with cancer were distributed across age ranges with a comparably small number of respondents, 17 (8.3%) being below 31 years; 35 (16,9%) respondents were aged 31 to 40 years, 68 (32,8%) respondents were aged 41 to 50 years and 87 (42%) respondents were aged above 51 years. Cancer prevalence was higher among respondents above the age 30 years, accounting for 190 (91.8%) of the respondents. The most common age range for female respondents was 41 to 50 years, at 53 (25.6%) respondents and that of male respondents was above 50 years, at 40 (19.3%). There were 47 (22.7%) female respondents above the age of 50 years compared to 40 (19.3%) male respondents in the same age category. The findings are consistent with the findings of a study by Din, Ukoumunne, Rubin, Hamilton, Carter, Stapley and Neal (2015:305) conducted in UK which found that cancer was more prevalent among mature adults with ages from 40 and above. Although, men and women tend to be affected by different types of cancer, Din *et al.*, (2015)'s study found that more women were diagnosed with cancer than men within the same age.

Educational level and gender:

The results show that 130 (62.8%) respondents had Grade 9, 44 (21.2%) respondents had matriculated, 25 (12.1%) had diplomas and 8 (3.9%) had degrees as highest educational level. Of the respondents holding Grade qualification, 9, 87 (42.0%) were females and 43 (20.8%) were male respondents; those with Matric were 27 (13.0%) for females respondents and 17 (8.2%) for males. It can be inferred that most of the patients diagnosed with cancer were of low educational level being holders of Grade 9 and Matric qualification. A study by Dantas (2016:2314) on the Influence of Educational Level, Stage, and Histological Type on Survival of Oral Cancer in a Brazilian Population, found that educational level and economic status are key factors among cancer patients. Patients with high educational level were reported to have a better understanding of the impact of cancer than those with low level. Liu (2017: 6641) also reported differences in the impact of cancer diagnosis among patients of different educational levels in China, where those with higher education had a better understanding of cancer diagnosis than those with low levels of education.

Employment status and gender: The results show that 58 (28%) respondents were in formal employment, 45 (21,8%), informal employment and 104 (50,2%), were unemployed; of the 104 (50%) unemployed cancer patients, 69 (33.4%) were females and 35 (16.9%) were males.

Source of income: The results revealed that 11 (5, 3%) respondents' source of income was business, 37 (17, 9%) respondents depend on spouses, 64 (30, 9%) respondents' source income was salary and 95 (45, 9%) depended on grant income. The results also show that respondents who depend on business was almost equally distributed among females 5 (2.4%) and males and 6 (2.9%). More females 30 (14.5%) than males 7 (3.4%) cancer patients depended on their spouses. There were also more female 34 (16.4%) than male 30 (14.5%) cancer patients who depended on salaries. More females cancer patients depended on grants at 60 (29%) than 35 (16.9%) males. The results show that in all cases, except for those obtaining salaries, female respondents were more dependent on grants and spouses. The results show that most of the cancer patients were dependent on grants, particularly women and those employed were not professionally employed and were very anxious about losing their jobs. Dantas (2016:2314) and Piotie (2017:2) also reported in their studies that patients who were employed were affected most as they were afraid of losing income.

History of cancer within the family: These results show the history of cancer within the family and the care given to cancer patients after diagnosis.

Table 4.2: Distribution of respondents by family cancer history

n = 207		
	No	%
Member of family with cancer		
None	73	35.3
Children	1	.5
Grandparent	27	13.0
Siblings	41	19.8
Parent	65	31.4
Total	207	100.0
Fate of respondents' relatives after diagnosis n= 134		
Treated and died of natural cause	19	14.2

Not treated and died of cancer	25	18.7
Treated but died of cancer	40	29.9
Total	134	100

Family cancer history: Results show that the majority of the respondents 134 (64.5%) had a family history of cancer from parents, sibling and grandparents while a minority 73 (35.3%), did not have family history of cancer. This finding is consistent with Liu (2017: 66-7) findings on the rise of cancer disease in China which were linked to family history (hereditary). Cancer is highly associated with family history, although it was also prevalent among those without a family history of cancer.

Fate of relatives diagnosed with cancer: The results also show that the majority of the respondents' relatives who had been suffering from cancer eventually died either from cancer or natural causes, regardless of being taken care of or not. The experience of having relatives who died caused respondents to suffer from several types of stress (Wagland, Bracher, Drosdowsky, Richardson, Symons, Mileskin & Schofield, 2017:73).

Duration of diagnosis: The results in this subsection were on when diagnosis was done, time taken to get the results, type of cancer, and how the results were communicated to the patients.

Table 4.3: Distribution of respondents by cancer diagnosis period of time

n = 207		
Time elapsed since diagnosis	No	%
Less than 3 months ago	40	19.3
3 to 5 months	130	62.8
6 to 10 months	20	9.7
11 to 15 months	12	5.8
16 to 20 months	3	1.4
21 months or more	2	1.0
Total	207	100.0

The results reveal that the majority of the cancer patients, 170 (82.2%), had been diagnosed with cancer in the last 5 months. This sample had a mixture of patients who had been grappling with cancer and those who had been recently diagnosed. The American Cancer Society (2016) indicates that patients recently diagnosed of cancer tend to be more anxious than those already on treatment as the former are still in a state of shock and disbelief on the outcome of the diagnosis. In this study, the majority of respondents who had been diagnosed with cancer in the past five months could be stressing about their future.

Time taken to wait for results after testing: Respondents were asked to indicate how long they waited for their results after testing was completed. Figure 4.1 show the results.

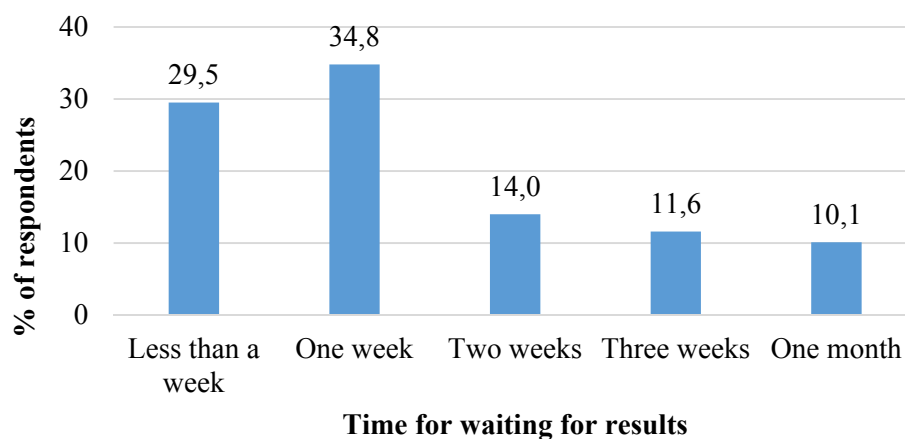


Figure 4.1: Distribution of respondents by time for waiting for results

The results indicate that the time for receiving test results varied from less than a week to a full month. Respondents indicated that they received results in less than a week were 61 (29.5%); in one week were 72 (34.8%), in two weeks after testing were 29 (14.0%), in three weeks were 24 (11.6%) and 21 (10.1) in a month. On the average, the waiting time was 1.4 weeks with a lot of variations. A study by Elit (2015:246) indicates that both patients waiting for cancer test results and those waiting to start treatment were usually negatively affected and developed stress as they become anxious at not knowing the outcome of the effects of the disease.

Various types of cancers that patients were diagnosed of are shown in Table 4.4.

Table 4.4: Various types of cancer in respondents

n = 207						
Type of cancer	Gender				Total	
	Female		Male			
	No	%	No	%	No	%
Breast	57	27.5	4	1.9	61	29.5
Cervical	52	25.1	0	0.0	52	25.1
Colon	8	3.9	16	7.7	24	11.6
Liver	0	0.0	1	0.5	1	0.5
Lung	3	1.4	19	9.2	22	10.6
Oesophagus	7	3.4	2	1.0	9	4.3
Prostrate	0	0.0	33	15.9	33	15.9
Rectum	1	0.5	1	0.5	2	1.0
Skin	1	0.5	2	1.0	3	1.4
Total	129	62.3	78	37.7	207	100

The most common cancer type among female respondents was breast cancer at 57 (27.5%) and cervical cancer at 25 (25.1%), while among male respondents, the common types of cancer were prostate 33 (15.9%), lung cancer 19 (9.2%) and colon 16 (7.7%). Pietrangelo and Holland (2017:192) support the findings of this study in terms of the most prevalent types of cancer among female and male patients in general. Massyn, English, McCracken, Ndlovu, Bradshaw, and Groewald., (2015:27) also profiled cervical cancer as the most prevalent among females in Vhembe District. For males, being diagnosed with prostate and lung cancer would invoke fearful memories as these are the main causes of cancer-related deaths in South Africa. For women, breast and cervical cancer diagnosis would also invoke worries of devastating effects as they are associated with painful and slow death (Elit, 2015:246).

Communication of diagnosis results: The way results were communicated to patients were likely to reinforce the fear that patients already had with regards to cancer. Respondents were

also asked to indicate how the diagnosis results were communicated to them. The results are depicted in Figure 4.2.

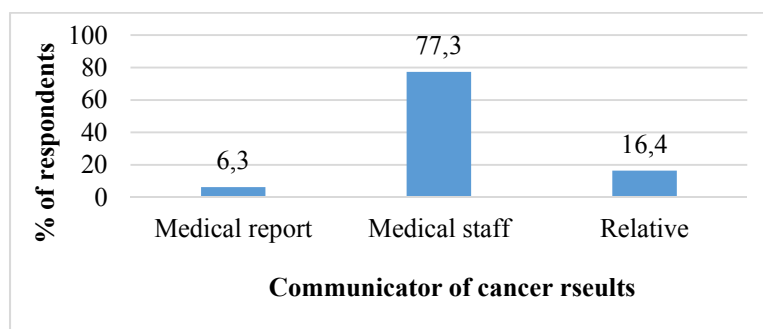


Figure 4.2: Results on who results were communicated

Respondents came to know about their cancer results in any of three ways. The majority of the respondents 160 (77.3%) were told their results by medical staff, 34 (16.4%) got results from relatives and the rest 13 (6.3%) read the results from the report. The results show that an acceptable way of communicating the results was utilised; good communication improves acceptance of the disease and improves treatment.

4.3. Section II: Impact of cancer diagnosis and its treatment among cancer patients

This subsection presents results and analysis of the impact of cancer diagnosis on cancer patients.

Emotional feelings after receiving information about cancer diagnosis: Respondents were asked to indicate their feelings after receiving the information about their cancer diagnosis.

Figure 4.3 show the results.

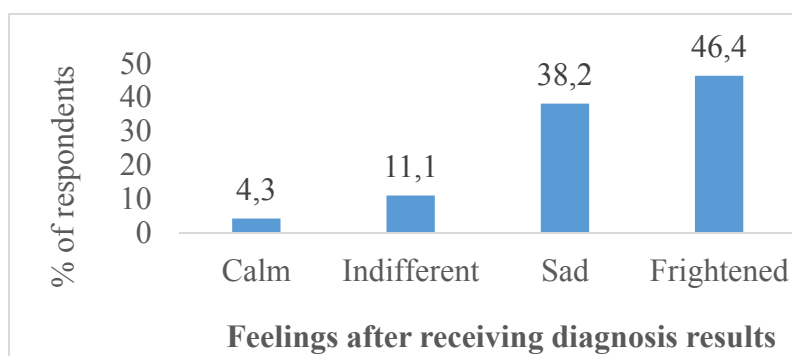


Figure 4.3: Feelings of respondents

Cancer diagnosis caused respondents to develop different feelings about the disease particularly negative ones. Sadness and fear were the two dominating feelings among patients diagnosed with cancer. Cancer diagnosis caused sadness and fear among the majority 175 (84.6%) of respondents.

Reaction upon getting results: Respondents were asked to indicate how they reacted upon getting information about their cancer diagnosis. Results are shown in Figure 4.4

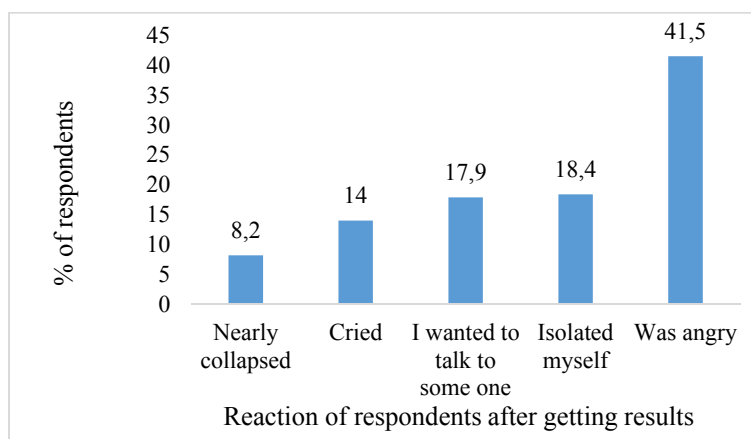
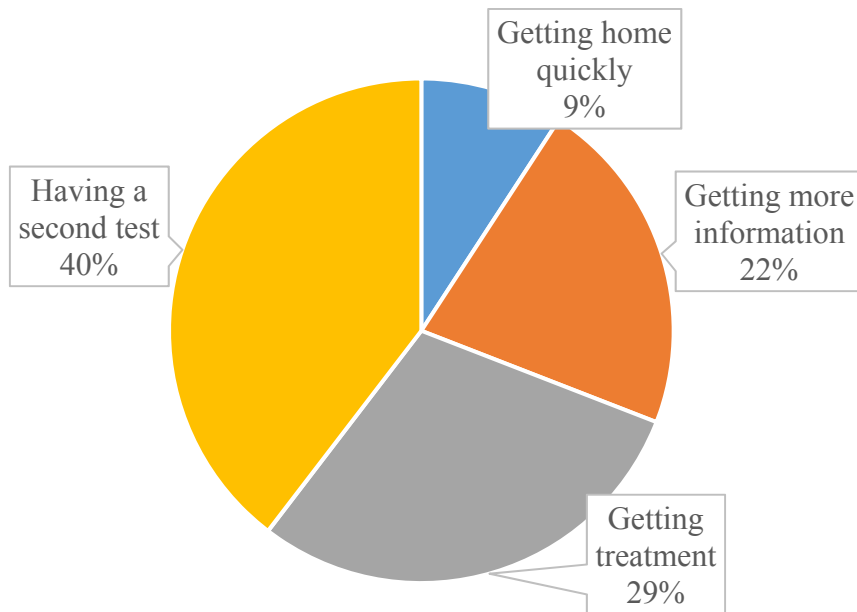


Figure 4.4. Reaction of respondents after getting results

The results show that 17 (8.24.8%) nearly collapsed on hearing the news, 29 (14.0%) wanted to cry, 37 (17.9%) wanted to talk to someone about their results, 38 (18.4%) wanted to isolate themselves, and 86 (41.6%) respondents indicated that they were angry upon hearing the results of their cancer diagnosis. Cancer diagnosis results had negative effects on the respondents as the majority reacted by crying, isolating themselves or getting angry. These results are supported by Black, Sheringham, Spencer-Hughes, Ridge, Lyons, Williams, Fulop & Pritchard-Jones (2015:6)'s findings that patients experienced different negative feelings that lead them to react in an awkward manner, detrimental to their well-being whenever they received news of positive-cancer results. Being diagnosed with cancer causes patients to panic especially, as they start thinking about what they will do with their lives in future. This was also confirmed by Robb, Simon, Miles and Wardle (2016: 1123) who singled out panicking as the dominant reaction to cancer diagnosis, instead of patients thinking of how the cancer would be managed. Panicking is generally caused by fear, anger and sadness at the unexpected results.

Thoughts after being diagnosed with cancer: Results on what respondents thought when diagnosed with cancer are shown in Figure 4.5.



Figurer 4.5: What respondents thought of doing after cancer diagnosis

Results in Figure 4.5 show what respondents thought of doing after getting results from their cancer tests. Some respondents, 19 (9.2%), thought of getting home quickly, probably to hide from the public and be alone; 45 (21.7%) were doubtful of the results and thought of taking a second test; 61 (29.5%) thought of getting treatment and 82 (39.6%) intended to get more information about the results and probably on the treatment. These results shows that cancer diagnosis made respondents panic and think of acting impulsively or hastily, in most cases a way that could be detrimental. These results are consistent with those of Robb, Simon, Miles and Wardle (2016:1123) on the reaction of respondents after getting test results, in which panic and confusion led to many possible actions. These results further show that respondents were unable to deal with their emotions after being diagnosed with cancer, leading to difficultness in identifying and dealing with one's feelings. Robb, Simon, Miles and Wardle (2016: 124) describe this as a sign of mental and emotional stress.

Main concerns raised by the cancer diagnosis are illustrated in Figure 4.6.

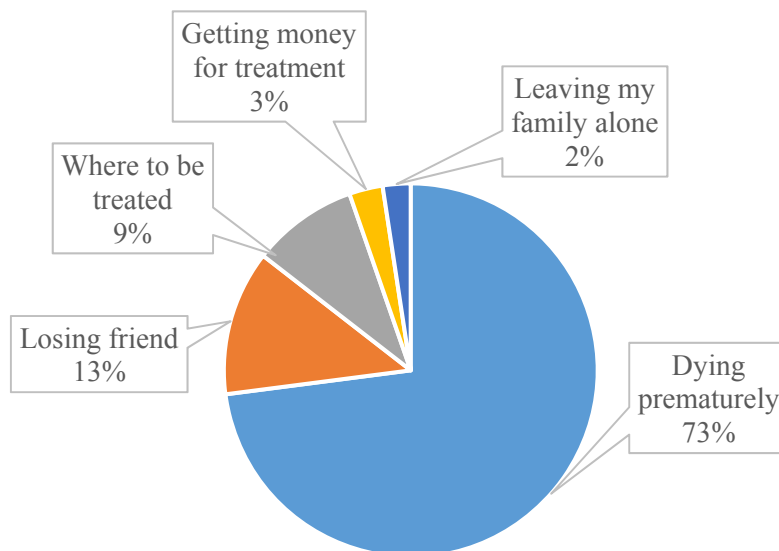


Figure 4.6. Main concerns of the cancer patients after diagnosis

The results show that the majority 151 (73%) of the respondents were preoccupied by the fear of dying prematurely and losing friends, while the minority at 25 (12.1%) were concerned about being treated and where to get the money to pay for the treatment bills. This further shows the state of panic and confusion which respondents displayed after being diagnosed with cancer. Only a negligible number of respondents 5 (2.4%) thought of their family's affairs, although they also expressed fear of death. These results are consistent with those described by American Cancer Society (2016) that cancer diagnosis tends to have a huge impact on most patients by making them feel depressed, worried and grappling with fear as a response to this life-threatening experience.

Ways in which cancer diagnosis impacted on patients: Results for impact of cancer diagnosis among patients are presented in Table 4.9.

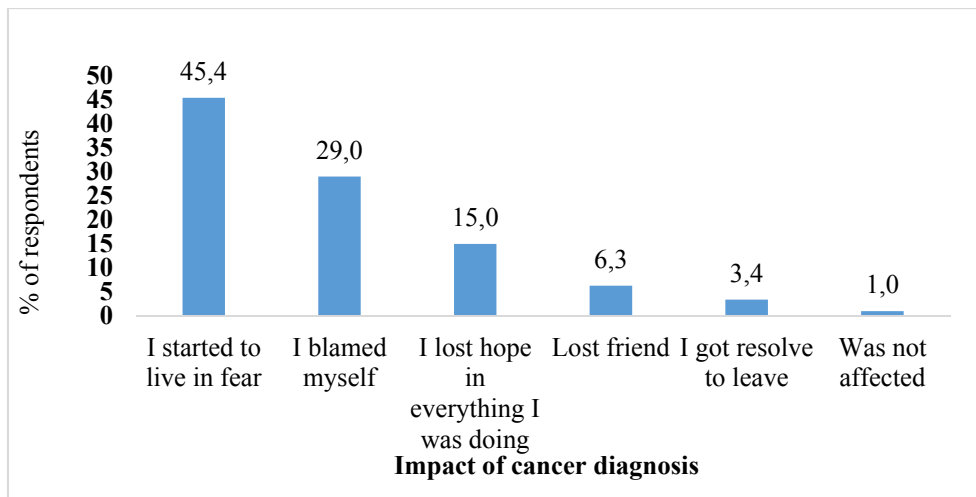


Figure 4.7: Impact of cancer diagnosis on respondents

Results depict that cancer diagnosis impacted on patients differently, although in most cases, negatively; 94 (45.4%) of respondents were frightened, 60 (29,0%) expressed anger by blaming themselves; 31 (15.0%) lost hope in everything, including living and 13 (6.3%) were isolated through loss of friends. Only a very small number of respondents 7 (3.4%) had resolved to live and 2 (1.0%) were not affected by the diagnosis. These results confirms that cancer diagnosis really affects patients in many ways, such as physically, emotionally and psychologically. Some patients felt hopeless after being diagnosed with cancer. These results are similar to the impact of cancer diagnosis described by the Cancer Council (2016) which included denial, fear/anxiety, anger, guilt, uncertainty, loneliness and sadness/depression and grief. A study by Shejila, Pai, Fernandes, Mathew, Chakrabarty, Devi and George (2017:2) on impact of cancer diagnosis on patients with breast cancer also found that patients were overwhelmed by receiving a cancer diagnosis. The results are also supported by the findings of the study by Karlsen, Frederiksen, Larsen, von Heymann-Horan, Appel, Christensen, Tjønneland, Ross, Johansen and Bidstru (2015:720) on the impact of breast cancer diagnosis on health-related quality of life; women with breast cancer reported significant decline in the quality of life, more than breast-cancer-free women. This implies that cancer diagnosis has a major impact on quality of life, immediately after the diagnosis.

Opinions on the impact of cancer diagnosis on cancer patients

Respondents were asked to express their opinions on list of given items to further determine the impact of cancer diagnosis. A Likert-type scale which was ranked from *strongly agree* to *strongly disagree* was used. The results of the rankings are shown in Table 4.5.

Table 4.5: Impact of cancer diagnosis among patients in Vhembe District

n = 207

Item	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Impact of cancer diagnosis on social life							
Q3.9.1.	Cancer diagnosis and its treatment have interfered with my family or social life.	62 (30)	103 (49.8)	26 (12.6)	12 (5.8)	4 (2)	207 (100)
Q3.9.2.	Cancer diagnosis has caused loss of interest in activities once enjoyed.	43 (20.8)	105 (50.8)	45 (21.8)	8 (3.9)	6 (2.9)	207 (100)
Physical impact of cancer diagnosis							
Q3.9.3.	Cancer diagnosis and its treatment have caused changes in how I look and this concerns me.	31 (15)	127 (61.4)	29 (14.1)	17 (8.3)	3 (1.5)	207 (100)
Q3.9.4.	Cancer diagnosis has caused physical hardship for me.	15 (7.3)	141 (68.2)	17 (8.3)	19 (9.2)	15 (7.3)	207 (100)
Q3.9.5.	Pain and discomfort have caused me to limit my activities.	30 (14.5)	154 (74.4)	16 (7.8)	7 (3.4)	0 (0)	207 (100)
Q3.9.6.	Eating problems due to loss of appetite or overeating.	25 (12.1)	83 (40.1)	34 (16.5)	47 (22.8)	18 (8.7)	207 (100)
Q3.9.7.	Tiredness or less energy almost every day.	8 (3.9)	143 (69.1)	40 (19.4)	11 (5.4)	5 (2.5)	207 (100)
Q3.9.8.	I am always restless almost every day	5 (2.5)	145 (70.1)	46 (22.3)	9 (4.4)	2 (1)	207 (100)
Financial impact of cancer diagnosis							
Q3.9.9.	Cancer has caused financial hardship for me.	15 (7.3)	140 (67.7)	41 (19.9)	9 (4.4)	2 (1)	207 (100)
Emotional impact of cancer diagnosis							
Q3.9.10.	I have been irritable or unusually angry and I have not controlled it well.	14 (6.8)	114 (55.1)	26 (12.6)	38 (18.4)	15 (7.3)	207 (100)
Q3.9.11.	I have felt anxious or worried about cancer and the treatment I am receiving.	23 (11.2)	108 (52.2)	17 (8.3)	38 (18.4)	21 (10.2)	207 (100)
Q3.9.12.	I have felt depressed or discouraged after diagnosis of cancer.	59 (28.6)	92 (44.5)	27 (13.1)	15 (7.3)	14 (6.8)	207 (100)
Q3.9.13.	I have had trouble coping with the stress I have been having.	68 (32.9)	95 (45.9)	20 (9.7)	18 (8.7)	6 (2.9)	207 (100)
Q3.9.14.	I have had trouble focusing at work or at home. or on routine	42 (20.3)	107 (51.7)	23 (11.2)	20 (9.7)	15 (7.3)	207 (100)

n = 207

Item	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
	things, such as reading the newspaper or watching television.						
Q3.9.15.	My sleeping habits have changed for the worse since my cancer diagnosis.	59 (28.6)	104 (50.3)	19 (9.2)	20 (9.7)	5 (2.5)	207 (100)
Q3.9.16.	Feelings of guilt, worthlessness and helplessness since my cancer diagnosis.	43 (20.8)	111 (53.7)	28 (13.6)	14 (6.8)	11 (5.4)	207 (100)
Q3.9.17.	Cancer diagnosis causes me to have trouble concentrating, remembering or making decisions.	37 (17.9)	133 (64.3)	20 (9.7)	16 (7.8)	1 (0.5)	207 (100)
Q3.9.18.	Thoughts of death or suicide or attempts at suicide occupy me since my cancer diagnosis.	48 (23.2)	124 (60)	19 (9.2)	11 (5.4)	5 (2.5)	207 (100)

The majority of respondents, 148 (71%), confirmed that the cancer diagnosis had affected negatively their social life as it disrupted the ways they interacted and related to other family members and stopped them from participating in social activities. According to Hanel (2016:2), cancer diagnosis causes an individual to be frightened by the prospects of death and also being stigmatised leading to social problems such as preventing interacting with others. An individual's social life tends to undergo severe changes upon being diagnosed with cancer as one needs time to be alone and think about the future, including treatment and changes to the body (Hanel, 2016:2; Greszta. & Sieminska, 2011:58). This implies that once one is diagnosed with cancer, his/her social life changes as one perceives himself/herself as being vulnerable to the disease. In this study, cancer diagnosis was found to have social impact on patients in Vhembe District, particularly, after them receiving the test results.

Results show that cancer diagnosis had many physical effects on patients as confirmed by the majority of the respondents, 152 (73.2%). The major physical impact of cancer diagnosis included physical hardship, pain and discomfort, tiredness, restless which limited the freedom of the patients from participation in physical activities and chores they used to perform before the diagnosis. Greszta & Sieminska (2011:59) observe that these limitations imposed by cancer diagnosis led to poor quality of life. Karlsen *et al.*, (2015:720) acknowledge that when

a patient starts treatment, things change drastically as some of the effects of treatment may lead to physical hardship. From this study, physical hardship among the patients due to the cancer diagnosis was one of the main impact of among the patients in Vhembe District.

Financial hardship was confirmed by the majority, 151 (72%) of the respondents and their families as some could not raise funds for general upkeep and treatment. According to Piotie (2017:1) Hanel, (2016: 1) and Sharp & Timmons (2010: 20), cancer treatment seems to be too expensive and that poor patients can hardly afford it all and survive, if one is a breadwinner. Sharp and Timmons (2010: 20) emphasise that employed patients diagnosed with cancer, may suffer financial loss due to pay cuts, if they were to continuously be absent from work. Physical impacts were likely to lead to change of tasks at work resulting in pay cuts that would cause the patients to fail to meet some of their financial obligations, such as medical bills, rent and school fees for children. A study by Sharp and Timmons (2010: 76) concluded that a significant association exists between cancer diagnosis and financial stress ($X^2_4=56.37, p<0.001$), implying that cancer diagnosis has the potential of causing financial crisis for patients. Piotie (2017:2) weighs in by saying that most of the poor people depend on government grants which are way below what is needed to pay for the treatment; this study also found that cancer diagnosis had impact on the financial means of patients in the Vhembe District.

Results also show that the majority of the respondents, 146 (71%) indicated that they had experienced emotional impact of cancer diagnosis. The results are consistent with findings made by other studies on emotional and psychological impact of cancer diagnosis on patients. Hanel (2016:2) indicates that cancer diagnosis brings about various emotional and psychological distress that one must deal with. Fear, anger, anxiety, depression, stress, restlessness, guilty conscience, hopelessness and worse, the intention to commit suicide are common emotional impact of cancer reported in many studies. A study by Sharp and Timmons (2010:76) conducted in UK on impact of cancer diagnosis among patients, found that there was a significant association between cancer diagnosis and emotional stress ($X^2_4=55.93, p<0.001$) and anxiety ($X^2_4=40.23, p<0.001$). These results support the findings of this study based on the empirical evidence that cancer diagnosis causes emotional and psychological stress among patients in the Vhembe District.

Waiting time to start treatment

The results in Table 4.6 and Figure 4.7 show the time taken to start treatment.

Table 4.6: Time taken to start treatment

n = 207

Time	No	%
less than 7 days	29	14,0
7 days	62	30,0
14 days	60	29,0
21 days	31	15,0
1 month	19	9,2
more than 1 month	6	2,9
Total	207	100

The results show that the time taken to start treatment varied from less than a week, to more than a month. For 29 (14.0%), treatment started in less than 7 days; for 62 (30%) treatment started in 7 days; 50 (29.0%) waited for 14 days; 31 (15%) waited for 21 days; 19 (9.2%) waited for a month to start treatment and 6 (2.9%) got treatment after waiting for more than 1 month. The results show that the majority of the respondents waited within a week to 14 days to start treatment. Early initiation of treatment improves the impact of cancer, especially, if patients are diagnosed early or in early stages of the disease.

Types of treatments taken

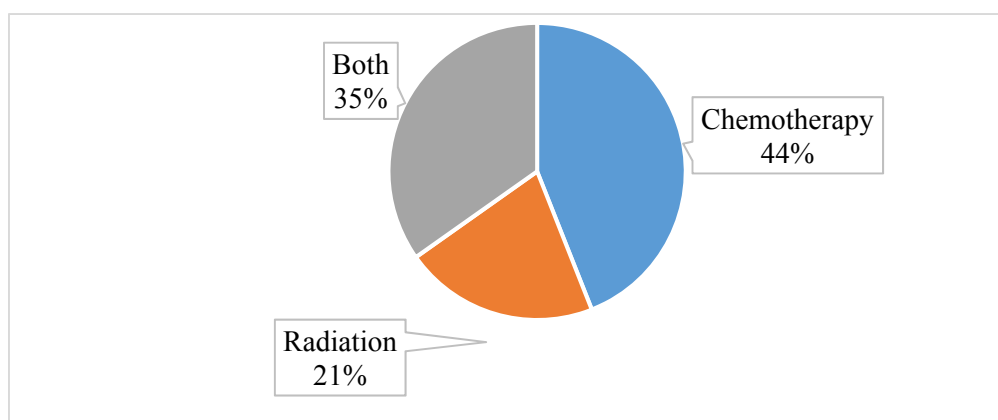


Figure 4.8: Types of cancer treatments offered

From the results on Figure 4.7, it could be seen that respondents who took chemotherapy alone were 91 (44.0%); those who were treated by radiation were 44 (21.2%) respondents and 72 (34.8%) respondents were treated using both types.

Time on treatment since treatment started

The time which patients had spent on treatment was an important aspect of this research. The results are displayed in Table 4.7.

Table 4.7: Duration on treatment since treatment started

n =207

Time on treatment	N	%
1 to 3 months	66	32.0
4 to 7 months	112	54.1
8 to 12 months	21	10.1
13 to 16 months	5	2.4
more than 16 months	3	1.4
Total	207	100

The results show that the respondents have been on treatment over various durations, ranging from 1 to more than 16 months; 66 (32.0%) of respondents had been on treatment for 1 to 3 months; 112 (54.1%) of the respondents have been on treatment for 4 to 7 months; 21 (10.1) respondents indicated their treatment time as 8 to 12 months; the remaining respondents, 8 (3.8%), have been on treatment for over a period of 13 months.

Cancer treatment is available at the provincial hospital where patients are transported daily for their treatment from their respective district hospitals. Moser & Meunier (2014:1) believe cure is now a reality for the majority of patients suffering from cancer and survival rates has reached 90%.

Change in life due to cancer diagnosis

The results show that 26 (12.6%) respondents indicated that their lives have not been affected by the cancer diagnosis; 51 (24.6%) respondents indicated that they have lost friends; 53 (25.6%) respondents indicated lost employment and 77 (37.2%) respondents became disabled after being diagnosed with cancer. Hanel (2016:3) points out that the health of the patient changes, due to emotional, physical and psychological pressure which are the result of many social issues, including loss of employment and friends. A study by Greszta and Siemińska

(2011: 55–64) on Patient-Perceived Changes in the System of Values After Cancer Diagnosis concluded that cancer diagnosis causes significant changes in lives of patients because of changing values. In this regard, patients diagnosed with cancer’s understanding of the world changed completely immediately after getting results and awaiting treatment.

Table 4.8: Results on change in life after cancer diagnosis

Changes of life after cancer diagnosis	n = 207	
	No	%
None	26	12,6
Loss of friend	51	24,6
Unemployment	53	25,6
Disability	77	37,2
Total	207	100

Most dreaded effects of cancer

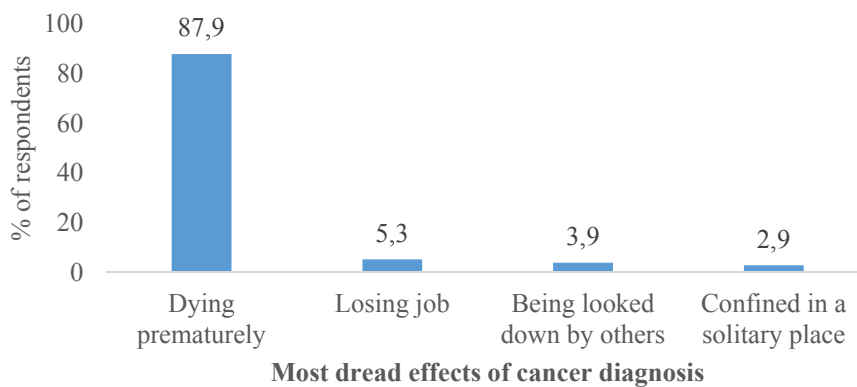


Figure 4.9: Respondents’ most dreaded effects of cancer diagnosis

The results show that the majority of the respondents, 186 (87.9%) indicated that the most feared effect of cancer diagnosis was dying prematurely, while fears about losing jobs, being looked down upon by others and confinement in a solitary place were indicated by 25 (12.1%) respondents. This implies that fear of dying prematurely, pre-occupied most of the patients who had just been diagnosed of cancer. When one is pre-occupied with death

thoughts, there is a loss of quality of life resulting in confusion and isolation (Greszta & Siemińska, 2011: 55).

4.4. Section III: Strategies used by patients to cope with the impact of cancer diagnosis

Respondents were requested to indicate whether they used selected coping strategies. Table 4.9 shows results of the coping strategies used to deal with the impact of a cancer diagnosis.

Table 4.9: Coping strategies possibly used by patients diagnosed with cancer

Item	Description	Responses n = 207		Total n (%)
		Yes n (%)	No n (%)	
Avoidance coping strategies				
4.1.	Using drug, alcohol or something to forget the ordeal of the cancer diagnosis thoughts.	119 (57.9)	88 (42.1)	207 (100)
4.2.	Avoiding any topic about cancer.	163 (78.7)	44 (21.3)	207 (100)
4.3.	Diverting my attention to something else.	161 (77.8)	46 (22.2)	207 (100)
4.4.	Avoiding inquisitive persons like distance relatives and neighbours.	168 (81.2)	39 (18.8)	207 (100)
Acceptance coping strategies (emotion-regulation process)				
4.5.	Joining cancer support group for counselling.	80 (38.6)	127 (61.4)	207 (100)
4.6.	Sharing emotions with friends and relative.	75 (36.2)	132 (63.8)	207 (100)
4.7.	Focusing on positive aspects of life while waiting treatment plan.	89 (43.0)	118 (57.0)	207 (100)
4.8.	Reading books on cancer.	87 (42.0)	120 (58.0)	207 (100)
4.9.	Talking to medical staff about treatment plan.	101 (48.8)	106 (51.2)	207 (100)
Denial coping strategies				
4.10.	Praying in a solitary place to console myself.	129 (62.3)	78 (37.7)	207 (100)
4.11.	Confronting family members who talked to me about the cancer diagnosis.	130 (62.8)	77 (37.2)	207 (100)
4.12.	Singing religious or emotive songs to comfort myself.	140 (67.6)	67 (32.4)	207 (100)
4.13.	Keeping quiet when in public places.	156 (75.4)	51 (24.6)	207 (100)

The results show thirteen activities that respondents could possibly use as some form of coping strategy after being diagnosed with cancer. The activities were then divided into three basic coping strategies, namely, avoidance, acceptance and denial. From the Table, it could

be seen that nearly the majority, 56% of respondents preferred to use more of avoidance and denial strategies and less of acceptance ones. The results are consistent with findings made in studies conducted elsewhere in the world on the impact of cancer diagnosis among patients. Wu, Lai, Sheu & Shun, (2015: 213-223) assert that patients diagnosed with cancer strive to find solutions to their problems through a variety of strategies, either by avoidance, acceptance or denial. Also, a study by Khalili, Farajzadegan, Mokarian and Bahrami (2013:105–111) on coping strategies, quality of life and pain in women with breast cancer alludes to the tendency of patients diagnosed of cancer trying to use all possible means, some sanctioned by medical process and some not, in order to come to terms with their predicaments. The same study also points out that in many cases, because of fear and confusion, patients would tend to use unorthodox methods of coping with cancer diagnosis. Such methods include isolation, pretence, confrontations and at times, denial (Khalili *et al.*, 2013:105). Also, a study by Ahadi, Delavar and Rostami (2013: 106) on comparing the coping strategies of cancer patients and healthy persons, concluded that a significant difference existed between the manner in which they chose the strategies; cancer patients tended to be driven by fear, anxieties and stress. In this study, it was found that patients diagnosed with cancer in hospitals in the Vhembe District hospitals undertook activities that promoted avoidance and denial as forms of coping, compared to acceptance strategies. This implies that most of the coping strategies were chosen under emotional stress.

The manner in which illness perceptions and psychological distress affected the selection of copying strategies is discussed in the following subsection

4.5. Section IV: Illness perceptions' and psychological distress' effects on the coping strategies of cancer patients in the Vhembe District

Respondents were asked to rate each of the statements on how illness perceptions and psychological distress affects their coping strategies and results are shown in Table 4.10.

Table 4.10: Effects of illness perceptions and psychological distress on coping strategies of cancer patients

n = 207

Item	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Q5.1.	Alcohol or drugs help calm me down when I am upset.	46 (22.2)	81 (39.1)	22 (10.6)	36 (17.4)	22 (10.6)	207 (100)
Q5.2.	I wish people would leave me alone to face my problems.	70 (33.8)	115 (55.6)	18 (8.7)	4 (1.9)	0 (0)	207 (100)
Q5.3.	No matter what I do, I can't sleep in fear of death.	52 (25.1)	91 (44)	33 (15.9)	22 (10.6)	9 (4.3)	207 (100)
Q5.4.	I think cancer is my fate and there is no point of fighting it.	54 (26.1)	88 (42.5)	32 (15.5)	21 (10.1)	12 (5.8)	207 (100)
Q5.5.	Having cancer is bad enough. but to make matters worse no one knows how to take care of me.	51 (24.6)	109 (52.7)	23 (11.1)	17 (8.2)	7 (3.4)	207 (100)
Q5.6.	I look for more information when problems come up or when I get bad news	27 (13)	104 (50.2)	35 (16.9)	25 (12.1)	16 (7.7)	207 (100)
Q5.7.	I try to lighten up and see the humour in a tough situation.	21 (10.1)	86 (41.5)	46 (22.2)	33 (15.9)	21 (10.1)	207 (100)

The results show that all the coping strategies were influenced by respondents' illness perceptions and their mental state after getting results for a cancer diagnosis. The majority, 127 (61.3%) of the respondents confirmed (*agreed/strongly agree*) that resorting to alcohol or drugs could reduce the challenges they faced after their cancer diagnosis; they perceived drunkenness as a form of remedy for the cancer diagnosis, a denial or avoidance strategy for dealing with the reality. In this case patients thought that by resorting to alcohol/substances they would cope with the impact of cancer diagnosis. This simply shows that wrong perceptions and mental stress force patients to resort to self-defeating coping strategies. Another clear-cut case in which illness perceptions and psychological stress influenced coping strategies of cancer patients, was with regards to the respondents' insistence on being

left alone to deal with their cancer diagnosis, (Q5.2., 89.4% affirmed by *strongly agreeing* and *agreeing*). Q5.3 results show that 69.1% of the respondents were so worried that they spent many sleepless nights pondering on their cancer diagnosis. Failure to sleep is evidence of high levels of stress arising from poor coping strategies. Q5.4, shows that 68.6% of the respondents affirmed cancer as their fate and were no longer prepared to fight it. In this case, respondents were influenced by the consequences of cancer as always identified with death or referred to in their communities as being incurable. For Q5.5, 77.3% had developed wrong perceptions about cancer due to stress and thought that coping with cancer was very difficult and did not want any assistance as they knew how to take care of themselves; an expression of anger and fear. In Q5.6, 63.2% of the respondents confirmed that fear of death due to cancer, forced them to look for more information whenever there was some bad news. This illness perception and psychological distress influenced respondents to prefer certain coping strategies to others and which were not always the most appropriate ones. The findings of the study show that the respondents' beliefs about cancer, its cause, progression, consequences and cure sometimes led to the choice of wrong coping strategies that were likely to be detrimental in the long run. A study by Morgan, Villiers-Tuthill, Barker and McGee (2014:50) concludes that when patients are faced with life-threatening situation, they were bound to choose coping strategies based on what they believed was right at that time, regardless of the outcome. Based on the self-regulation model of health and illness perceptions, patients form their own representations which help them understand their experiences and on which they base their own coping responses (Morgan *et al.*, 2014:50). In this study psychological stress, as discussed in other previous subsections and emotional stress tended to overshadow reasoning when selecting and using coping strategies. Illness perceptions are always associated with depression and anxiety, with various illness, among different people, hence, the choice of a coping strategy by ill-informed patients would tend to be guided by impulse and a desire to get the disease cured, regardless of the consequences (Broadbent, Ellis, Thomas, Gamble, & Petrie, 2009:17-23),.

4.6. Chi Square results

A test for association or independency between impact of cancer diagnosis among patients and coping strategies used was performed to check whether there were significant associations existing. Another set of Chi-Square tests was conducted for the effects of illness perception and psychological distress on coping strategy used by patients diagnosed of cancer. Chi-square test was based on cross-tabulation of items for each research question

instead of hypothesis, and only results which were significant at $p < 0.05$ were reported on in this study. Results are presented in Tables 4.11 and 4.12. In this study, only results where there were statistical significances at $p < 0.05$ were reported. A brief analysis for each is given.

Table 4.11: Chi-square results for impact of cancer diagnosis on coping strategies used and impact of cancer diagnosis

n = 207

Impact of cancer diagnosis	Coping strategy	Observed			Expected	Chi-square	Df	p-value
		Yes	No	Total				
Feelings	Confronting family members who talked to me about cancer diagnosis							
	Calm	9	0	9	51.75	11.637	3	0.009
	Frightened	59	37	96	51.75			
	Indifferent	19	4	23	51.75			
	Sad	43	36	79	51.75			
Thinking	Singing religious or emotive songs to comfort myself							
	Getting home quickly	14	4	18	51.75	11.997	3	0.017
	Getting more information	64	18	82	51.75			
	Getting treatment	38	24	62	51.75			
	Having a second test	24	21	45	51.75			
Reaction after diagnosis	Using drug, alcohol or something to forget the ordeal of cancer diagnosis thoughts							
	I blamed myself	46	14	60	34.5	6.351	5	0.033
	I resolved to live	5	2	7	34.5			
	I lost hope in everything I was doing.	23	8	31	34.5			
	I started to live in fear.	77	17	94	34.5			
	Lost friends	10	3	13	34.5			
	Was not affected.	2	0	2	34.5			
Main concern	Using drug, alcohol or something to forget the ordeal of cancer diagnosis thoughts							
	Dying prematurely	85	66	151	41.4	3.612	4	0.046
	Getting money for treatment	5	1	6	41.4			
	Leaving my family alone	4	1	5	41.4			
	Losing friends	13	13	26	41.4			

	Where to be treated	12	7	19	41.4			
--	---------------------	----	---	----	------	--	--	--

A weak association existed between the impact of cancer diagnosis on the feeling of patients and the coping strategy of confronting family members who talked to the patients about cancer diagnosis ($X^2 = 11.637$; $n = 207$; $Df = 3$ and $p < 0.009$). Respondents indicated that they were more likely to be frightened by family members talking about the diagnosis and become confrontational. There was also an association, the effect of cancer diagnosis on what patients thought immediately after getting results - the coping strategy of self-consoling by singing religious or emotive songs ($X^2 = 11.997$; $n = 207$; $Df = 3$; $p < 0.017$). The results show that patients who sought to console themselves by singing emotive songs were more likely to seek information on cancer diagnosis, treatment or even seek for a second test. Cancer diagnosis brought about certain reactions among patients which influenced the choice of coping strategy. An association existed between -using drug, alcohol or something to forget the ordeal of cancer diagnosis thoughts reaction to cancer diagnosis and choice of coping strategy ($X^2 = 6.351$; $n = 207$; $Df = 5$; $p < 0.033$). Patients diagnosed of cancer reacted by blaming themselves, losing hope in whatever they were doing or started living in fear and were more likely to get intoxicated in order to forget the predicaments brought about by the thoughts on the cancer diagnosis. There was also an association between the main concern of cancer diagnosis and the coping strategy to be used among patients, ($X^2 = 3.612$; $n = 207$; $DF = 4$; $p < 0.046$). This implied that patients who were pre-occupied with the idea of dying prematurely were likely to try to overcome the problem by getting intoxicated.

Illness perceptions and psychological distress effects on coping strategies used by patients in dealing with the impact of cancer diagnosis, results with association at $p < 0.05$ are shown in Table 4.12. The illness perception that alcohol helps calm a patient when facing a serious situation was associated with a number of coping strategies used by patients to overcome cancer diagnosis.

Table 4.12: Illness perceptions and effects of psychological distress on coping strategies used by patients, to deal with impact of cancer diagnosis

$n = 207$

Illness	Coping	Observed	Expected	Chi-	Df	p-value
---------	--------	----------	----------	------	----	---------

perception/psychological distress	strategy				square			
		<i>Yes</i>	<i>No</i>	<i>Total</i>				
Alcohol helps calm me down when I am upset.	Using drug, alcohol or something to forget the ordeal of cancer diagnosis thoughts							
	Agree	80	39	119	69.0	2.899	2	0.029
	Neutral	10	5	15	69.0			
	Disagree	40	33	73	69.0			
	Diverting my attention to something else							
	Agree	89	21	110	69.0	1.052	2	0.0418
	Neutral	21	9	30	69.0			
	Disagree	51	16	67	69.0			
	I wish people would leave me alone to face my problems.	Using drug, alcohol or something to forget the ordeal of thoughts on cancer diagnosis						
		Agree	76	39	115	69.0	7.926	2
Disagree		34	40	74	69.0			
Neutral		9	9	18	69.0			
Joining cancer support group for counselling								
Agree		34	81	115	69.0	9.293	2	0.010
Neutral		8	10	18	69.0			
Disagree		38	36	74	69.0			
Focusing on positive aspects of life, while waiting treatment plan								
Agree		40	75	115	69.0	7.830	2	0.020
Neutral		8	10	18	69.0			
Disagree		41	33	74	69.0			
Talking to medical staff about treatment plan								
Agree		43	72	115	69.0	13.579	2	0.001
Neutral		12	6	18	69.0			
Disagree		46	28	74	69.0			
Singing religious or emotive songs to comfort myself								
Agree		89	26	115	69.0	12.491	2	0.002
Neutral		8	10	18	69.0			
Disagree		43	31	74	69.0			
Keeping quiet when in public places								
Agree	93	22	115	69.0	6.239	2	0.044	
Neutral	10	8	18	69.0				
Disagree	53	21	74	69.0				
No matter what I do, I cannot sleep in fear of death	Focusing on positive aspects of life while waiting treatment plan							
	Agree	36	55	91	69.0	6.842	2	0.033
	Neutral	21	12	33	69.0			

	Disagree	32	51	83	69.0				
	Reading books on cancer								
	Agree	31	66	97	69.0	8.692	2	0.013	
	Neutral	21	6	27	69.0				
	Disagree	35	48	83	69.0				
I think cancer is my fate and there is no point of fighting it.	Using drug, alcohol or something to forget the ordeal of thoughts on cancer diagnosis								
	Agree	49	39	88	69.0	6.877	2	0.032	
	Neutral	25	7	32	69.0				
	Disagree	45	42	87	69.0				
		Avoiding any topic about cancer							
	Agree	67	21	88	69.0	7.487	2	0.024	
	Neutral	31	1	32	69.0				
Disagree	65	22	87	69.0					
Having cancer is bad enough, but to make matters worse no one knows how to take care of me	Using drug, alcohol or something to forget the ordeal of cancer diagnosis thoughts								
	Agree	54	55	109	69.0	7.701	2	0.021	
	Neutral	18	5	23	69.0				
	Disagree	47	28	75	69.0				

The results show that in some cases patients diagnosed with cancer's choice of coping strategies depend on what they perceive about the disease and its effects as life threatening. Patients who believe that taking alcohol to reduce the level of stress after being upset were likely to agree to have used drugs, alcohol or anything intoxicating so that they forget the ordeal caused by thoughts on the cancer diagnosis. A significant association between the belief that cancer pains can be reduced by getting drunk and the use intoxicating substances existed at $X^2 2.899$; $n = 207$; $Df = 2$; $p < 0.029$. Similarly, the need to remain calm through the use alcohol also associated significantly with choosing a coping strategy that diverted the patients' attention from the illness to something else, as indicated by $X^2 1.052$, $n = 207$, $Df = 2$ at $p < 0.029$.

The patients' wish to be left alone to face their own predicaments with regards to cancer diagnosis was found to have influence on the choice of a variety of copying strategies at $p < 0.05$. The tendency to use drug, alcohol or something as a coping strategy so as to forget the ordeal of thoughts of cancer diagnosis was significantly associated with the need to be left alone to deal with cancer diagnosis ($X^2 = 7.926$; $n = 207$; $Df = 2$; $p < 0.019$). Respondents who wished to be left alone were more likely to avoid joining cancer support group for

counselling, as shown by a significant association ($X^2 = 9.293$; $n = 207$; $Df = 2$; $p < 0.010$). Similarly, results show that by wanting to be left alone, the respondents were less likely to focus on the positive aspects of their lives while waiting for treatment plan ($X^2 = 7.830$; $n = 207$; $n = 2$; $p < 0.020$), and were also less likely to consult medical staff on treatment plan ($X^2 = 13.579$; $n = 207$; $n = 2$; $p < 0.001$). The choice of singing religious or emotive songs to comfort oneself was influenced by the thought that one can solve own illness problems when left alone ($X^2 = 12.491$; $n = 207$; $Df = 2$; $p < 0.002$). The coping strategy of keeping quiet in public places was significantly associated with the desire to be left alone to deal with one's problems ($X^2 = 6.239$; $n = 207$; $Df = 2$; $p < 0.044$).

From the results, it could be deduced that patients base their choice of coping strategies on what they know about cancer diagnosis and the effects of the stress they were experiencing at that particular time. In this study, the choice of avoidance and denial coping strategies were based on what the patients perceived as the consequences of cancer and the fear to face such fate. As such, the patients tend to act impulsively by denying that they were diagnosed with cancer, avoiding anything associated with cancer.

The findings are similar to those made by other previous studies that illness perceptions and psychological distress played an important role in informing patients just diagnosed with cancer on how to cope with the disease (Richardson, Schüz., Sanderson, Scott & Schüz, 2016: 724). Patients' understanding, belief of the severity and consequence of the disease are more likely to inform them on which coping strategies to adopt. Richardson *et al.*, (2016: 724) concludes that a strong association between illness perceptions and choice of coping strategy existed, although, patients tended to take drastic decisions without consulting medical experts on the consequences of their choices. Katavić, Tanackovic and Badurina (2015:208) in their study on illness perceptions and choice of coping strategies found that more passive ways of coping were more often found in patients who perceived their illness as long-lasting, more emotionally burdening, and having extensive negative consequences. Hopman and Rijken (2015: 11) contend that patients' views on the severity of cancer vary; many believe their illness to be long lasting, therefore, they need to choose appropriate coping strategies. This study has established that patients diagnosed with cancer react differently but these reactions mostly point to the dominance of fear, which leads them to form illness perceptions that their lives have come to end; this in turn causes them to suffer from psychological and emotional distress. Both illness perceptions and psychological distress influence patients on how they

cope with cancer diagnosis; the majority unknowingly chose strategies that disadvantage them.

4.7. Conclusion

This chapter presented, analysed and interpreted the results of the study. The treatment of results was done in five subsections. Results were quantitatively presented on frequency graphs and tables. The analysis and interpretation of each set of results was then done. A number of findings were made for each section of results. Statistical results showed associations between gender, age, level of education and cancer diagnosis variables at significance levels of $p < 0.05$. There were differences on the impact of cancer diagnosis based on the variables test. Correlation results also showed varied significant associations between age range, education level and cancer diagnosis variables at $p < 0.05$. A summary of the findings will be discussed in Chapter 5.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1.Introduction

In this chapter a summary of the study is provided together with conclusions arrived at and also recommendations will be made. This chapter further states the limitations encountered in conducting the study and possible future research arising from this study are also stated.

5.2.Summary of research

The purpose of this cross-sectional quantitative study was to understand the impact of cancer diagnosis among cancer patients from hospitals in the Vhembe District, a populous district in the Limpopo Province, South Africa.

5.2.1. Summary of findings

5.2.1The prevalence of cancer diagnosis by demographic characteristics

Demographic characteristics of patients diagnosed with cancer such as gender, age range, educational, employment status source of income and illness perceptions and psychological distress were factors used to explain the impact of cancer diagnosis on patients. The majority of the patients diagnosed with cancer had a family history of cancer and most of those family members diagnosed had died, regardless of the type treatment they received. There were other factors, besides hereditary that caused cancer among the patients used in this research study. It was also established that the majority of the patients had been recently diagnosed with cancer and were undergoing treatment. The waiting time of 1.4 weeks for results was longer than the 1 – 3 days standard time and this had caused a lot of anxiety among patients. Types of cancer among the patients was related to the gender of respondents, with breast cancer and cervical cancer accounting for more than 60% of cases in female, while prostate and lung cancer were recorded among the majority of male patients. It was found that the results of cancer diagnosis were communicated by medical staff, as recommended.

5.2.2 Types of cancer which patients in Vhembe District were diagnosed of

The most common cancer type among female patients were breast cancer and cervical cancer, while among male respondents, the common types were prostate, lung and colon. In most cases, test results were communicated by medical staff.

5.2.3 Impact of cancer diagnosis among patients in Vhembe District

The findings on the impact of cancer diagnosis on patients were summarised under emotional, physical, psychological, social and financial consequences in the discussions below.

a) Emotional impact

- Sadness and fear among patients were the main dominating emotional impact of cancer diagnosis; this resulted in negative feeling about themselves and led to isolation from the communities.
- Loss of hope was another emotional impact that was experienced by the majority of patients diagnosed of cancer.
- Patients reacted differently upon receiving results of cancer diagnosis with the majority crying, isolating themselves or getting angry.
- Another emotional impact of cancer diagnosis was trouble in concentrating, remembering issues and decision-making.
- Patients hardly slept as they pondered on their fate which they thought had been decided and they were no longer prepared to fight it.
- Patients were critical and weary of those who cared for them as thought they were incapable of looking after them.

b) Physical impact

- Cancer diagnosis causes physical hardship among patients, such as being disabled through treatment or a change in their facial appearances.
- Patients diagnosed with cancer experienced severe pain and discomfort after diagnosis and during treatment; these affected their physical wellbeing.

c) Psychological impact

- The majority of the patients diagnosed with cancer were worried of dying prematurely and leaving their families on their own. Worries of death were the main concerns of the majority of the patients.
- The patients were depressed, hence, they started looking for information whenever there was bad news.
- Cancer diagnosis caused patients to blame themselves (denial) and to lose hope for living. Patients experienced fear due to physical and emotion changes from the effects of cancer; patients who blamed themselves were in a state of denial about being diagnosed with cancer.
- Patients diagnosed with cancer suffered from stress and anger, hence, pre-occupied themselves with thoughts of death or suicide. Being diagnosed with cancer had a psychological impact on patients and relatives.
- The most dreaded effect of cancer diagnosis was dying prematurely, as indicated by 186 (87.9%) respondents. The impact of cancer diagnosis, therefore, is its resultant painful death; this causes patients to contemplate a premature death.

d) Social impact

- Patients had mixed attitudes towards their spouse as they felt that support and caring provided by spouses were not sufficient to comfort them. Spouses' reaction evoked mixed reactions in patients which, in many cases, negatively affected them socially and emotionally to the extent of trying to take their lives. Relatives' reaction to cancer diagnosis had a negative impact on cancer patients.
- After cancer diagnosis, patients were afraid of losing their friends and being discriminated against by family and community members.
- Cancer diagnosis interfered with family and social life causing the loss of interest in activities, previously enjoyed by patients.
- There were changes to the social lives of patients diagnosed of cancer due to loss of friends, loss of jobs or income and physical disability. Lung cancer and breast cancer cause physical disability after treatment of the patient. Changes in life were some of the major impact of cancer diagnosis and treatment.
- Health professional provided information on cancer diagnosis and treatment, however, some patients felt that it was not sufficient to make them understand the

dilemma they were facing. The provision of useful information on cancer diagnosis and treatment to patients by health professional was insufficient to make some patients fully understand the situation.

- There were varying attitudes of relatives/friends towards patient after cancer diagnosis; some relatives were uncaring, some discouraging and giving support with reservation, some were encouraging and supportive wholeheartedly while others were supportive but with reservations. Relatives of patients diagnosed with cancer were generally supportive despite the various attitudes they displayed towards the patients.

e) Financial impact

- Cancer diagnosis caused financial difficulties for patients and their families especially for patients who were breadwinners.

5.2.4 Coping strategies used by patients diagnosed with cancer in the Vhembe District

The coping strategies used by patients diagnosed with cancer could be described as avoidance, denial and acceptance.

- *Avoidance strategies included:*
 - ✓ Using drug, alcohol or other substances to forget the ordeal of the cancer diagnosis thoughts;
 - ✓ Avoiding any discussions about cancer;
 - ✓ Diverting attention to something else, and
 - ✓ Avoiding inquisitive persons like distant relatives and neighbours.
- *Denial coping strategies used were:*
 - ✓ Praying in a solitary place to console oneself;
 - ✓ Confronting family members who talked to me about cancer diagnosis;
 - ✓ Singing religious or emotive songs to comfort myself, and
 - ✓ Keeping quiet when in public places.
- *Acceptance coping strategies used were:*
 - ✓ Joining cancer support group for counselling;
 - ✓ Sharing emotions with friends and relative;

- ✓ Focusing on positive aspects of life while waiting for treatment plan;
- ✓ Reading books on cancer, and
- ✓ Talking to medical staff about treatment plan.

Avoidance and denial strategies were more dominant than acceptance ones with patients diagnosed with cancer; they always seem to choose to use uninformed ways of alleviating the problem. This included the need to quickly deal with the cancer diagnosis using drugs/alcohol, being confrontational, isolating themselves, trying to avoid speaking about cancer and keeping quiet in public.

5.2.5 Effects of illness perceptions and psychological distress on coping strategies

The choice of coping strategy was based on illness perception, especially, the consequences of cancer diagnosis. This led to high levels of psychological stress that influenced the majority of the respondents to opt for wrong coping strategies, based on emotions rather than reasons. In many situations, it would seem that patients chose drastic coping strategies which isolated them completely from the rest of the family. It would seem that there was a lack of correct information about the cancer disease, causes, treatment and consequences which led to the majority of patients anticipating early death, hence, the choice of wrong coping strategies. While illness perceptions and psychological distress influenced the choice of coping strategies, psychological and emotional stress seem to have been prominent in guiding the patients on what to do immediately after getting results; a situation likely to change after getting more information, after consultation with experts. Fear, confusion and uncertainty, however, caused panic among patients and led them to take the most obvious decision of avoidance and denial of the diagnosis.

5.3. Chi-square results

Chi-Square test results showed that a significant association existed at $p < 0.05$ between the impacts of cancer diagnosis. The diagnosis:

- interfered with family or social life more in younger patients than in older patients;
- caused loss of interest in usual activities among older patients, compared to young ones;
- increased concerns about changes in one's physical appearance;
- caused more physical hardship among elderly patients than younger ones;

- caused pain and discomfort that limited physical activities more in older patients than in younger ones;
- caused eating problems due to loss of appetite or overeating more among elderly people than young ones;
- caused financial hardship among older patients due to financial responsibilities;
- made young patients feel more depressed and discouraged than the elderly patients;
- caused elderly patients to have more predicaments in coping with the stress than younger patients, and
- caused changes in sleeping habits for the worse, among elderly patients than in young patients.

What coping strategies did patients use to overcome the impact of cancer diagnosis?

- Cancer diagnosis compelled patients to use a variety of coping strategies:
 - abusing substances to reduce stress,
 - requesting to be left alone in order to think over the dilemma and their possible fate
 - depressed patients usually looked for information on cancer-related issues whenever there was bad news, such as a death or the arrival of a newly-diagnosed cancer patient, and
 - Talking to whoever was prepared to listen.

How did illness perceptions and psychological distress affect the coping strategies of patients diagnosed with cancer?

The main findings for this research question were that:

- The coping strategies used by patients were not effective in overcoming the thoughts of cancer diagnosis as they spent sleepless and restless nights due to pre-occupation/worries about their illness; these evoked anticipation of immediate death.
- Patients were depressed as they started looking for information whenever there was bad news.
- Patients perceived that being diagnosed of cancer was equal to eminent death as they believed cancer was incurable.

- Patients had given up on life as they thought their fate was already decided and the majority were no longer prepared to fight the disease.
- The majority were wary of those who cared for them, as thought they were incapable of looking after them.

Chi-square test results indicated the existence of an associations between coping strategies used by patients diagnosed of cancer and their illness perceptions and psychological distress at a significance level ($p < 0.05$). The associations were high in avoidance and denial coping strategies where illness perceptions and psychological distress were compelling, the patients feared the effects of cancer diagnosis; they were frightened to lose friends, did not want relatives to know about their status, and were afraid to lose their jobs. Based on these association, it could be argued that patients diagnosed with cancer were not given enough counselling prior to and during the receiving of results.

5.4.Integration of findings related to theoretical framework

Common Sense Model of Self-regulation (CSMoS) by Leventhal, Meyer & Nerenz (1980) was selected as the theoretical framework to study the impact of cancer diagnosis among patients in the Vhembe District in the Limpopo Province. According to Ogden (2000), the purpose of the Common-Sense Model of Self-Regulation theoretical framework is to describe stages of the processes patients diagnosed with cancer undergo so that they realise the cancer threat, explore their emotional responses to the threat, understand perceptions of the threat and potential treatment actions. This makes it possible for them to create action plans for addressing the threat, and also integrate continuous feedback on action-plan efficacy and threat-progression. In this subsection, the research findings are integrated into the framework.

5.4.1. Representation of health threat

The findings of this study show that health threat representations consisted of five dimensions as described by Leventhal , Leventhal and Contrada (2007: 717); these are, namely, 1) identity, which describes how patients identify their cancer illness, using symptoms and disease labels such as incurable or killer disease; 2) their beliefs about the causes of cancer; the majority of the patients blame themselves for being careless and this caused the cancer; 3) timeline or duration over which cancer diagnosis was made from the time the symptoms started being visible also made the patients panic, fearing that they life had come to an end; 4) Being diagnosed with cancer places a person under severe stress when they think about

personal consequences of the disease. The majority of the patients in the study felt hopeless and they anticipated premature death after being diagnosed of cancer; and 5) control, which refers to how patients strived to have the disease cured and the same time cope with the new health predicament. The first three things that patients sought were treatment, and information on where and how long it would take before one dies. This showed complete lack of information about cancer and its treatment.

5.4.2. Stage 1: Theoretical interpretation

Patients' perceptions of illness were associated with worse health outcomes. Increased distress about cancer diagnosis was associated with the perception that cancer had serious consequences and the majority of patients anticipated premature death. It is, therefore, necessary for health professionals to complete a comprehensive health assessment of patients to determine their needs. Valuable information is required by patients about diagnosis, causes, treatment and social support.

5.4.3. Stage 2. Coping

Approach to coping are strategies that are put in place for use by patients to overcome the effects of the illness to prevent them from undergoing a lot of emotional and psychological distress. Coping with various cancer diseases is a vital health issue that should result in adjustments to the disease by sufferers (Mehrabi, Hajian, Simbar, Hoshyari & Zayeri. 2015: 1575–1583). Cameron (2003:159) and Brooks, Leventhal, Wolf, O'Connor, Morillo and Martynenko (2015) purport that directed processing strategies of coping with a cancer aimed at reducing distress when improperly used, have a high chance of interfering with the patients' ability to cope with the disease. In this study, patients failed to cope with a cancer diagnosis as they faced many challenges, particularly, caused by lack of information. The common sense model of self-regulation and the mental models approach emphasise the importance of information needed to shape individuals' personal understandings which should influence the decisions and actions of the patients.

Further finding made were that most patients diagnosed with cancer implemented avoidance strategies in which they resorted to unorthodox methods such as isolation, getting angry with relatives or caregivers and trying to find information on how to commit suicide. Some did not

want to talk about their illness as they thought their spouses were blaming themselves; consequently patients who resorted to avoidance coping, suffered distress.

5.4.4. Stage 3: Appraisal

Appraisal of symptoms begins from when detection of a bodily change is made and lasts to the time the patients finds a need to discuss symptoms with a health-care practitioner (Whitaker, Cromme, Winstanley, Renzi & Wardle, 2015). This is an important step in relation to achieving early presentation, early cancer diagnoses, and thereby better cancer outcomes (Scott, Walter, Webster, Sutton, Emery 2012: 45-65; Hiom, 2015:1–5). Efficiency of coping strategy refers to the extent to which a coping strategy would produce the desired positive effects, among patients, at the expected time after its implementation. The Common sense of illness self-regulation emphasises that illness representations should constantly be appraised and modified, however, high emotional distress about cancer diagnosis tends to influence this reappraisal process and cognitive processing strategies that are aimed in creating an accurate understanding of the health threat (Leventhal, Phillips & Burns, 2016:942; Leventhal , Leventhal & Contrada, 2007: 717). Shakeri, Kamangar, Ebrahimi, Aznab, Shakeri and Arman (2015: 298–304) contend that focusing on a patient's coping style, mainly on an emotion-focused coping style, is essential to improve patient's quality of life and that patients, possibly, should employ a more emotion-oriented coping style during cancer treatment and prior to discharge. Health staff and relatives of a cancer patients are expected to appraise patients on their current status and also advise them on what to do.

5.4.5. Emotional response to health threat

Emotional responses to symptoms have been regarded as having a paramount influence on behavioural responses among cancer patients (Whitaker, *et al.*, 2015). The most prevalent emotional responses in this study were fear, anxiety and depression, all parts of the Common sense illness self-regulation model. Fear is a common emotional response for any life-threatening situation among patients. In this study fear arose from two factors, namely, that of the envisaged patient experience during treatment and that of dying prematurely. The fear was due to the cancer itself, its treatment and side effects, such as pain, disability and change in appearance, being a social outcast, being unable to perform previous activities. Fear has several effects, some positive others negative. Positive effects of fear could cause patients to

seek for medical advice as soon as possible and get treated early. Negative effects of fear could lead to isolation, depression or attempted suicide.

On the issue of anxiety, Cameron (2003:160) argues that illness-related anxiety always influences the formation of illness representations, particularly perceived symptoms and consequences. Unlike fear, anxiety causes cancer patients to act promptly to seek treatment or find more about the disease; however, it may lead to denial and finally, fear. Studies which used the model show that cancer patients who were always worried about their illness usually had more difficulties in learning about cancer diagnosis, treatment and coping with it, even processing and retaining information provided by health professionals (Cameron, 2003:157; Leventhal, Phillips & Burns, 2016:935).

Patients in this study expressed depression about their cancer diagnosis and treatment as a result of poor coping strategies to stress, anger and fear. These findings support previous studies, for example, that of Howell, Bodnar-Deren, Balbierz, Loudon, Mora and Zlotnick (2014:57) which state that a relationship exists between greater perceived illness consequences and poor emotional adjustment which lead to psychological effects, such as depression and distress. Leventhal, Phillips and Burns (2016:935) also argue that interventions meant to assist patients to explore inconsistencies in their beliefs about cancer diagnosis should address all misinterpretations about cancer diagnosis in order for patients to feel confident about their ability to 'make sense' of their illness and help to promote positive emotional adjustment to life with cancer.

5.5. Limitations

Although this study was successfully conducted, the researcher was aware of the limitations that made the generalisation of findings to other districts in the same province impossible. The limitation was on the composition of the sample; some respondents had just been diagnosed with cancer while others had already been on treatment.

5.6. Recommendations

The following recommendations are being made regarding impact of cancer diagnosis:

Patients

- Should be provided with pre and post-test counselling during the taking of the cancer test to reduce psychological and emotional distress;
- Should be provided with valuable information about their diagnosis and management to stay up to date with their medical needs;
- To be advised to take medicines and have regular check-ups as prescribed to prevent complications and to avoid inclusion of indigenous health remedies;
- Need to communicate their needs and concerns always during consultation for appropriate referral;
 - Should be provided with financial assistance for self-care management and provision of nutritious food;
 - To be encouraged to have enough rest and exercise to alleviate distress.
 - Encouraged to join support groups; meeting with others living with cancer can be an opportunity to discuss common topics.

Nursing Practice

- Provide educational support to improve management of patients' physical changes and identify signs of depression and anxiety;
- Provide pamphlets with cancer information;
- Give continuous support at every visit to determine any social and psychological problems;
- Assist families, spouses, friends to have open communication and refer them for psychotherapy on managing relationships;
- Navigate the cancer journey with patients and relatives to increase understanding;
- Initiate support groups for families to share similar concerns, and to
- Refer patients in need to social workers for financial support and other forms of social support.

Family/ social support

- Assist families with information about cancer, cancer treatment and advise them on what side effects are expected and how they can be managed;
- Inform families on how meetings can be arranged for psychological support;
- Provide one-to-one support to determine how the family/spouse/ caregivers are coping;
- Encourage families to join support groups to assist them in supporting the patients and,
- For families who are unable to provide care to their relative, provide assistance by referring them to home-based carers/ community health care workers.

Policy makers

- Policy makers to put in place strategies and facilities that reduce the impact of cancer diagnosis on cancer patients by drafting suitable policies and guidelines that will support cancer patient at the time of diagnosis and during treatment.

Future research

- Future research should focus on qualitative approaches to obtain an in-depth knowledge of the impact of cancer diagnosis on patients diagnosed with cancer.

5.7. Conclusion remarks

In the Vhembe District, a number of people have been diagnosed with different types of cancers and are undergoing treatment in various hospitals or awaiting treatment. Cancer patients have different perceptions about the illness and have diverse health beliefs which impacts on how they cope with cancer, from the time of diagnosis to the time of therapy. The study was to assess and analyse the impact of cancer diagnosis among cancer patients in the Vhembe District of the Limpopo Province, South Africa; the results then would provide empirical evidence on the impact, solutions to help the cancer patients, especially those in rural settings, to deal with the psychological and emotional problems they undergo during the period between diagnoses and treatment. The study found that the impact of cancer diagnosis on patients was on emotional, physical, psychological, social and financial aspects.

REFERENCES

- Adler, N. E. E. K. (Eds.). (2008) *Cancer care for the whole patient: Meeting psychosocial health needs*. The National Academies Press: Washington, D.C.
- Ahadi, H., Delavar, H. & Rostami, A. M. (2013) *Comparing Coping Styles in Cancer Patients and Healthy Subjects*. 5th World Conference on Educational Sciences - WCES 2013. Science Direct. *Procedia-Social and Behavioral Sciences* 116 (2014) 3467-3470.
- Alifrangis, C., Koizia, L., Rozario, A., Rodney, S., Harrington, M., Somerville, C., Peplow, T. & Waxman, J. 2011. The experiences of cancer patients. *An International Journal of Medicine*. [Online] 104 (12). p. 1075–1081. Available from: <https://academic.oup.com/qjmed/article/104/12/1075/1546457> [Accessed: 30 January 2017]
- Alwan, N.A.S., Tawfeeq, F.N., Maallah, M.H., Sattar, S.A. & Saleh, W.A. (2017) The Stage of Breast Cancer at the Time of Diagnosis: Correlation with the Clinicopathological Findings among Iraqi Patients. *Journal of Neoplasms*. 2(3). p. 22-30.
- American Cancer Society (ACS). (2016) *Anxiety, Fear, and Depression Having cancer affects your emotional health*. Available from: <http://www.cancer.org/acs/groups/cid/documents/webcontent/002816-pdf.pdf> [Accessed: 27 January 2017]
- American Psychological Association (APA). (2014) *A brief series on the role of psychology in health care adult cancer*. Available from: <https://www.apa.org/health/briefs/adult-cancer.pdf> [Accessed: 15 February 2017]
- Andreu, Y., Galdon M. J, Dura, E., Martinez, P., Perez, S. & Murgui, S.A. 2012 Longitudinal study of psychosocial distress in breast cancer: prevalence and risk factors. *Psychological Health Journal*. 27. pp. 72–87.
- Angela, M., Stover, D.K. Mayer, H.M., Stephanie, B., Wheeler, J.C., Lyons, C & Bryce, B.R. (2015) Quality of Life Changes During the Pre- to Postdiagnosis Period and Treatment-Related Recovery Time in Older Women With Breast Cancer. *Cancer* [Online] 120(12). p.1881-1889. Available from: <http://onlinelibrary.wiley.com/doi/10.1002/cncr.28649/pdf> [Accessed: 15 March 2017].
- Ankem, K. (2006) Factors influencing information needs among cancer patients: A meta-analysis. *Library & Information Science Research*. [Online] 28(1). p. 7–23. Available from: <http://www.sciencedirect.com/science/article/pii/S0740818805001234> [Accessed: 15 March 2017].

- Annette, L., Julia, H. & Ganz, P. A. (2015) Life after Diagnosis and Treatment of Cancer in Adulthood Contributions From Psychosocial Oncology Research. *American Psychological Association*. [Online]. 70(2) .p.159–174. Available from: <http://dx.doi.org/10.1037/a0037875>. <https://www.apa.org/pubs/journals/releases/amp-a0037875.pdf> [Accessed: 15 March 2017].
- Aquina, C.T., Mohile, S.G., Tejani, M.A., Becerra, A.Z., Xu, Z., Hensley, B.J., Arsalani-Zadeh, R., Boscoe, F.P., Schymura, M.J., Noyes, K., Monson, J.R.T. & Fleming, F.J. (2017) The impact of age on complications, survival, and cause of death following colon cancer surgery. *British Journal of Cancer*. [Online] 116. p. 89–397. Available from: <https://www.nature.com/articles/bjc2016421> [Accessed: 17th March 2017]
- Babbie, E. (2007) *The practice of Social Research 11th Edition*. London: Thomson Learning Inc.
- Babbie, E. (2014) *The basics of social research*. (6th Ed). Wadsworth, Cengage Learning, USA
- Bain, G. M., Lian, C. W. & Thon, C. C. (2014) Breaking bad news of cancer diagnosis – Perception of the cancer patients in a rural community in Malaysia. *South Asian. Journal of Cancer*. 3(2). p. 116–121.
- Bainbridge, S., Cake, R., Meredith, M., Furness, P. & Gordon, B. (2016) “Testing times to Come? An evaluation of pathology capacity across the UK November 2016.” *Cancer Research UK Report*. Available from: https://www.cancerresearchuk.org/sites/default/files/testing_times_to_come_nov_16_cruk.pdf [Accessed: 14 March 2017].
- Barton, K. M. (2016) Bankruptcy linked to early mortality in patients with cancer. *Cancer Association : A Cancer Journal for Clinicians*. 66(4). p. 267-8.
- Bernard, H.R. (2011) *Research methods in anthropology*. (5th ed). Alta Mira Press.
- Black, G., Sheringham, J., Spencer-Hughes, V., Ridge, M., Lyons, M., Williams, C., Fulop, N. & Pritchard-Jones, K. (2015) *Patients’ Experiences of Cancer Diagnosis as a Result of an Emergency Presentation: A Qualitative Study*. Published: PLoS One 10: e0135027, doi:10.1371/journal.pone.0135027
- Bovaird, J A. & Kevin, A. K. (2010) *Sequential Design*. In *Encyclopedia of Research Design*. Neil J. Salkind, ed. Thousand Oaks, CA: Sage Publication.
- Broadbent, E., Ellis, C. J., Thomas, J., Gamble, G. & Petrie, K. J. (2009) Further development of an illness perception intervention for myocardial infarction patients: A randomized controlled trial. *Journal of Psychosomatic Research*. [Online] 67(1). p. 17-23.

Available from: <http://dx.doi.org/10.1016/j.jpsychores.2008.12.001> [Accessed: 14 January 2017].

Broadbent, E., Petrie, J. K., Main, J. & Weinman, J. (2006) The Brief Illness Perception Questionnaire. *Journal of Psychosomatic Research*. [Online] 60. P. 631–637. Available from: <http://www.uib.no/ipq/pdf/BIPQ.pdf> [Accessed: 14 January 2017].

Brooks, T.L., Leventhal, H., Wolf, M.S., O'Connor, R., Morillo, J., Martynenko, M., Wisnivesky, J.P., & Federman, A.D. (2015) Strategies used by older adults with asthma for adherence to inhaled corticosteroids. *Journal of General Internal Medicine*. 29. p. 1506-1512.

Bryman, A. (2008) *Social research methods*, (4th ed), Oxford, Oxford University Press.

Bryman, A. (2012) *Social research methods* (5th ed.). Oxford: Oxford University Press.

Burns, N. & Grove, S.K. (2005) *The practice of Nursing Research: Conduct /critique and utilization*. (5th ed). Philadelphia: Saunders.

Business Dictionary. (2013) *Mortality* [Online] Available from: <http://www.businessdictionary.com/definition/mortality.html> [Accessed: 10th June 2017]

Cameron, L. D. (2003) Anxiety, cognition, and responses to health threats, in L. D. Cameron & H. Leventhal (Eds.), *The self-regulation of health and illness behaviour* (157-183). London: Routledge.

Campbell, K.R. (2015) *Doctors sometimes don't inform patients of bad news. Why?* [Online] Available from: <http://www.kevinmd.com/blog/2015/04/doctors-sometimes-dont-inform-patients-of-bad-news-why.html> [Accessed: 10th June 2017]

Canadian Association of Psychosocial Oncology. (2012) “*The Emotional Facts of Life with Cancer The Emotional Facts of Life with Cancer: A Guide To Counselling And Support For Patients, Families And Friends*”. [Online] Available from: <http://capo.ca/docs/bookletREVISED.pdf> [Accessed: 27th May 2017]

Cancer Australia. (2017) *Impact of diagnosis on family and friends*. [Online] Available from: <https://canceraustralia.gov.au/affected-cancer/living-cancer/managing-emotional-changes/impact-diagnosis-family-and-friends> [Accessed: 27th May 2017]

Cancer Council. (2016) *The emotional impact of cancer*. [Online] Available from: <https://www.cancervic.org.au/cancer-information/advanced-cancer/emotional-impact> [Accessed: 27th May 2017]

Cancer Institute NSW. (2017) *What are the different stages of cancer?* [Online] Available from: <https://www.cancerinstitute.org.au/understanding-cancer/what-are-the-different-stages-of-cancer> [Accessed: 10th March 2017]

- Cancer Research U.K. (2015) *Family history and inherited cancer genes*. [Online] Available from: <http://www.cancerresearchuk.org/about-cancer/causes-of-cancer/inherited-cancer-genes-and-increased-cancer-risk/family-history-and-inherited-cancer-genes> [Accessed: 12th March 2017]
- Cancer.Net. (2015) Stages of cancer. [Online] Available from: <http://www.cancer.net/navigating-cancer-care/diagnosing-cancer/stages-cancer> [Accessed: 12th March 2017]
- Ceber, E., Turk, M. & Ciceklioglu, M. (2010) The effects of an educational program on knowledge of breast cancer, early detection practices and health beliefs of nurses and midwives. *Journal of Clinical Nursing*. 19. p. 2363-2371.
- Check, J. & Schutt, R.K. (2011) Survey research. In: J. Check, R. K. Schutt. (eds). *Research methods in education*. Thousand Oaks, CA: Sage Publications.
- Cheng, S-Y., Lai, Y-H., Chen S-C., Shun, S-C., Liao, Y-M., Tu, S-H. (2011) Chen, C-M. Changes in quality of life among newly diagnosed breast cancer patients in Taiwan. *Journal of Clinical Nursing*. 21. p. 70–79.
- Cheung, Y. W., Renfro, L. A., de Gramont, D. K. A., Saltz, L. B., Grothey, A., Alberts, S. R., Andre, T., Guthrie, K. A., Labianca, R., Francini, G., Seitz, J. F., O’Callaghan, C., Twelves, C., Van Cutsem, E., Haller, D. G., Yothers, G. & Sargent, G. J. (2015) Determinants of Early Mortality Among Patients With Colon Cancer Who Participated in Clinical Trials From the Adjuvant Colon Cancer Endpoints Database. *Journal of Clinical Oncology*. 34. p. 1182-1189.
- Chiou, S. J., Lin, W. & Hsieh, C. J. (2016) *Assessment of duration until initial treatment and its determining factors among newly diagnosed oral cancer patients: A population-based retrospective cohort study*. *Medicine (Baltimore)*. 2016 Dec; 95(50): e5632. [Online] Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5268053/> [Accessed: 17th March 2017]
- Christiansen, A.H., Lipczak, H. & Knudsen, J.L. (2015) Attention to cancer patients' safety after primary treatment is needed. *Danish Medical Journal*. [Online] 62(6). p. A5090. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/26036885> [Accessed: 2nd December 2016]
- Cline, A. (2017) What is Epistemology? Philosophy of Truth, Knowledge and Belief. [Online] Available from: <https://www.thoughtco.com/what-is-epistemology-250526> [Accessed: 11th March 2017]
- Cohen, L., Manion, L. & Morrisom, K. (2011) *Research Methods in Education*. Oxford: Routledge.

- Collis, J. & Hussey, R. (2009) *Business Research: A practical guide for undergraduate and postgraduate students*, 3rd edition, New York, Palgrave Macmillan.
- Costa, D. S. J., Mercieca-Bebber, R., Rutherford, C, Gabb, L. & King, M. T. (2016) *The Impact of Cancer on Psychological and Social Outcomes*. [Online] Available from: <http://onlinelibrary.wiley.com/doi/10.1111/ap.12165/abstract> [Accessed: 12th March 2017]
- Creighton, H., Beach, B. & Bamford, S. M. (2015) *Rethinking Cancer: The Big ‘C’: Quantifying the social and economic impact*. London, International Longevity Centre.
- Creswell, J. W. (2014) *Qualitative inquiry & research design: choosing among five approaches* (4th ed.). Thousand Oaks, CA: Sage
- Creswell, J. W. (2014) *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). London: Sage Publications Ltd.
- Crotty, M. (2003) *The Foundations of Social Research Process: Meaning and Perspective in the Research Process*. Sage Publications Ltd, Thousand Oaks.
- Curtis, R., Groarke, A., McSharry, J. & Kerin, M. (2013) Experience of Breast Cancer: Burden, Benefit, or Both? *Cancer Nurs.* 10;8(7). p. 68753.
- Daher, M. (2012) Cultural beliefs and values in cancer patients. *Annals of Oncology.* 23. p. 66–69.
- Dantas, T.S., de Barros Silva, P.G. & Sousa, E.F. (2016) Influence of educational level, stage, and histological type on survival of oral cancer in a Brazilian population: a retrospective study of 10 years observation. *Medicine.* 95(3). p. e2314.
- Davis, J.L., Buchanan, K.L., Katz, R.V. & Green, L.B. (2012) Gender differences in cancer screening beliefs, behaviours, and willingness to participate: Implications for health promotion. *American Journal of Men’s Health.* 6(3). p. 211–217.
- Davis, K. 2011. *Studying cancer from the inside out: What the epigenetic code can tell doctors about disease*. [Online] Available from: <https://www.genome.gov/27562123/2015-news-feature-studying-cancer-from-the-inside-out-what-the-epigenetic-code-can-tell-doctors-about-disease/> [Accessed: 12th March 2017]
- de Sousa Barros, A. E., Conde, C. C., Lemos, T. M. R., Kunz, J. A. & Ferreira, M. M. L. (2018) Feelings Experienced By Women When Receiving The Diagnosis Of Breast Cancer. *Journal of Nursing UFPE.* 12(1). p. 102-111.
- Degu, G. & Yigzaw, T. (2006) *Research Methodology: Lecture Notes. For Health Science Students*. Ethiopia Public Health Training Initiative. USAID
- Demaerschalk, B. M., Kleindorfer, D. O., Adeoye, O. M., Demchuk, A. M., Fugate, J. E., Grotta, J. C., Khalessi, A. A., Levy, E.I., Palesch, Y.Y., Prabhakaran., S., Saposnik, G.,

- Saver, J. L. & Smith, E. E. (2016) Scientific Rationale for the Inclusion and Exclusion Criteria for Intravenous Alteplase in Acute Ischemic Stroke A Statement for Healthcare Professionals from the American Heart Association/American Stroke Association. *Stroke*. 47(2). p. 581-641.
- Denzin, N. K. & Lincoln, Y. (2008) *Collecting and interpreting qualitative material*,. California: SAGE Publications.
- Din, N. U., Ukoumunne, O. C., Rubin, G., Hamilton, W., Carter, B., Sal Stapley, S. & Neal, R. D. (2015) Age and Gender Variations in Cancer Diagnostic Intervals in 15 Cancers: Analysis of Data from the UK Clinical Practice Research Datalink. *PLoS One*. 10(5). e0127717.
- Dominik Maślach, Michalina Krzyżak, Andrzej Szpak, Alfred Owoc, Magdalena Bielska-Lasota. (2013) Waiting time for treatment of women with breast cancer in Podlaskie Voivodeship (Poland) in view of place of residence. A population study. *Annals of Agricultural and Environmental Medicine*. 20(1). p. 161-166.
- Dooley, L. M. (2002) Case Study Research and Theory Building. *Advances in Developing Human Resources*. 4(3). p. 136–140.
- Drageset, S., Lindstrom, T.C. & Giske, T. (2016) Women’s experiences of social support during the first year following primary breast cancer surgery. *Scand J Caring Sci*. 30. p. 340–48.
- Drageset, S., Lindstrom, T.C., Giske, T. & Underlid, K. (2012) “The Support I Need”: women’s experiences of social support after having received breast cancer diagnosis and awaiting surgery. *Cancer Nursing*. 35. p. E39–47.
- Drost, E. A. (2011) Validity and Reliability in Social Science Research. *Education Research and Perspectives*. 38(1). p. 105-123.
- Duci, V. & Tahsini, I. (2012) Perceived social support and coping styles as moderators for levels of anxiety, depression and quality of life in cancer caregivers: a literature review. *European Science Journal*. 8. p160–175.
- Elit, L. (2015) Wait times from diagnosis to treatment in cancer. *J Gynecol Oncol*. 26(4). p. 246–248.
- Eriksson, H., Lyth, J., Mansson-Brahmea, E., Frohm-Milssonb, M ., Ingvare, C., Lindholm, C., Naredig, P., Stierner, U., Wagenius, G., Carstensen, J. & Hanssona, J. (2013). Low level of education is associated with later stage at diagnosis and reduced survival in cutaneous malignant melanoma: A nationwide population-based study in Sweden. *European Journal of Cancer*. 49 (12). p. 2705-2716.

- Ewing, G., Ngwenya, N., Benson, J., Gilligan, D., Bailey, S., Seymour, J. & Farquhar, M. (2016) Sharing news of a lung cancer diagnosis with adult family members and friends: A qualitative study to inform a supportive intervention. *Patient Educational. Counselling*. 99. p. 378–385.
- Farhat, F., Othman, A., el Baba, G & Kattan, J. (2015). Revealing a cancer diagnosis to patients: attitudes of patients, families, friends, nurses, and physicians in Lebanon—results of a cross-sectional study. *Current Oncology Report*. 22(4). p. e264–e272.
- Faux, J. (2010) Pre-Testing Survey Instruments. *Global Review of Accounting and Finance*. 1(1). p. 100 – 111.
- Fellows, R. (2010) New research paradigms in the built environment. *Construction Innovation: Information, Process, Management*. 10(1). p. 5-13.
- Flick, U. (2011) *Introducing research methodology: A beginner's guide to doing a research project*. London: Sage.
- Fouka, G. & Mantzorou, M. What are the Major Ethical Issues in Conducting Research? Is there a Conflict between the Research Ethics and the Nature of Nursing? *Health Science Journal* . 5(11). p. 1-14.
- Foxall, M.J. & Gaston-Johansson, F. 1996. Burden and health outcomes of family caregivers of hospitalized bone marrow transplant patients. *Journal of Advanced Nursing*. 24. 915–923.
- Gabriel, D. (2013). Inductive and deductive approaches to research. [Online] Available at: <http://deborahgabriel.com/2013/03/17/inductive-and-deductive-approaches-to-research/> [Accessed 26th October 2017].
- Given, B., Given, C. & Sherwood, P. 2012. The challenge of quality cancer care for family caregivers. *Semin Oncol Nurs*. 28. p. 205–212.
- Glińska, J., Adamska, E., Lewandowska, M. & Kobos, J. 2012. Evaluation of the psychological state of patients with advanced cancer and the impact of support on their emotional condition. *Contemporary Oncology*. 16(6). p. 563–568.
- Glinska, J., Adamska, E., Lewandowska, M., *et al.* (2012) Evaluation of the psychological state of patients with advanced cancer and the impact of support on their emotional condition. *Contemporary Oncology (Poznan, Poland)*. 16(6). p. 563–568.
- Goldzweig, G., Merims, S., Ganon, R., Peretz, T. & Baider, L. (2012) Coping and distress among spouse caregivers to older patients with cancer: an intricate path. *Journal of Geriatric Oncology*. 3(4). p. 376–385
- Gorard, S. (2013) *Research Design: Creating Robust Approaches for the Social Sciences*. Thousand Oaks, CA: Sage.

- Gorman, M. L. (2016). The Psychosocial Impact of Cancer on the Individual, Family, and Society [Online] Available at: https://www.ons.org/sites/default/files/publication_pdfs/Sample%20Chapter%200554%20PsyNsgCare2nd.pdf [Accessed 26th October 2017].
- Gray, D. E. (2009) *Doing research in the real world*. London, SAGE Publication L.t.d.
- Gregurek, R. Braš, M., Đorđević, V., Ratković, A. & Brajković, L. (2010). Psychological problems of patients with cancer. *Psychiatria Danubina*. 22(2). p. 227–230.
- Greszta, E. & Siemińska, M. J. (2011) Patient-Perceived Changes in the System of Values After Cancer Diagnosis. *J Clin Psychol Med Settings*. 18(1). p. 55–64.
- Guba, E.G. & Lincoln, Y.S. (1989) Fourth generation evaluation. Newbury Park, CA and London: Sage Publications.
- Gürdal, S.Ö.1., Saraçoğlu, G.V., Oran, E.Ş., Yankol, Y. & Soybir, G.R. (2017) The Effects of Educational Level on Breast Cancer Awareness: A Cross-Sectional Study in Turkey. *Asian Pac J Cancer Prev*. 13(1). p. 295-300.
- Hajian, S., Mehrabi, E., Simbar, M. & Houshyari, M. (2017) Coping Strategies and Experiences in Women with a Primary Breast Cancer Diagnosis. *Asian Pacific Journal of Cancer Preview*. 18(1). p. 215–224. doi: 10.22034/APJCP.2017.18.1.215.
- Ham, C., Dixon, A. & Brooke, B. 2012. Transforming the delivery of health and social care. The case for fundamental change. London, The King's Fund. [Online] Available at: https://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/transforming-the-delivery-of-health-and-social-care-the-kings-fund-sep-2012.pdf [Accessed 26th October 2017].
- Hamilton, J.B., Worthy, V.C., Moore, A.D., Best, N.C., Stewart, J.M. & Song, M. (2015) *Messages of Hope: Helping Family Members to Overcome Fears and Fatalistic Attitudes Toward Cancer*. American Association for Cancer Education. [Online] Available at: https://www.researchgate.net/profile/Jill_Hamilton3/publication/281338301_Messages_of_Hope_Helping_Family_Members_to_Overcome_Fears_and_Fatalistic_Attitudes_Toward_Cancer/links/57368e7a08aea45ee83cb647/Messages-of-Hope-Helping-Family-Members-to-Overcome-Fears-and-Fatalistic-Attitudes-Toward-Cancer.pdf [Accessed 19th January 2017]
- Hanel, S. (2016) Life Isn't the Same: How Cancer Changes You. [Online] Available at: <https://www.roswellpark.org/cancertalk/201612/life-isnt-same-how-cancer-changes-you> [Accessed 23rd May 2017].

- Hanel, S. 2016. Life Isn't the Same: How Cancer Changes You Scott Hanel. [Online] Available at: <https://www.roswellpark.org/cancertalk/201612/life-isnt-same-how-cancer-changes-you> [Accessed 23rd May 2017].
- Harrington, E. S. & Smith, J. T. (2008) The Role of Chemotherapy at the End of Life “When Is Enough, Enough?” [Online] Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3099412/> [Accessed 23rd May 2017].
- Heale, R. & Twycross, A. (2013) Validity and reliability in quantitative studies. *Evidence-Based Nursing*. 18(3) .p. 66-67.
- Hayes, V. M. & Bornman, R. M. S. 2017. Prostate Cancer in Southern Africa: Does Africa Hold Untapped Potential to Add Value to the Current Understanding of a Common Disease? *Journal of Global Society of Clinical Oncology*. An American Society of Clinical Oncology Journal 3 (4): 118-126 <http://ascopubs.org/doi/full/10.1200/JGO.2016.008862>
- Health24 (2017). South Africa: 78% increase in cancer by 2030. [Online] Available at: <http://www.health24.com/Medical/Cancer/Facts-and-figures/South-Africa-78-increase-in-cancer-by-2030-20120721> [Accessed 23rd May 2017].
- Heck, K.K. (2008) *Patient's Perception of the Helpfulness of Education Materials for Breast Cancer*. A thesis submitted in partial fulfilment of the requirements of the Montana State University for the degree of Masters of Nursing. Montana State University Bozeman, Montana.
- Heins, M.J., Korevaar, J.C., Rijken, P.M. & Schellevis, F.G. (2013) For which health problems do cancer survivors visit their general practitioner? *European Journal of Cancer*. 49(1). p. 211–218.
- Hejmadi, M. 2010. *Introduction to Cancer Biology*. Ventures publishing ApS, London
- Henderson, W. (2017) 10 Common Emotional Responses to a Cancer Diagnosis [Online] Available at: <https://breastcancer-news.com/2017/05/08/10-common-emotional-responses-cancer-diagnosis/> [Accessed 23rd May 2017].
- Hiom, S.C. (2015) Diagnosing cancer earlier: reviewing the evidence for improving cancer survival. *British Journal of Cancer* .112. S1–S5.
- Hlatshaneni, S. (2016) Cancer deaths increase in South Africa. The Citizen [Online] Available at: <https://citizen.co.za/lifestyle/1194607/cancer-deaths-increase-in-sa/> [Accessed 15th Januray 2017].
- Hoffman, M.A., Lent, R.W. & Raque-Bogdan, T. L. (2013) A Social Cognitive Perspective on Coping with Cancer Theory, Research, and Intervention. *Counselling Psychology*. 41(2). P. 240-267.

Hooper, G.M. (2013) *Influence of Coping Styles On Emotional State, Illness Perception, And Information Sources Of Men With Prostate Cancer*. A Thesis Submitted in partial fulfilment of the Requirements of University of Kentucky for the degree of Doctor of Philosophy in the College of Nursing. University of Kentucky, U.S.A.

Hopman, P. & Rijken, M. (2015) Illness perceptions of cancer patients: relationships with illness characteristics and coping. *Psycho-Oncology*. 24(1). p. 11-18.

Howell, E. A., Bodnar-Deren, S., Balbierz, A., Loudon, H., Mora, P. A., Zlotnick, C. & Leventhal, H. (2014) An intervention to reduce postpartum depressive symptoms: a randomized controlled trial. *Archives of Women's Mental Health*. 17. p. 57-63.

Howley, E. K. (2017) The Emotional Impact of Breast Cancer. [Online] Available at: <https://health.usnews.com/health-care/patient-advice/articles/2017-04-27/the-emotional-impact-of-breast-cancer> [Accessed 15th January 2017]

Hox, J. J., & Boeije, H. R. (2005) Data collection, primary vs. secondary. *Encyclopaedia of social measurement*. 1. p. 593-599.

Hughes ,S., Jaremka, L.M., Alfano, C.M., Glaser, R., Povoski, S.P., Lipari, A.M., Agnese, D.M., Farrar, W.B., Yee, L.D., Carson, W.E., Malarkey, W.B. & Kiecolt-Glaser, J.K. Social support predicts inflammation, pain, and depressive symptoms: longitudinal relationships among breast cancer survivors. *Psychoneuroendocrinology*. 42. p. 38-44.

Hung-The, K., Stephen, L., Buka, K.T., Kelsey, D.F. & Gruber, B.P. (2010) *The Correlation between Rates of Cancer and Autism: An Exploratory Ecological Investigation*. [Online] 5(2). Available at: <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0009372> [Accessed 15th Januray 2017]

Husson, O., Denollet, J., Oerlemans,S. & Mols, F. (2013) Satisfaction with information provision in cancer patients and the moderating effect of Type D personality. *Psych oncology*. 22(9). p. 2124-32.

Institut Numerique. (2012) *Research Methodology*. [Online] Available at: <http://www.institut-numerique.org/chapter-3-research-methodology-4ffbd6e5e3391> [Accessed 15th January 2017]

International Agency for Research on Cancer (IARC) (2012) *World Cancer Factsheet: World cancer burden* [Online] Available at: <http://www.cansa.org.za/files/2015/10/World-Cancer-Fact-Sheet-Cancer-Research-UK.pdf> [Accessed 15th January 2017]

Irish Cancer Society 2014. The Medical & Financial Impact of a Cancer Diagnosis. [Online] Available at: <https://www.cancer.ie/sites/default/files/content->

attachments/expert_panel_on_medical_card_eligibility_submission.pdf [Accessed 30th January 2017]

Jacobsen, P. B., & Andrykowski, M. A. (2015) Tertiary prevention in cancer care: Understanding and addressing the psychological dimensions of cancer during the active treatment period. *American Psychologist*. 70. p. 134–145.

Jacoby, B. 2017. The Psychological Effects of A Cancer Diagnosis. [Online] Available at: https://www.huffingtonpost.com/entry/the-psychological-effects-of-a-cancer-diagnosis_us_58b21998e4b02f3f81e4485c [Accessed 27th January 2017]

Jones, D.B. (2011) *A comprehensive Medical Terminology*. Fifth Edition, Boston, Cengage Learning.

Jonsbu, E., Martinsen, E. W., Morken, G., Moum, T., & Dammen, T. (2012). Illness perception among patients with chest pain and palpitations before and after negative cardiac evaluation. *BioPsychoSocial Medicine*. [Online] 6. p. 19. Available at: <http://www.bpsmedicine.com/content/6/1/1> [Accessed 27th January 2017]

Karlsen, R.V., Frederiksen, K., Larsen, M. B., von Heymann-Horan, A.B., Appel, C.W., Christensen, J., Tjønneland, A., Ross, L., Johansen, C. & Bidstru, P. E. (2015) The impact of a breast cancer diagnosis on health-related quality of life. A prospective comparison among middle-aged to elderly women with and without breast cancer. *Journal Acta Oncologica*. 55(6). p. 720-727.

Kashani, L. F., Vaziri, S., Akbari, M. E., Jamshidifar, Z. & Sanaei, H. (2014) Stress Coping Skills Training and Distress in Women with Breast Cancer. *Procedia - Social and Behavioural Sciences*. 159. p. 192–196.

Katavić, S.S., Tanackovic, S.F. & Badurina, B. (2015) Illness perception and information behaviour of patients with rare chronic diseases. *Information Research*. 21(1). [Online] Available at: <https://files.eric.ed.gov/fulltext/EJ1094564.pdf> [Accessed 27th January 2017]

Katz, A. (2012) *Prostate Cancer and the Man You Love: Supporting and Caring for Your Partner*. Plymouth, UK. Rowman & Littlefield Publishers Inc.

Khalili, N., Farajzadegan, Z., Mokarian, F. & Bahrami, F. (2013) Coping strategies, quality of life and pain in women with breast cancer. *Iran J Nurs Midwifery Res*. 18(2). p. 105–111.

Kieft, R. A. M. M., de Brouwer, B. B. J. M., Francke, A. L. & Delnoij, D. M. J. (2014) How nurses and their work environment affect patient experiences of the quality of care: a qualitative study. *BMC Health Services Research*. (14):249. DOI: 10.1186/1472-6963-14-249

- Kiliçkaya, C. & Karakaş, S. A. (2015) The Effect of Illness Perception on Loneliness and Coping with Stress in Patients with Chronic Obstructive Pulmonary Disease (COPD). *International Journal of Caring Sciences*. 9(2). p. 481-488.
- Kothari, C. R. (2004) *Research methodology: methods and techniques*. New Delhi: New Age International.
- Kowalski, C., Lee, S. D., Ansmann, L., Simone Wesselmann, S. & Pfaff, H. (2014). *Meeting patients' health information needs in breast cancer center hospitals - a multilevel analysis*. Medical Care Health Services Research BMC series. DOI: 10.1186/s12913-014-0601-6. [Online] Available at: <http://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-014-0601-6> [Accessed 27th January 2017]
- Lashkarizadeh, M.A.J., Jahanbakhsh, F., Samareh, M.F, *et al.* (2012) Views of cancer patients on revealing diagnosis and information to them. *Journal of Medical Ethics History and Medicine*. 5(4). p. 65–74.
- Laxmi, S. & Khan, J. A. (2013). Does the cancer patient want to know? Results from a study in an Indian tertiary cancer center. *South Asian Journal of Cancer*. 2(2). p. 57–61. doi: 10.4103/2278-330X.110487
- Leedy, P. D. & Jeanne, E. O. (2013). *Practical Research: Planning and Design*. Tenth edition. Boston, MA: Pearson.
- Leventhal, H., Leventhal, E. A. & Contrada, R.J. (2007) Self-regulation, health, and behavior: A perceptual-cognitive approach. *Psychology and Health*. 13. p. 717-733.
- Leventhal, H., Meyer, D., & Nerenz, D. R. (1980). The common-sense model of illness danger. In S. Rachman (Ed.), *Contributions to medical psychology* (Vol. 2, pp. 7–30). New York, NY: Pergamon.
- Leventhal, H, Phillips, L. & Burns, E. (2016) The Common-Sense Model of Self-Regulation (CSM): a dynamic framework for understanding illness self-management. *Journal of Behavioural Medicine*. 39(6). p. 935-946.
- Levit, L, Balogh, E. & Nass, S. (2013) *Delivering High-Quality Cancer Care: Charting a New Course for a System in Crisis*. Washington (DC), National Academies Press (US)
- Lim, S.M, Kim, H.C. & Lee, S. (2013) Psychosocial impact of cancer patients on their family members. *Cancer Res. Treat.* 45. p. 226–233.
- Linda, E,L, Ferris, F.D, von Gunten, C.F. & Von Roenn, J.H. (2011) *Communicating Diagnosis and Prognosis to Patients With Cancer: Guidance for Healthcare Professionals*. [Online] Available at: <https://www.medscape.com/viewarticle/73503> [Accessed 27th January 2017]

- Llewellyn, C.D, McGurk, M. & Weinman, J. (2007) Illness and treatment beliefs in head and neck cancer: is Leventhal's common sense model a useful framework for determining changes in outcome over time? *Journal Psychosomatic Research*. 63. p. 17–26.
- Locklear, M. T. (2012) A Descriptive, Survey Research Study Of The Student Characteristics Influencing The Four Theoretical Sources Of Mathematical Self-Efficacy Of College Freshmen. [Online] Available at: https://uknowledge.uky.edu/cgi/viewcontent.cgi?referer=https://www.google.co.za/&httpsredir=1&article=1000&context=stem_etds [Accessed 27th January 2017]
- Lodico, M.G, Spaulding, D.T. & Voegtler, G.H. (2010) *Methods in Educational Research: from theory to practice*. (2nd edition). Wiley.
- Ludmila, M. & Flores, L.M. (2009) *Cancer Biology*. University of Massachusetts, Massachusetts
- Macmillan Cancer Support. (2016) *Cancer and then now: Diagnosis, treatment and aftercare from 1970–2016*. [Online] Available at: <https://www.macmillan.org.uk/documents/campaigns/cancer-then-now-report-final-online.pdf> [Accessed 27th January 2017]
- Mai, P.L, Wideroff, L, Greene, M.H. & Graubard, B.I. (2010). Prevalence of Family History of Breast, Colorectal, Prostate, and Lung Cancer in a Population-Based Study. *Public Health Genomics*. 13. p. 495–503. DOI: 10.1159/000294469.
- Maree, J. E, Parker, S, Kaplan, L, & Oosthuizen, J. (2015) The information needs of South African parents of children with cancer. *Journal of Pediatric Oncology Nursing*. 33. p. 8–17.
- Marshall, C. & Rossmann, G. B. (2006) *Designing Qualitative Research* (4th ed) London.: SAGE Publications.
- Massyn, N, English, E, McCracken, P, Ndlovu, A.G, Bradshaw, D. & Groewald, P. (2015) *Disease profile for Vhembe Health District, Limpopo*. Durban, Health Systems Trust.
- Mathews, M, West, R., & Buehler, S. 2009. How important are out-of-pocket costs to rural patients' cancer care decisions? *Cancer Journal of Rural Medicine*. 14(2). p. 145-169.
- May, T. (2011) *Social research: Issues, methods and research*. London: McGraw-Hill International.
- McAndrew, L. M., Musumeci-Szabo, T.J, Mora, A.P, Vileikyte, L, Burns, E, Halm, E. A., Leventhal, E.A. & Leventhal, H. (2008) Using the common sense model to design interventions for the prevention and management of chronic illness threats: From description to process. *British Journal of Health Psychology*. 13. p. 195–204.

- McPhail, S., Johnson, S., Greenberg, D., Peake, M. & Rous, B. (2015) Stage at diagnosis and early mortality from cancer in England. *British Journal of Cancer*. [Online] 1. p. S108-15: 49. DOI: 10.1038/bjc.2015.49. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/25734389> [Accessed 27th January 2017]
- Mehrabi, E., Hajian, S., Simbar, M., Hoshiyari, M. & Zayeri, F. (2015) Coping response following a diagnosis of breast cancer: A systematic review. *Electron Physician*. 7(8). p. 1575–1583.
- Mekuria, A. B., Erku, D. A. & Belachew, S. A. (2016) Preferred information sources and needs of cancer patients on disease symptoms and management: a cross-sectional study. *Patient Prefer Adherence*. 10. p. 1991–1997.
- Merriam, S.B. (2009) *Qualitative research: A guide to design and implementation*. San Francisco: Jossey Boss. Wiley Imprints.
- Mertz, B.G., Bistrup, P.E., Johansen, C., Dalton, S.O., Deltour, L. & Kehlet, H. (2012) Psychological distress among women with newly diagnosed breast cancer. *European Journal of Oncology Nursing*. 16(4). p. 439-443.
- Mistry, A., Wilson, S., Priestman, T., Damery, S. & Haque, M. S. 2010. How do the information needs of cancer patients differ at different stages of the cancer journey? A cross-sectional survey. *Journal of the Royal Society of Medicine Short Reports*. [Online] 1(4). p. 30. DOI 10.1258/shorts.2010.010032. <http://shr.sagepub.com/content/1/4/30.full.pdf>
- Mohieldin, A., Eldali, A. & Aljubran A. (2016) Knowledge, Perception, and Attitudes of Cancer Patients Towards Cancer and Cancer Care: Local Perspective from Saudi Arabia. [Abstract] *Journal of Cancer Education*. 2016 Jan 23. DOI:10.1007/s13187-015-0973-2 Available at: <http://www.ncbi.nlm.nih.gov/pubmed/26803820> [Accessed 27th January 2017]
- Morgan, K., Villiers-Tuthill, A., Barker, M. & McGee, H. (2014) The contribution of illness perception to psychological distress in heart failure patients. *BMC Psychol*. 2. p. 50. doi: 10.1186/s40359-014-0050-3
- Morgan, M. A., Small, B. J., Donovan, K. A., Overcash, J. & McMillan, S. (2012) Cancer Patients with Pain: The Spouse/Partner Relationship and Quality of Life. *Contemporary Oncology*. 16(6). p. 563–568. doi: 10.5114/wo.2012.32491.
- Mosby. (2013) *Mosby's Pocket Dictionary of Medicine, Nursing & Health Professions*, 7th Edition [Online] Available at: <https://www.elsevier.com/books/mosbys-pocket-dictionary-of-medicine-nursing-and-health-professions/mosby/978-0-323-08855-8> [Accessed 27th January 2017]

- Moser, R.P., Arndt, J., Han, P. K., Waters, E. A., Amsellem, M. & Hesse, B. W. (2013) Perceptions of cancer as a death sentence: Prevalence and consequences. *Journal of Health Psychology*. 19(12). p. 1518–1524. doi: 10.1177/1359105313494924
- Mosher, C.E., Jaynes, H.A., Hanna, N. & Ostroff, J.S. (2013) Distressed family caregivers of lung cancer patients: An examination of psychosocial and practical challenges. *Support Care Cancer*. 21. p. 431–437.
- Moss-Morris, R., Weinman, J., Petrie, K.J., Horne, R., Cameron, L.D. & Buick, D. (2002) The Revised Illness Perception Questionnaire (IPQ-R). *Psychology Health*. 17. p. 1–16
- Mouton, J. (2009) *Understanding social research*. Van Schaik Publishers, Pretoria
- Muhammad, Y. (2016) *Research Design – Types of Research Design*. [Online] Available at: <https://scholarshipfellow.com/research-design-types-research-design/> [Accessed 27th January 2017]
- Myers, M. D. (2009) *Qualitative Research in Business & Management*. Sage Publications, London.
- Myers, M. D. (2011) *Qualitative Research in Information Systems*. *MIS Quarterly*. [Online] 21(2). P. 241-242. Available at: http://www.misq.org/discovery/MISQD_isworld [Accessed 27th June 2017].
- Narayanan, V., Bista, B. & Koshy, C. (2010) ‘BREAKS’ Protocol for Breaking Bad News. *Indian Journal of Palliative Care*. 16(2). p. 61–65. doi: 10.4103/0973-1075.68401
- National Breast Cancer Foundation (NBCF). (2014) ANNUAL REPORT. [Online] Available at: <http://nbcf.org.au/wp-content/uploads/2015/12/NBCF-2014-15-Annual-Report.pdf> [Accessed 27th June 2017].
- National Cancer Institute. (2018) Cancer Statistics. [Online] Available at: <https://www.cancer.gov/about-cancer/understanding/statistics> [Accessed 27th June 2017].
- National Institute for Occupational Health. (2013) National Cancer Registry. Incidence Report for 2003: [Online] Available at: <http://www.nioh.ac.za> [Accessed 27th June 2017].
- Nelson, R. (2016). Coping Strategies Used by Dying Cancer Patients Affect QOL. [Online] Available at: <https://www.medscape.com/viewarticle/866563> [Accessed 27th June 2017].
- Nhlapo, Z. (2016). The Challenges Of Suffering From Cancer In South Africa. [Online] Available at: https://www.huffingtonpost.co.za/2017/05/16/the-challenges-of-suffering-from-cancer-in-south-africa_a_22093419/ [Accessed 27th June 2017].
- Nipp, R.D., El-Jawahri, A., Fishbein, J.N, et al. 2016. The relationship between coping strategies, quality of life, and mood in patients with incurable cancer. *Cancer*. [Online]

- 122(13). p. 2110–2116. doi:10.1002/cncr.30025. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/cncr.30025/abstract> [Accessed 27th June 2017].
- Oates, J.B. (2006) *Researching Information Systems and Computing*, London: Sage Publications Ltd.
- Ogden, J. (2003) Some problems with social cognition models: a pragmatic and conceptual analysis. *Health Psychology*. 22. p. 424-428.
- Ong, H.C., Ibrahim, N. & Wahab, S. (2016) Psychological distress, perceived stigma, and coping among caregivers of patients with schizophrenia. *Psychology Research and Behaviour Management*. 9. p. 211–218. doi: 10.2147/PRBM.S112129.
- Oz, F., Dil, S., Inci, F. & Kamisli, S. (2012). Evaluation of group counselling for women with breast cancer in Turkey. *Cancer Nursing*. 35(4). p. 27-34.
- Paddison, C. A, M., Alpass, F. M. & Stephens, C.V. (2010) Using the Common Sense Model of illness self-regulation to understand diabetes-related distress: The importance of being able to ‘make sense’ of diabetes. *New Zealand Journal of Psychology*. 39(1). p. 45-50.
- Pauwels, E.E., Charlier, C., De Bourdeaudhuij, I., Lechner, L. & Van Hoof, E. (2013) Care needs after primary breast cancer treatment. Survivors’ associated sociodemographic and medical characteristics. *Psychooncology*. 22. p. 125–32.
- Petrie, K.J., Jago, L.A. & Devcich, D.A. (2007). The role of illness perceptions in patients with medical conditions. *Curr Opin Psychiatry*. 20. p. 163-167.
- Pietrangelo, A. & Holland, K. (2017) *The Top 10 Deadliest Diseases*. [Online] Available at: <https://www.healthline.com/health/top-10-deadliest-diseases> [Accessed 27th June 2017].
- Piotie, N. P. (2017) *Is cancer a white people’s disease in South Africa?* [Online] Available at: <https://africacheck.org/2017/12/05/analysis-cancer-white-peoples-disease-south-africa-legend/> [Accessed 27th June 2017].
- Piotie, P. N. (2017) *ANALYSIS: Is cancer a white people’s disease in South Africa?* [Online] Available at: <https://africacheck.org/2017/12/05/analysis-cancer-white-peoples-disease-south-africa-legend/> [Accessed 27th June 2017].
- Plaxe, S. C. & Mundt, A. J. (2014) Patient education: Endometrial cancer treatment after surgery (Beyond the Basics). [Online] Available at: <http://www.uptodate.com/contents/endometrial-cancer-treatment-after-surgery-beyond-the-basics> [Accessed 27th June 2017].
- Polanski, J., Jankowska-Polanska, B., Rosinczuk, J., Chabowski, M. & Szymanska-Chabowska, A. (2016) Quality of life of patients with lung cancer. *Oncology Targets Therapy*. 9. p. 1023–1028.

- Polat, U., Arpacı, A., Demir, S., Erdal, S., & Yalın, S. (2014) Evaluation of quality of life and anxiety and depression levels in patients receiving chemotherapy for colorectal cancer: impact of patient education before treatment initiation. *Journal of Gastrointestinal Oncology*. 5(4). P. 270-275.
- Polit, D.E. & Beck, C. T. (2008) *Nursing Research: Generating and Assessing Evidence for Nursing Practice*, Philadelphia: Lippincott Williams and Wilkins.
- Rahman, S. (2017) The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language “Testing and Assessment” Research: A Literature Review. *Journal of Education and Learning*. 6, (1). p. 102-112.
- Ramathuba, D., Ngambi, D., Khoza, L. B. & Ramakuela, N. (2016) Knowledge, attitudes and practices regarding cervical cancer prevention at Thulamela Municipality of Vhembe District in Limpopo Province. *African Journal of Primary Health Care & Family Medicine*. 8(2). DOI:10.4102/phcfm.v8i2.1002
- Ramathuba, D. U., Jacqueline, R. N. & Ndou, N. D. 2014. Patients’ Perspective of Cancer Treatment and Care in Vhembe District of Limpopo Province. *J Nurs Care* 3:186. doi10.4172/2167-1168.1000186
- Ramsey, S.D., Bansal, A., Fedorenko, C R., Blough, D.K., Overstreet, K. A., Shankaran, V & Newcomb, P (2016) Financial Insolvency as a Risk Factor for Early Mortality Among Patients With Cancer. *Journal of Clinical Oncology*. 34(9). P. 980-986.
- Rees, G., Fry, A., Cull, A. C. & Sutton, C. (2004) Illness Perceptions and distress In Women at Increased Risk of Breast Cancer. *Psychology and Health*. 19(6). p. 749–765. DOI:10.1080/08870440412331279764
- Rice D, Mehta S, Shapiro A, Pope J, Harth M, Morley-Forster P, Sequeira K, Teasell R Psychological distress in outpatients assessed for chronic pain compared to those with rheumatoid arthritis clinic. *Journal of Pain Research and Management*. 2016. doi:10.1155/2016/7071907. [Online] Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4904611/> [Accessed 27th June 2017].
- Richardson, E. M., Schüz, N., Sanderson, K., Scott, J. L. & Schüz, B. (2016). Illness representations, coping, and illness outcomes in people with cancer: A systematic review and meta-analysis. *Psycho-Oncology*. 26 (6). p. 724–737.
- Ridd, M.J., Santos-Ferreira, D.L., Montgomery, A.A., Salisbury, C. & WHamilton, W. (2015) Patient–doctor continuity and diagnosis of cancer: electronic medical records study in general practice. *British Journal of General Practice*. [Online] 65(634). e305–e311.

Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4408510/> [Accessed 27th January 2017]

Robb, K.A., Simon, A.E., Miles, A. & Wardle, J. (2014) Public perceptions of cancer: a qualitative study of the balance of positive and negative beliefs. *BMJ Open* 2014;4:e005434. doi:10.1136/bmjopen-2014-005434. [Online] Available at: <http://bmjopen.bmj.com/content/bmjopen/4/7/e005434.full.pdf> [Accessed 27th June 2017].

Royal College of Obstetricians and Gynaecologists. 2014. Guidelines for the Diagnosis and Management of Vulval Carcinoma. [Online] Available at: <https://www.rcog.org.uk/globalassets/documents/guidelines/vulvalcancerguideline.pdf> [Accessed 27th June 2017].

Ryan, H., Schofield, P., Cockburn, J., Butow, P., Tattersall, M., Turner, J., Girgis, A., Bandaranayake, D. & Bowman D. 2005. How to recognize and manage psychological distress in cancer patients. *European Journal of Cancer Care*. [Online] 14. p. 7–15. Available at: [http://www.lib.sun.ac.za/Library/eng/finding/CPDWell\(2011\)/Ryan.pdf](http://www.lib.sun.ac.za/Library/eng/finding/CPDWell(2011)/Ryan.pdf) [Accessed 27th June 2017].

Sait, K.H., Anfinan, N.M., Eldeek, B., Al-Ahmadi, J., Al-Attas, M., Sait, H.K., Basalamah, Al-Ama, N.H.A. & El-Sayed, M.E. (2014). Perception of Patients with Cancer towards Support Management Services and Use of Complementary Alternative Medicine - a Single Institution Hospital-Based Study in Saudi Arabia. *Asian Pacific Journal of Cancer Prevention*. 15(6). p. 2547–2554.

Salant, P. & Dillman, D. A. How to conduct your own survey. *Journal of Business & Economic Research*. 5(3). p. 65-70.

Samuels, M., Pottage, C., Dai, D. & McDonnell, P. (2016) *Waiting Times for Suspected and Diagnosed Cancer Patients*. 2015-16 Annual Report. [Online] Available at: <https://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2016/06/Cancer-Waiting-Times-Annual-Report-201516-1.pdf> [Accessed 27th June 2017].

Sandton Oncology Centre. (2011) *Cancer in South Africa and the Role of the National Cancer Registry*. ASCO POST May 1 2011, 2(7): 45-67. [Online] Available at: <https://www.sandtononcology.co.za/knowledgebase/articles/26-cancer-in-south-africa-and-the-role-of-the-national-cancer-registry> [Accessed 27th June 2017].

Saunders, M., & Thornhill, A. (2012) *Research methods for business students*. Essex: Pearson Education Limited.

Saunders, M., Lewis, P. & Thornhill, A. (2012) “Research Methods for Business Students” 6th edition, Pearson Education Limited

Saunders, M., Lewis, P. & Thornhill, A. (2012). *Research Methods for Business Students*: 6th edition, Pearson Education Limited

Saunders, M., Lewis, P., & Thornhill, A. (2009) *Research methods for business students*. London: England.

Schneider, M. S., Kisby, C. K. & Flint, E. P. (2010) Effect of virtual reality on time perception in patients receiving chemotherapy. doi: 10.1007/s00520-010-0852-7. [Online] Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3673561/> [Accessed 27th June 2017].

Schneider, S. M. (2013) Effect of virtual reality on time perception in patients receiving chemotherapy. [Online] Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3673561/> [Accessed 27th June 2017].

Schuurhuizen, C. S. E. W., Braamse, A. M. J., Beekman, A. T. F., Bomhof-Roordink, H., Bosmans, J. E., Cuijpers, P., Hoogendoorn, A. W., Konings, I. R. H. M., van der Linden, M. H. M., Neeffjes, E. C. W., Verheul, H. M. W. & Dekke, J. 2015. Screening and treatment of psychological distress in patients with metastatic colorectal cancer: study protocol of the TES trial, *BMC Cancer*. 15. p. 302. DOI 10.1186/s12885-015-1313-y

Scott, S.E., Walter, F.M., Webster, A., Sutton, S. & Emery, J. (2012). *The model of pathways to treatment: conceptualization and integration with existing theory*. *British Journal of Health Psychology*. 18. p. 45–65.

Sedgwick, P. (2014). Cross sectional studies: advantages and disadvantages. *British Medical Journal*. 348. 2276.

Selman, L., Higginson, I. J., Agupio, G., Dinat, N., Downing, J., Gwyther, L., Mashao, T., Mmoledi, K., Moll, A. M., Sebuyira, M., Panajatovic, B. & Harding, R. (2009). Quality of life among patients receiving palliative care in South Africa and Uganda: a multi-centred study. *Health Qual Life Outcomes*. 9. p. 21.

Semenya, S. S. & Potgieter, J. M. 2014. Bapedi traditional healers in the Limpopo Province, South Africa: Their socio-cultural profile and traditional healing practice. *Journal of Ethnobiology and Ethnomedicine* 2014 (10):4, <https://doi.org/10.1186/1746-4269-10-4>

Seyedrasooly, A., Rahmani, A., Zamanzadeh, V., Aliashrafi, Z., Nikanfar, A. R. & Jasemi, M. (2014). Association between Perception of Prognosis and Spiritual Well-being among Cancer Patients. *Journal Caring Science*. 3(1). p. 47-55.

Shakeri, J., Kamangar, E., Ebrahimi, E., Aznab, M., Shakeri, H. & Arman, F. (2015) Association of Coping Styles with Quality of Life in Cancer Patients. *Indian J Palliat Care*. 21(3). p. 298–304.

- Shakeri, J., Kamangar, M., Ebrahimi, E., Aznab, M., Shakeri, H. & Arman, F. (2015) Association of Coping Styles with Quality of Life in Cancer Patients. *Indian journal of palliative care*. 21(3). p. 298–304.
- Sharp, L. & Timmons, A. (2010) *The financial impact of a cancer diagnosis. National Cancer Registry Ireland*. [Online] Available at: <https://www.ncri.ie/sites/ncri/files/pubs/FinancialImpactofaCancerDiagnosis%28FullReport%29.pdf> [Accessed 27th June 2017].
- Sharp, L. & Timmons, A. (2010) The financial impact of a cancer diagnosis. *National Cancer Registry/Irish Cancer Society* 2010. [Online] Available at: [http://www.ncri.ie/sites/ncri/files/pubs/FinancialImpactofaCancerDiagnosis\(FullReport\).pdf](http://www.ncri.ie/sites/ncri/files/pubs/FinancialImpactofaCancerDiagnosis(FullReport).pdf) [Accessed 27th June 2017].
- Shaunfield, S. (2015) *“It’s a Very Tricky Communication Situation”: A Comprehensive Investigation of End-of-Life Family Caregiver Communication Burden*. University of Kentucky: Lexington, KY, USA.
- Shea–Budgell, M.A., Kostaras, X., Myhill, K.P. & Hagen, N.A. (2014) Information needs and sources of information for patients during cancer follow-up. *Curriculum Oncology*. 21(4). p. 165–173. doi:10.3747/co.21.1932.
- Shejila, C. H., Pai, M. S., Fernandes, D. Mathew, S., Chakrabarty, J., Devi, E. S. & George, A. (2017) *Psychological impact of cancer diagnosis in newly diagnosed breast cancer patients*. [Online] Available at: <https://manipal.pure.elsevier.com/en/publications/psychological-impact-of-cancer-diagnosis-in-newly-diagnosed-breast> [Accessed 27th June 2017].
- Sheran, M., & Sarbaum, J. (2012). Developing an assessment of learning process: The importance of pretesting. *American Journal of Business Education*. [Online] Available at: <http://dx.doi.org/10.19030/ajbe.v5i5.7218> [Accessed 27th June 2017].
- Shuttleworth, M. 2009. Types of Validity. [Online] Available at: <https://explorable.com/types-of-validity> [Accessed 27th June 2017].
- Sibel, O. G., Gamze, V. S. Ebru, O. Gürsel, R. S.& Yucel, Y. (2012). The Effects of Educational Level on Breast Cancer Awareness: A Cross-Sectional Study in Turkey January 2012. *Asian Pacific journal of cancer prevention*. 13(1). p. 295-300. DOI10.7314/APJCP.2012.13.1.295.
- Silva, M. S., Crespo, C. & Canavarro, M. C. (2012). Pathways for psychological adjustment in breast cancer: A longitudinal study on coping strategies and posttraumatic growth. *Psychology & Health*. 27(11). p. 1323–1341.

- Sjölander, C. 2012. *Consequences for family members of being informal caregivers to a person with advanced cancer Masters Dissertation*. Publisher: School of Health Sciences, Jönköping University. [Online] Available at: <http://hj.diva-portal.org/smash/get/diva2:567503/FULLTEXT01.pdf> [Accessed 27th June 2017].
- Sostari, C. M. & Sprah, L. (2004) Psychological distress and intervention in cancer patients treated with. *Radiology Oncology*. 38(3). p. 193-203.
- South African Human Rights Commission (SAHRC) (2017) Five month wait to see doctor for KZN cancer patients. [Online] Available at: <https://www.sahrc.org.za/index.php/sahrc-media/news/item/683-five-month-wait-to-see-doctor-for-kzn-cancer-patients-sahrc> [Accessed 27th June 2017].
- Souza, B.C., Fustinoni, S.M., Amorim, M.H.C., Zandonade, E. Matos, J.C. & Schirmer, J. (2015) Breast cancer: diagnosis-to-treatment waiting times for elderly women at a reference hospital of São Paulo, Brazil. DOI: 10.1590/1413-812320152012.00422015. [Online] Available at: http://www.scielo.br/pdf/csc/v20n12/en_1413-8123-csc-20-12-3805.pdf [Accessed 27th June 2017].
- Sprah, L. & Sostaric, M. (2004). Psychosocial Coping Strategies in Cancer Patients. *Radiology Oncology*. 38(1). p. 35-42.
- Stefan, C. 2013. *Why is cancer not a priority in South Africa?* [Online] Available at: <http://www.canceralliance.co.za/wp-content/uploads/2014/08/SAMJ-9301-EDITORIAL.pdf> [Accessed 27th June 2017].
- Stockdale, R. & Standing, C. 2006. *An interpretive approach to evaluating information systems: A content, context, process framework*. [Online] Available at: www.elsevier.com/locate/ejor [Accessed 27th June 2017].
- Stockford, K., Turner, H., & Cooper, M. (2007). Illness perception and its relationship to readiness to change in the eating disorders: A preliminary investigation. *British Journal of Clinical Psychology*. 46. p. 139-154.
- Stone, A.M., Mikucki-Enyart, S., Middleton, A., Caughlin, J.P. & Brown, L.E. (2012) Caring for a parent with lung cancer: Caregivers' perspectives on the role of communication. *Qual. Health Res.* 22. p. 957-970.
- Taghavi, L.T., Dehghan, N.N., Mardani, H.M. & Rezaee, N. 2015. Cancer patients' perceptions of family psychological support: a qualitative study. *Modern Care Journal*. 12(3). p. 134-138.

Tennis, J.T. (2008). *Epistemology, Theory, and Methodology in Knowledge Organization: Toward a Classification, Metatheory, and Research Framework*. In *Knowledge Organization*. 35(2/3): 102-112.

Thanasegaran, G. (2009) Reliability and validity issues in research. *Integration and Dissemination*. 4. p. 35-40

The Cancer Association of South Africa's CANSA's (2012) *South African Cancer Statistics*. [Online] Available at: <http://www.cansa.org.za/south-african-cancer-statistics> [Accessed 27th June 2017].

The Observer 2017. Limpopo health system in need of resuscitation. November 09, 2017. <http://www.observer.co.za/limpopo-health-system-in-need-of-resuscitation/>

Trochim, W. M. K. (2006). *Research methods knowledge base*. [Online] Available at: <http://www.socialresearchmethods.net/kb/intval.php> [Accessed 27th June 2017].

Trupe, L. A., Rositch, A., Dickerson, L., Lucas, S. & Harvey, S. C. (2017) Knowledge and attitudes about breast cancer in Limpopo, South Africa. *Journal of Global Oncology*. [Online] 3(5). DOI: 10.1200/JGO.2016.008102. Available at: <http://ascopubs.org/doi/full/10.1200/JGO.2016.008102> [Accessed 27th June 2017].

Tsoussis, S., Papadogiorgaki, M., Markodimitraki, E., Delibaltadakis, G., Strevinas, A., Psyllakis, M., Tabakaki, T., Drossitis, I., Kabourakis, A., Papadimitraki, E., Kryptos, S., Daskalakis, K., Fragiadaki, G., Zoumadaki, E. & Apostolakis, S. (2013) Disclosure of cancer diagnosis: the Greek experience. *BUON*. 18(2). p. 516-526.

Valizadeh, L., Zamanzadeh, V. & Rahmani, A. (2012) Cancer disclosure: experiences of Iranian cancer patients. *Nursing & Health Sciences*. 14(2). p.250–6.

Van Gog, T., Paas, F., Savenye, W., Robinson, R., Niemczyk, M., Atkinson, R., Johnson, T. E., O'Connor, D. L., Rikers, R. M. J. P., Ayres, P., Duley, A. R., Ward, P., & Hancock, P. A. (2008) *Data collection and analysis (section on assessment of complex performance)*. In J. M. Spector, M. D. Merrill, J. J. G. Van Merriënboer, & M. P. Driscoll (Eds.), *Handbook of research on educational communications and technology* (3rd ed., pp. 763-800). Mahwah, NJ: Erlbaum.

Van Oers, H.M. & Schlebusch, L. (2013) Anxiety and the patient with breast cancer: a review of current research and practice. *Review Article: South African Family Practice*. 55(6). p. 525-530.

- Van Wilgen, C.P., van Ittersum, M.W. & Kaptein, A.A. (2013) Do illness perceptions of people with chronic low back pain differ from people without chronic low back pain? *Physiotherapy*. 99. p. 27–32.
- Venter, M. (2014). Cancer patients' and health care professionals' perceptions and experiences of cancer treatment and care in South Africa. A Thesis submitted in partial fulfilment of the North-West University for the degree Doctor Philosophiae in Psychology. North-West University.
- Visser, E., Leeftink, A. G., van Rossum, P. S. N Siesling, S., van Hillegersberg, R. & Ruurda, J. P, (2016) *Waiting Time from Diagnosis to Treatment has no Impact on Survival in Patients with Esophageal Cancer*. [Online] 8. P. 2679–2689. Available at: <https://link.springer.com/article/10.1245/s10434-016-5191-6> [Accessed 27th June 2017].
- Vogt, W. P., Dianna, C. G. & Lynne, M. H. 2012. *When to Use What Research Design*. New York: Guilford.
- Wagland,G., Bracher, M., Drosdowsky, A., Richardson,A., Symons, J., Milesshkin, L. & Schofield, P. (2017) *Differences in experiences of care between patients diagnosed with metastatic cancer of known and unknown primaries: mixed-method findings from the 2013 cancer patient experience survey in England*. *BMJ Open*.7(9). p. e017881. doi: 10.1136/bmjopen-2017-017881.
- Wanjohi, A.M. (2012) *Statement of the Research Problem*. KENPRO Online Papers Portal. [Online] Available at: <http://www.kenpro.org/sampling-procedures/> [Accessed 27th June 2017].
- Wedawatta, G.S.D, Ingirige, M.J.B. & Amaratunga, R.D.G. (2011) Case study as a research strategy: Investigating extreme weather resilience of construction SMEs in the UK. [Online] Available at: http://usir.salford.ac.uk/18250/1/6_Wedawatta_Case_study_as_a_research_strategy_Investigating_extreme_weather_resilience_of_construction_SMEs_in_the_UK.pdf [Accessed 30th January 2017]
- Wei, G., Bennett, M.I., Stark, D., Murray, S. & Higginson, I.J. (2010) Psychological distress in cancer from survivorship to end of life care: Prevalence, associated factors and clinical implications. *European Journal Cancer*. p. 1-9.
- Whitaker, K.L., Cromme, S., Winstanley, K., Renzi, C. & Wardle, J. (2015a) Emotional responses to the experience of cancer 'alarm' symptoms. *Psychooncology*. [Online] Available at: <http://onlinelibrary.wiley.com/doi/10.1002/pon.3964/full> [Accessed 27th January 2017]

- Whitten, R. (2012) How long should a cancer diagnosis take? [Online] Available at: <http://blog.providence.org/archive/how-long-should-a-cancer-diagnosis-take> [Accessed 27th June 2017].
- Wittenberg, E., Borneman, T., Koczywas, M., Del Ferraro, C. & Ferrell, B. (2017) Cancer Communication and Family Caregiver Quality of Life. *Behavioural Science*. 7(12). p. 1-8. doi:10.3390/bs7010012.
- Woodard, F. (2017) *NHS performance on cancer treatment waiting times hits record low*. Macmillan Cancer Support 2018 [Online] Available at: https://www.macmillan.org.uk/aboutus/news/latest_news/nhs-performance-on-cancer-treatment-waiting-times-hits-record-low.aspx [Accessed 27th June 2017].
- World Health Organisation (WHO). (2017) *Diagnosis and Treatment*. [Online] Available at: <http://www.who.int/cancer/treatment/en/> [Accessed 27th June 2017].
- World Health Organisation (WHO). (2018) *The top 10 causes of death*. [Online] Available at: <http://www.who.int/en/news-room/fact-sheets/detail/the-top-10-causes-of-death> [Accessed 27th June 2017].
- Woźniak, K. & Iżycki, D. (2014) Cancer: a family at risk. *Prz Menopauzalny*. 13(4). p. 253–261. doi: 10.5114/pm.2014.45002.
- Wu, J. R., Lai, Y. H., Sheu, J. C. & Shun, S. C. (2015) The Relationship Between Coping Strategies and Type D Personality in Non Late Stage Hepatocellular Carcinoma Survivors. *J. Cancer Res. Pract.* 2(3). p. 213-223.
- Wu, Z. & Kim, H. (2009) *Supporting Emotions of Cancer Patients and their Families during Hospital Treatments*. Cornell University. [Online] Available at: <http://iwsp.human.cornell.edu/files/2013/09/Supporting-Emotions-of-Cancer-Patients-and-their-Families-during-Hospital-Treatments-1u8ousx.pdf> [Accessed 27th June 2017].
- Yahaya, A. N., Subramanian, P., Bustam, A. Z. & Taib, N. U. (2016) Symptom Experiences and Coping Strategies among Multiethnic Solid Tumor Patients Undergoing Chemotherapy in Malaysia. *Asian Pacific Journal of Cancer Prevention*. 16(2). p. 723-730.
- Young, C. F. A. & Van Niekerk, S. (2007) *Juta's Manual of Nursing*, 1:29. Lansdowne, Juta & Co. Ltd.
- Zilinski, L. 2010. *Information Behaviors of Cancer Patients in the Information Age*. [Online] Available at: http://repository.cmu.edu/cgi/viewcontent.cgi?article=1155&context_science [Accessed 27th June 2017].

ANNEXURES

ANNEXURE A: Consent Form

Dear Respondent

My name is Rafundisani Takalani Fridah, a MCUR student at the University of Venda. I am carrying out a research on the impact of cancer diagnosis among cancer patients. You are requested to take part in this study by completing this questionnaire, anonymously. There is no correct answer to any of the questions in this questionnaire and as result, please use your first impressions to answer the questions. You are free to ask the researcher for any explanations where you feel you need some assistance. This questionnaire does not contain any offensive material and there is no risk or reward associated with it. All data collected would remain confidential and will be used for this study only. You are free to withdraw from the research any time you want, without giving any explanations. You are expected to return the questionnaire to the researcher, whether you have completed it or not. **Do not write your name on the questionnaire as your identity should not be known. Please sign this informed consent form to acknowledge that you have read and understood the contents and that you are voluntarily participating in this study and that you agree that the responses you will give should be used in this study.**

Consent: *Ihave read and understood this informed consent form and the purpose of this study. I agree/disagree (tick the applicable) to voluntarily take part in this study. I will not demand any reward or favour in any form from the researcher. I also agree that all the answers I give can be used for the purpose of this study.*

Respondent's signature: _____ *Date:* _____

Researcher's signature: _____ *Date:* _____

Thank you

ANNEXURE B: Questionnaire

Questionnaire

Section 1: Demographic data and prevalence

- 1.1. Gender: Female Male
- 1.2. Age range in years: below 21 21 to 30 31 to 40 41 to 50
 Above 51
- 1.3. Level of education: Grade 9 matric Diploma BA degree
 MA degree
- 1.4. Employment status: formal informal unemployed
- 1.5. Source of income: salary business spouse/sponsor grant
- 1.6. Main language Tshivenda Xitsonga Pedi Other Specify _____
- 1.7. Referral Hospital _____
- 1.8. Village you come from _____
- 1.9. Family member once diagnosed with cancer:
 Grandparents parents siblings children none
- 1.10. Family member diagnosed with cancer was:
 treated and died of natural cause not treated and died of cancer
 treated but died of cancer treated and still alive
- 2.1. When were you diagnosed with cancer? _____
- 2.2. Duration of diagnosis
 less than two week 1 month 2 months 3 months more than 3 months
- 2.3. Which type of cancer were you diagnosed with?
 Breast,
 Cervical,
 Lung,
 Prostrate,
 Oesophagus,
 Colon
- 2.4. How did you know that you have been diagnosed with cancer?

- Medical staff broke the news,
- Relative broke the news
- Read it from the medical report on my own,
- Rumours

Section 2: Impact of cancer diagnosis

3.1. How did you feel after receiving information about your cancer diagnosis?

- Frightened
- Sad
- Indifferent
- Calm

3.2. How did you react to news that you have cancer?

- Cried
- Isolated myself
- Was angry
- Nearly collapsed
- I wanted to talk to someone

3.3. What did you think about after you were diagnosed with cancer?

- Getting treatment
- Having a second test
- Getting more information
- Getting home quickly

3.4. What was your main concern after being diagnosed with cancer?

- losing friends
- dying prematurely
- getting money for treatment
- where to be treated
- leaving my family alone
- losing my job

3.5. In what way did the cancer diagnosis impact on you?

- I lost hope in everything I was doing
- I blamed myself
- I started to live in fear
- I resolved to live
- Lost friends

Was not affected

3.6. How did your relatives/spouse react upon hearing of your cancer diagnosis?

- were surprise and angry
- were surprise and supportive
- indifferent but supportive
- asked me what I was going to do
- encouraged me to get more information

3.7. In what way did your relatives' responses to the cancer diagnosis affect you?

- gave me hope to seek treatment
- I felt like taking my own life
- did not affect me in any way

3.8. How would you describe your relatives' and friends' attitude towards you?

- supportive but with reservation
- supportive, wholeheartedly
- discouraging
- uncaring?

3.9. Each of the items below requires you to indicate your opinion on the impact of your cancer diagnosis. Each of the items is on a given scale as shown: *Strongly Disagree* = 1, *Disagree* = 2, *Neutral* = 3, *Agree* = 4, *Strongly agree* = 5. Place a tick in the box representing your choice.

Item	Description	Score	Ratings				
			1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree
Social impact of cancer diagnosis							
3.9.1.	Cancer diagnosis and its treatment have interfered with my family or social life.						
3.9.2.	Cancer diagnosis and its treatment have interfered with my sex life.						
3.9.3.	Cancer diagnosis has causes loss of interest in activities once enjoyed						
3.9.3.	Cancer diagnosis and its treatment have interfered with my daily activities.						
3.9.5.	After cancer diagnosis my quality of life has been poor						
Physical impact of cancer diagnosis							
3.9.6.	Cancer diagnosis and its treatment have caused changes in how I look, and this concerns me.						
3.9.7.	Cancer diagnosis has caused physical hardship for me.						
3.9.8.	Cancer diagnosis has caused a lot of change in my appetite.						
3.9.9.	Pain and discomfort have caused me to limit my activities.						
3.9.10.	Eating problems due to loss of appetite or overeating						
3.9.11.	Tiredness or less energy almost every day						

3.9.12.	I am always restless every day					
Financial impact of cancer diagnosis						
3.9.13.	Cancer has caused financial hardship for me.					
Emotional impact of cancer diagnosis						
3.9.13.	Cancer has caused emotional hardship for me.					
3.9.15.	I have been irritable or unusually angry and I have not controlled it well.					
3.9.16.	I have felt anxious or worried about cancer and the treatment I am receiving.					
3.9.17.	I have felt depressed or discouraged after being diagnosed with cancer.					
3.9.18.	I have had trouble coping with the stress I have been having.					
3.9.19.	I have had trouble focusing at work or at home, or on routine things such as reading the newspaper or watching television.					
3.9.20.	My sleeping habits have changed for the worse since the cancer diagnosis.					
3.9.21.	Sad or “empty” mood almost every day since the cancer diagnosis					
3.9.22.	Feelings of guilt, worthlessness, and helplessness since the cancer diagnosis					
3.9.23.	Cancer diagnosis has cause trouble with concentrating, remembering, or making decisions.					
3.9.23.	Thoughts of death or suicide, or attempts at suicide have occupied me since my cancer diagnosis					

3.10. When long did you wait to start treatment?

- less than a week
- one week
- two week
- three weeks
- more than tree months

3.11. Which of these treatments did you receive?

- Chemotherapy
- Radiation
- Both

3.12. How long have you been on the cancer treatment?

- less than 2 months
- 2 to 4 months
- 5 to 8 months
- 9 to 12 months
- more than a year

3.13. What type of help did you receive from health professionals after the cancer diagnosis?

- 1 Support
- 2 Information
- 3 None

3.14. What changes to your life did the cancer diagnosis bring?

- Disability
- 2 None
- 3 Loss of friends
- 4 Unemployment
- 5 None

3.15. What do you think is most dreaded by cancer patients upon being diagnosed?

- Dying prematurely
- Being looked down upon by others
- Confined in a solitary place
- Losing a job

3.16. Did you feel you had enough information about your diagnosis from health professionals? Yes No

Section 3: Coping strategies used by cancer patients to overcome the impact of cancer diagnosis

4.1. Have you used any of these as a coping strategy after being diagnosed of cancer? Please tick *Yes* or *No* against each strategy.

Item	Strategy used to cope with cancer diagnosis	Yes	No
4.1.	Using drug, alcohol or something to forget the ordeal of cancer diagnosis thoughts		
4.2.	Avoiding any topic about cancer		
4.3.	Diverting my attention to something else		
4.4.	Avoiding inquisitive persons, like distance relatives and neighbours		
4.4.	Joining cancer support group for counselling		
4.6.	Sharing emotions with friends and relatives		
4.7.	Focusing on positive aspects of life while waiting treatment plan		
4.8.	Reading books on cancer		

4.9	Talking to medical staff about treatment plan		
4.10.	Praying in a solitary place to console myself		
4.11.	Confronting family members who talked to me about cancer diagnosis		
4.12.	Singing religious or emotive songs to comfort myself		
4.13.	Keeping quiet when in public places		

Section 4: Illness perceptions and psychological distress effects on the coping strategies of patients diagnosed of cancer

Each of the items requires you to indicate your opinions on how you cope with the cancer diagnosis. Each of the items is on a given scale, as shown: *Strongly Disagree* = 1, *Disagree* = 2, *Neutral* = 3, *Agree* = 4, *Strongly agree* 5. Place a tick in the box representing your choice

Item	Illness perceptions & psychological distress	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Q5.1.	Alcohol or drugs help to calm me down when I am upset					
Q5.2.	I wish people would leave me alone to face my problems					
Q5.3.	No matter what I do. I can't sleep from fear of death					
Q5.4.	I think cancer is my fate and there is no point of fighting it					
Q5.5.	Having cancer is bad enough. but to make matters worse no one knows how to take care of me					
Q5.6.	I look for more information when problems come up or I get bad news					
Q5.7.	I try to lighten up and see the humour in a tough situation					

**ANNEXURE C Application for Permission from Limpopo Provincial Government
Department of Health**

P.O Box 1188
Phangami
0904

21.08.2017

Department of Health
Research Unit
Polokwane
0700
Dear Sir/Madam

**SUBJECT: APPLICATION FOR AN APPROVAL TO CONDUCT A RESEARCH
STUDY ON A PROJECT TITLED: IMPACT OF CANCER DIAGNOSIS AMONG
CANCER PATIENTS IN THE VHEMBE DISTRICT OF THE LIMPOPO
PROVINCE, SOUTH AFRICA**

I am hereby applying for an approval to conduct a research study for the above mentioned project. The study will be conducted among cancer patients from Vhembe district hospitals - Donald Fraser, Elim, Louis Trichardt, Malamulele, Mesina, Siloam and Tshilidzini.
I will be very grateful if my request can be favourably considered

Regards

Rafundisani Takalani Fridah
Contact no: 0724328354
Email:rafundisani9@gmail.com

ANNEXURE D Permission from Limpopo provincial government department of health



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Enquiries: Stols M.L. (015 293 6169)

Ref:4/2/2

Rafundisani TF
P.O. Box 1188
Phangani
0904

Greetings,

RE: Impact of Cancer Diagnosis among Cancer patients in Vhembe District of Limpopo Province, South Africa

The above matter refers.

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

Your cooperation will be highly appreciated.


Head of Department

12/09/2014
Date

16 College Street, Polokwane, 0700, Private Bag #0302, POLOKWANE, 0700
Tel: (015) 293 6000 Fax: (015) 293 6211/20 Website: <http://www.limpopo.gov.za>

ANNEXURE E: Application for Permission from Vhembe District Department of Health

P.O Box 1188
Phangami
0904

15.09.2017

District Executive Manager
Department of Health
Vhembe District
Thohoyandou
0950

Dear Sir/Madam


SUBJECT: APPLICATION FOR AN APPROVAL TO CONDUCT A RESEARCH STUDY ON PROJECT TITLED: IMPACT OF CANCER DIAGNOSIS AMONG CANCER PATIENTS IN VHEMBE DISTRICT OF LIMPOPO PROVINCE, SOUTH AFRICA

I am hereby applying for an approval to conduct a research study for the above mentioned project. The study will be conducted among cancer patients from Vhembe district Hospitals (Donald Fraser, Elim, Louis Trichardt, Malamulele, Messina, Siloam and Tshilidzini). Find attached the University of Venda Ethical Clearance Certificate and permission to conduct the study by the Provincial Department of Health and Department of Health Vhembe District.

I will be grateful if my request can be favourably considered

Regards
Rafundisani Takalani Fridah
Contact no: 0724328354
Email:rafundisani9@gmail.com

ANNEXURE F: Permission from Vhembe District Department of Health and selected hospitals

 **LIMPOPO**
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF HEALTH
VHEMBE DISTRICT**

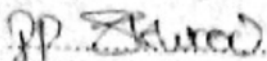
Ref: SS/6
Enq: Muvuri MME
Date: 15 September 2017

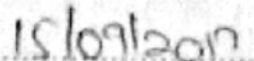
Dear Rafundisani T.F

PERMISSION TO CONDUCT A RESEARCH ON THE " Impact of cancer diagnosis among cancer patients in the Vhembe District"

1. The above matter refers.
2. Your letter received on the 15 September 2017 requesting for Permission to conduct an investigation into the " Impact of cancer diagnosis among cancer patients in the Vhembe District" is hereby acknowledged.
3. The District has no objection to your request.
4. Permission is therefore granted for the study to be conducted within Vhembe District.
5. You are however advised to make the necessary arrangements with the facilities concerned.

Wishing you success in your endeavors.

.....
DISTRICT CHIEF DIRECTOR


.....
DATE

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

the heartland of Southern Africa - development is about people

Processed by FREE version of
Jet Scanner Lite

ANNEXURE G: Permission from Siloam Hospital

**LIMPOPO**
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF HEALTH
SILOAM HOSPITAL**
Confidential

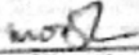
Ref : S42/1/13
Enq : Mashaphi N.T
Date : 20 September 2017

To: Rafundisani T.F

DEPARTMENT OF HEALTH
& SOCIAL DEVELOPMENT
SILOAM HOSPITAL
2017-09-20
REGISTRY

RE: PERMISSION TO CONDUCT RESEARCH: YOURSELF.

1. The above matter refers.
2. The Hospital highly acknowledges the receipt of your letter dated 15 September 2017 regarding the above matter.
3. Kindly note that the institution is granting you permission to come and conduct your research.
4. You are kindly requested to adhere to the conditions as set out in your approval from the Provincial Office.
5. Hoping you will find the above in order


Acting Chief Executive Officer


20.09.2017
Date

Private Bag X2432, Malhado, 0920
Tel (015) 973 000-4/5/6, 015 973 1447/8, 015 973 1977, 015 973 1892/4/9 Fax (015) 973 0607.

The heartland of Southern Africa – development is about people!

Processed by FREE version of
Jet Scanner Lite

ANNEXURE H: Permission from Elim Hospital

 **LIMPOPO**
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF HEALTH
ELIM HOSPITAL
CONFIDENTIAL**

Ref: S3/1/2
Enq: Muthambi S.N.
Date: 2017.10.05

To: Rafundisani T.I.
P.O. Box 1188
Phangani
0904

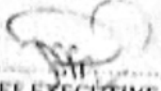
Email: rafundisani9@gmail.com


Contact: 0724328354

CC: The Acting Clinical Manager
CC: The Acting Deputy Manager: Nursing Services
CC: The Acting Quality Assurance Coordinator
CC: The Acting Deputy Director: Risk Management Services

RE: PERMISSION TO CONDUCT RESEARCH STUDY ON PROJECT TITLED:
IMPACT OF CANCER DIAGNOSIS AMONG CANCER PATIENTS IN
VHEMBE DISTRICT OF LIMPOPO PROVINCE, SOUTH AFRICA:
YOURSELF.

1. The above matter refers.
2. Permission to your request to conduct research project is hereby granted.
3. Kindly be advised to contact the Acting Deputy Manager Nursing Services to proceed with your research study.
4. It is hoped that you will find this in order.



.....
CHIEF EXECUTIVE OFFICER


.....
DATE

PHang 5312, Elim Hospital, Deneb
Tel (015)536 3201/2/3/4/5, Fax (015)536 3160, Email: elimhospital@limpo.gov.za 4811_20
The heartland of Southern Africa - development is about people!

Processed by FREE version of
Jet Scanner Lite

ANNEXURE I: Permission from Malamulele Hospital

 **LIMPOPO**
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF HEALTH
MALAMULELE HOSPITAL**


REF : S 4/5
ENQ : Stwela T.S
DATE : 20/09/2017

TO WHOM IT MAY CONCERN

SUBJECT: PERMISSION TO CONDUCT A RESEARCH: MS RAFUNDISANI L.E

1. This is to certify that the above mentioned has been granted permission to conduct a research at Malamulele hospital.
2. The research topic is on "Impact of Cancer Diagnosis among Cancer patients in Vhembe district of Limpopo Province, Limpopo"
3. Attached hereto is the applicant's letter, research proposal, Training institutions Ethics committee clearance, Provincial department approval and the research study checklist of which all the requirements were met.
4. Hopping for an effective cooperation between the participants of this research

Thank you


ACTING CHIEF EXECUTIVE OFFICER
MALAMULELE HOSPITAL

20/09/2017
DATE

LIMPOPO PROVINCE
DEPARTMENT OF HEALTH
MALAMULELE HOSPITAL

2017-09-21

REGISTRY
P/BAG 9245 MALAMULELE 0982
TEL: 015 851 0026/FAX: 015 851 0620

CONFIDENTIAL


Malamulele Hospital Private Bag 9245 Malamulele 0982
Tel: (015) 851 0026/1020/1017/1019 Fax: (015) 851 0620

The heartland of Southern Africa - development is about people

Processed by FREE version of
Jet Scanner Lite

ANNEXURE J: Permission from Louis Trichardt Memorial Hospital

CONFIDENTIAL

 **LIMPOPO**
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA


DEPARTMENT OF HEALTH
LOUIS TRICHARDT MEMORIAL HOSPITAL


Ref: 4/2/2 26/09/2017
Enq: Masindi L.P.

To: Rafundisani TF
P.O. Box 1188
PHANGAMI
0904

**SUBJECT: REQUEST TO CONDUCT A RESEARCH AT LOUIS TRICHARDT
MEMORIAL HOSPITAL: RAFUNDISANI TF**

1. The receipt of your letter dated 15/09/2017 is hereby acknowledged.
2. Permission to conduct the following research topic "Impact of cancer diagnosis among cancer patients in Vhembe district of Limpopo province, South Africa" is hereby granted.
3. The above permission is subject to the conditions as set down in both permission letters of Province dated 12/09/2017 and District dated 15/09/2017.
4. Thank you.


CHIEF EXECUTIVE OFFICER
DR. MALATJI I.M.



DEPARTMENT OF HEALTH
LOUIS TRICHARDT HOSPITAL
26 SEP 2017
Private Bag 2417 Louis Trichardt 0920
CHIEF EXECUTIVE OFFICER

26.09.2017
DATE

P/BAG X 2417 LOUIS TRICHARDT 0920
TEL: 015 516 0148 Crn. Hospital & Snyman Street ☎ Fax: 015 516 3252/4658
The heartland of Southern Africa - development is about people

Processed by FREE version of
Jet Scanner Lite

ANNEXURE K: Permission from Donald Fraser Hospital

 **LIMPOPO**
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF HEALTH
DONALD FRASER HOSPITAL**

Ref: 4/2/2
Enquiries: Mphephu VF
Tell no. 072 1880 436
Ext. 9306
16/10/2017

TO: MRS Rafundisani TF
University of Venda
Private Bag x505
Thohoyandou
0950

LIMPOPO PROVINCE
DONALD FRASER HOSPITAL

2017 -10- 16
PRIVATE BAG X 1172, 0971 VHUFULI
DEPARTMENT OF HEALTH

RE: Permission to conduct Research study at Donald Fraser Hospital on impact of Cancer Diagnosis among Cancer patients in Vhembe District , Limpopo Province ,South Africa.

The above matter refers.

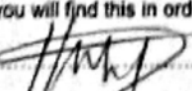
1. Permission to conduct the above mentioned study is hereby granted.

- Kindly be informed that - In the course of your study there should be no action that disrupts the services.
- You are to give report to quality assurance manager of Donald Fraser Hospital after completion of research study at Donald Fraser Hospital.
- After completion of the study, a copy should be submitted to our institution to serve as a resource.
- The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
- You are therefore requested to contact nursing administration office number 7, OPD basement for logistic arrangements.

4. Please bring along the following documents:

- Permission letter granted from department of health.
- Permission letter granted from educational institution.
- This letter.

Hoping you will find this in order


SIGNED  Date: 16/10/2017

CHIEF EXECUTIVE OFFICER

Private bag X1172, Vhufuli 0971
Tel: 015 963 1778/9, 015 1783 1791/2 • Fax: 015 963 1773, 015 963 1796
Cell: 083 248 0184

Processed by FREE version of
Jet Scanner Lite

ANNEXURE L: Permission from Messina Hospital

**LIMPOPO**
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

**DEPARTMENT OF HEALTH
MESSINA HOSPITAL**

REF : 65412
ENQ : Ruzhiani A.C
DATE : 27 September 2017

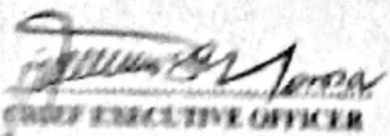
DEPARTMENT OF HEALTH MESSINA HOSPITAL - H.R.M. OFFICE 27 SEP 2017 PRIVATE BAG X4006 MUSINA 0900 LIMPOPO PROVINCE
--

FROM: HUMAN RESOURCE DEVELOPMENT

TO: Mrs. Ruzhiani T.J

RE: APPROVAL TO CONDUCT RESEARCH ON THE IMPACT OF CANCER
DIAGNOSIS AMONG CANCER PATIENTS IN VHEMBE DISTRICT OF
LIMPOPO PROVINCE, SOUTH AFRICA.

1. The above matter has reference.
2. This office wish to inform you that your application has been approved. You are requested to liaise with office of the Chief Executive Officer on the commencement date.
3. Your co-operation will be highly appreciated.


CHIEF EXECUTIVE OFFICER

2017.09.27
DATE

P.O. Box 60 Musina 0900
Tel: 015 534 0446 Fax 015 534 0819

The heartbeat of Southern Africa – development is about people!

Processed by FREE version of
Jet Scanner Lite

CONFIDENTIAL

ANNEXURE M: Ethical Clearance Certificate

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Ms TF Rafundisani

Student No:
15018375

PROJECT TITLE: Impact of cancer diagnosis
among cancer patients in Vhembe District of
Limpopo Province, South Africa.

PROJECT NO: SHS/17/PDC/18/1207

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Prof DU Ramathuba	University of Venda	Supervisor
Prof MS Mapulle	University of Venda	Co- Supervisor
Ms TF Rafundisani	University of Venda	Investigator – Student

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: July 2017

Decision by Ethical Clearance Committee Granted

Signature of Chairperson of the Committee:

Name of the Chairperson of the Committee: Prof. G.E. Ekosse



University of Venda

PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA
TELEPHONE (015) 962 8504/8313 FAX (015) 962 9360
"A quality driven financially sustainable, rural-based Comprehensive University"