QUALITY OF LIFE IN WOMEN UNDERGOING CHEMOTHERAPY FOR BREAST CANCER AT CANCER DISEASE HOSPITAL

By

FANWELL DAKA

A Dissertation Submitted to the School of Medicine, University of Zambia, in Partial Fulfilment for the Award of Master of Science in Clinical Neuropsychology

University of Zambia

Lusaka

2017

DECLARATION

I……………………………… hereby declare that this report is my own work and effort and that it has not been submitted anywhere else for any reward. Where other sources of information have been used, they have been accordingly acknowledged.

Name: Fanwell Daka

Date: _____

Signature: _____

CERTIFICATE OF APPROVAL

This dissertation by Fanwell,Daka is approved in partial fulfilment of the requirements

for the award of Mater of Science in Clinical Neuropsychology by the University of

Zambia.

Examiner 1:..

Date:...

Examiner 2:..

Date:...

Examiner 3:..

Date:...

Head of Department

Signature:..

Date:...

Department of Psychiatry

COPYRIGHT

ABSTRACT

Breast Cancer is a major Public Health problem because of its high incidence and mortality. It is feared by women due to negative stigma brought by its diagnosis and its psychological effects, which affect the perception of sexuality and their own personal image.The aim of the study was to evaluate the quality of life in Women undergoing chemotherapy for Breast Cancer at Cancer Disease Hospital in Lusaka, Zambia.

A cross-sectional study was carried out in a specialized unit of Cancer Disease Hospital in Lusaka with a convenience sample of 50 women with breast cancer, who were undergoing chemotherapy. Participants included those aged $\geq$18 years, diagnosed with breast cancer at any stage of disease, being on chemotherapy from the second cycle. Data was collected using a patient demographic form and a modified and standardisation Quality of Life Questionnaire for Breast Cancer − 23 (QLQBR23) was translated and validated for use in Nyanja and Bemba.

Results showed that emotional function was the most affected. In addition, the treatment affected neurocognitive functions like working memory, reaction time and organisation skills loss (mean = 22.9). The symptoms with the highest scores were insomnia (13.5), fatigue (12.4.) and loss of appetite (11.6). According to the Quality of Life Questionnaire− Breast Cancer 23, the mean score for Side effects was 17.3, meaning that many women experience side effects of chemotherapy, and impaired sexual satisfaction.

DEDICATION

I dedicate this work in honour of my late Father Johnson Daka.im grateful to my wife for the patience, my Children Taonga, Jabulani, Nathan and Olivia for encouragement and support. Many thanks to my supervisor Dr Ravi Paul for their inspiration, guidance and support. There are no words that can express how I feel. May God bless you all.

ACKNOWLEDGEMENTS

All that we know is a sum total of all who have taught us, directly and indirectly. I am forever indebted to the outstanding men and women who, through their commitment and dedication to becoming the best that they could be, have inspired me to do the same. Special acknowledgement is extended to my supervisor Dr. Ravi Paul for his generous sharing of time, knowledge and support. I could not have wished for a better collaborator and coach.

To my course mates and colleagues, the sound advice and assistance they generously gave me throughout this work is highly appreciated. Finally I would like to pass my sinere gratitudes to the medical superident of Cancer Disease Hospital Dr Banda and the ethical comitte at cancer disease hospital for allowing me to conduct the study.

TABLE OF CONTENTS

ABBREVIATIONS

BBB – Brain Blood Barrier

BC –   Breast Cancer

Chemo- Chemotherapy

CDH – Cancer Disease Hospital

QoL – Quality of Life

DSM IV TR – Diagnostic Statistical Manual IV Text Revision

MMS- Mini Mental State

NCI – Neurocognitive Impairments

QLQBR23- Quality of Life Questionnaire Breast Cancer − 23.

LIST OF TABLES

DEFINITION OF TERMS

Chemotherapy is defined as the treatment using chemotherapeutic drugs to destroy the cells that comprise the tumour. Such drugs are mixed with the blood and carried to all parts of the body, thereby destroying the sick cells that form the tumour, preventing them from spreading throughout the body

Blood Brain Barrier is comprised of tight junctions of endothelial cells that prevent large molecules and toxic substances from entering the central nervous system (CNS) and the brain

Depression is a common psychiatric disorder characterized by the presence of low mood or loss of interests associated with several other features that are present almost daily for at least two weeks.

Neuropsychiatric Symptoms are mental challenges that are psychiatric manifestations of Cerebral (neuropsychiatric) disorders.

Quality of life: Is the multi-dimensional concept that includes domains related to physical, mental, emotional and social functioning. It is perceived quality of an individual's daily life i.e. an assessment of their well- being or lack thereof.

CHAPTER ONE
INTRODUCTION

1.1 Background

Cancer is the leading cause of death worldwide and accounts annually for 8.2 million deaths (13%) More than 60% of all cancers occur in middle- and low-income countries, including Africa. These regions alone account for 70% of the world's cancer-related deaths (WHO,2014). Breast and cervical cancers are among the five most common cancers diagnosed among women worldwide Breast cancer is the most commonly diagnosed cancer among women in Africa. Breast and cervical cancer can be detected at an early stage with timely access to screening and diagnostic facilities. High breast cancer incidence and mortality rates have been reported in African countries such as the South African Republic and Algeria (Cangussn et al, 2010).

Cervical cancer is another frequently diagnosed gynaecological cancer in Africa and the leading cause of death of women in Eastern Africa, accounting for about 12% of the total new cancer cases and 10% of cancer deaths in Eastern Africa. Eastern Africa, Zambia, Malawi, and Mozambique report the highest cervical cancer rates. Survival rates after a diagnosis of a female cancer are much lower in Africa than in Western countries (WHO :2013). The 5-year survival rates for breast and other gynaecological cancers in Africa are <50% and 30%, respectively, whereas the 5-year survival rates for breast and gynaecological cancers in developed countries are 88% and 74%, respectively. The low 5-year survival rates in Africa are mainly associated with lack of early detection programs, adequate diagnosis, and treatment facilities, resulting in a high proportion of women presenting with late-stage disease (Abdallah el al ;2012).

Women diagnosed with gynaecological cancer in Africa often face many challenges associated with cancer itself, cancer treatments and their health effects, cultural understandings, social and spiritual concerns, and financial constraints, among others. Their quality of life is thus compromised preventing them from being able to fully engage in meaningful life endeavours (Abdallah et al: 2012). Studies have examined the quality of life of African cancer survivors. Yet, to the best of our knowledge, no review

has been conducted to develop a broader understanding of the quality of life among gynaecological cancer survivors in this region. The purpose of this article is to report findings from an integrative literature review on quality of life among gynaecological cancer survivors in African countries (.Meyers et al: 2009)

One in every three people in the United States are expected to be diagnosed with cancer in their lifetime, and more than half of those diagnosed will require chemotherapy as part of their treatment regimen (National Cancer Institute, 2009). Chemotherapy is the mainstay of treatment for various cancer types, and although survival is greatly increased with its use, it can also cause many adverse effects during and following treatment. Cognitive impairment, commonly referred to as 'chemo brain', is one of the most frequently reported post-chemotherapy symptoms among breast cancer survivors, which is also the most studied group in regard to this symptom (Brezden et al, 2009). Inconsistencies exist concerning the impact of cognitive impairment and comparative relationships between self-reporting and cognitive testing. Numerous older studies include cross-sectional designs that failed to utilize a control group within their studies or failed to perform baseline assessments of cognitive functioning. Because of this, there is a wide variation in incidence of chemo brain in the literature, with occurrence rates ranging from as little as 16% to as many as 75% of all patients(Bender et al., 2009).

Common changes in cognitive functioning associated with chemotherapy include executive functioning (including judgment, hindsight and foresight), processing speed or reaction time, working memory, and organizational skills. Chemotherapy-induced impairment of language ability, concentration, memory, and/or attention can cause increased levels of stress and decreased work performance when higher cognitive functioning is required (Ahles et al., 2002; Coyne & Leslie, 2004; O'Shaughnessy, 2003; Saykin, Ahles, & McDonald, 2003).

Numerous studies have evaluated cognitive impairment following chemotherapy and are consistent with a meta-analysis of earlier findings. Recent literature suggests that

chemotherapy has a negative impact on cognitive functioning (Bender et al., 2006). In a controlled longitudinal and cross-sectional study of breast cancer patients receiving chemotherapy, reported cognitive decline in the domains of verbal fluency for patients who received chemotherapy compared to healthy matched controls at three-month follow-up assessments. In a prospective and longitudinal study conducted by (Bender et al. 2006), three groups were described, including one who received chemotherapy alone, one who received chemotherapy with tamoxifen, and another group who did not receive either. Data were collected at three points in time. Cognitive decline in verbal working was found in both treatment groups one year following chemotherapy, and the group who received both

Chemotherapy and tamoxifen also had cognitive decline in visual memory; interestingly, women who received neither treatment had an improvement in cognitive functioning (Lotti et al, 2008.).

1.2 Statement of the problem

The term quality of life (QoL) is used to evaluate the general well-being of individuals and their ability to effectively carry out activities of daily living. According to the World Health Organization (WHO, 2012), quality of life (QoL) defined as individual perception of life, values, objectives, standards, and interests in the framework of culture. The use of Chemotherapy has contributed to an increase in the number of breast cancer survivors in Zambia (MOH Report).However; treatment of breast cancer has a number of physical, neurocognitive and psychological effects which compromised the Quality of Life.

1.3 Significance of the study

Chemotherapy is said be the most effective form of treatment for most cancers. However, this mode of treatment comes with effects which significantly affects quality of life for those receiving it. Therefore, it is hope that this study will Create awareness on how chemo affect the QoL for breast cancer survivors. Enable care givers and therapist relate how the Diagnosis and treatment of breast cancer affect their QoL. Influence Care Givers, Therapist and Policy makers formulate interventions to mitigate this problem.

1.4 Research question

What's the mental wellbeing of women undergoing chemo for breast cancer and their Quality of life in women undergoing chemotherapy for breast cancer?

1.5 General Objective

The study sought to evaluate Quality of life in women undergoing chemotherapy for Breast Cancer at Cancer Disease Hospital in Lusaka Zambia.

1.6 Specific Objectives

1. To access the general mental wellbeing of women undergoing chemotherapy for breast cancer.
2. To evaluate the quality of life in women undergoing chemotherapy for breast cancer.

CHAPTER TWO

LITERATURE REVIEW

This chapter looks at the literature review that highlights the research works done by other scholars. It brings forth various pieces of literature work that is associated to the management of neurocognitive impairments associated with chemotherapy, and the quality of life in women undergoing chemotherapy for breast cancer at cancer diseases hospital. The literature review has been written using the thematic approach. Text books were used; Electronic literature search databases were also used that include PsycINFO, MEDLINE, PubMed, HINARY and Cochrane.

2.1 Mental wellbeing of women undergoing chemotherapy for Breast Cancer

Breast cancer is a major public health problem because of its high incidence and mortality. This neoplasm is probably the most feared by women, especially by the negative stigma brought by its diagnosis and due to its psychological effects, which affect the perception of sexuality and their own personal image (Zandoni et al :2009). This has resulted to stress, anxiety and even depression.

2.3 Anxiety

Anxiety is one of the common symptom that have a related influence on the quality of life for patients with Breast Cancer. However, participation in disease management programs does not seem to be beneficial for BC patients suffering from anxiety (Wang et al 2007). Hence, anxiety goes unnoticed and untreated thereby impacting negatively on the QoL of for BC patients. The diagnosis and treatment burden is so distressing that it cause BC patients to experience anxiety and panic attacks (Wang et al ,2007). These attacks have an effect on the quality of life for patients in the sense that it leads to phobias and these can lead to a heart attack. Anxiety affects the thinking, and perception of patients with BC which then produces confusion and distortions of perception (DSM IV TR)

The other thing is that, anxiety affects negatively patients with BC. Anxiety and stress can increase in heart rate, which has a negative effect on coronary artery perfusion through shorter diastole (Browel et al,2008). This reduces QoL for BC patients as tachycardia reduces myocardial oxygen supply resulting in shortness of breath. Hence, patients become increasingly concerned about their physical state, which will lead to increased anxiety and poor cardiac output.

Furthermore, anxiety affects the patients' well-being and quality of life through intense fear and uncontrolled worry which the patients experience during the course of treatment (DSM IV). Anxiety therefore, affects the daily life functioning activities of the patients with heart failure as heart failure may trigger anxiety itself.

2.3. Depression

Depression is a common psychiatric disorder characterized by the presence of low mood or loss of interests associated with several other features that are present almost daily for at least two weeks. It is a significant problem in the patient with BC. One in five persons with BC has clinical depression and up to 48% have clinically significant depressive symptoms (Fernandes et al,2014). According to the Diagnostic statistical manual of mental disorders, a major depressive symptom sometimes referred to as clinical depression consists of five or more symptoms which persist for a day, almost daily for at least two weeks (Fenandes et al,2014). The influence of clinical depression and depressive symptoms on mortality and hospitalisation in BC patients has been well known. Research findings from a meta-analysis reveals that patients with BC who have depressive symptoms are more than two times as likely to die or experience a cardiac event compared to patients without depressive symptoms. (Baen, et al. 2006)

Depression is a serious medical condition which interferes with the quality of life and performance of an individual. In line with this, Spagnola et al., (2007), opines that BC is accompanied by significant emotional and or mental symptoms which are determinants of one's quality of life. It has related influence on the quality of life for patients with BC through an impaired function in loss of interest in the daily and pleasurable activities such as sex. Depression as a neuropsychiatric symptom has an influence on patients

with heart failure as it reflects a pathological change in the mental sphere in relation to the previous healthy mental state (Meyers et al 2009).

Recent research shows that depression and anxiety are underdiagnosed in cardiac patients by cardiologists and physicians (Wang et al 2008). A possible reason for this low rate of detection is uncertainty among physicians about how to manage this depression in heart failure patients. Hence there is a need for neuropsychological intervention to manage and control the symptoms of depression in cardiovascular diseases in each and every cardiology units.

Furthermore, (Zondoni et al, 2010) postulates that depression leads to insomnia. According to the DSM IV TR, the diagnosis of a depressive symptom expresses itself in insomnia or hypersomnia, diminished interest or pleasure from activities. This has related influence on the quality of life for patients with BC, in that affects the patients daily functioning and it impedes on the normal life as the patients fail to attend to social, work and personal roles. The patient loses interest in almost if not all activities. Wang et al, (2008) opine that patients who suffer from heart failure experience impaired quality of life are more than the general population.

Depression as a neuropsychiatric symptom has related influence on the quality of life to patients with BC. In the sense, that the symptoms burden, the disabling consequences of BC and the treatment procedure impact negatively on daily the life of patients and contribute to a decreased quality of life (Delgado et al,2011). He further points out that HF contributes to severe physical, social, and functional impairment as well as increased psychological distress.

2.4. Quality of life in women undergoing chemotherapy for breast cancer

There has been significant improvement in life expectancy of women with breast cancer due to early diagnosis and the evolution of treatment methods. However, the use of chemotherapy induced neurotoxic injury as it acts directly on neurons, cerebral white or gray matter (Ahles, & McDonald, 2003).Imaging studies have shown changes in white and gray matter with the use of magnetic resonance imaging (MRI) and positron emission tomography (PET) in cancer survivors that received chemotherapy compared

to patients who never received chemotherapy (Ahles, & McDonald, 2003; Inagaki et al., 2007). Additionally, two studies showed increased activation while performing memory tasks on functional MRI for patients who had received chemotherapy compared to those who did not.

Many chemotherapeutic agents are known to cause direct neurotoxicity. As a result, executive functioning, processing speed or reaction time, working memory, and organizational skill are impaired (Brezden et al 2013). This can cause increased levels of stress, anxiety and even depressing resulting in decreased work performance, sexual life, impaired social interactions.as a result an individual's ability to carry out activities of Daily living is affected.

2.5 Fatigue

Fatigue is the expression of different sensations patients mention, such as tiredness and lack of energy. It is a neuropsychiatric symptom that affects the functional limitations for BC patients. For example, fatigue affects the patients' psychological and social conditions, thereby impairing their quality of life. Patients with BC undergo pain which may result from a series of problems they face (Lottie et al 2015). For example, they may experience physical pain due to multiple comorbidities and musculoskeletal pain because of lack of physical conditioning in BC. Loss of function and dependency, which takes place as the disease progresses, may result in fatigue and pains (Ashing et al 2013)

Quality of life is driven by psychological and social factors, pain and fatigue; affect both qualities of life and prognosis BC (Ashing et al 2013). Fatigue is one of the most common and distressing neuropsychiatric symptoms that affect patients with BC. Fatigue has a related influence on the quality of life for patients with BC, by limiting patient's daily physical work and social activities. This can be very distressing and may cause the patient to experience negative moods because the patient cannot do the physical work.

Fatigue is a common complaint of patients with BC, it is also a very elusive and subjective neuropsychiatric symptom and/or common symptom of many physical diseases as well as depression (Ahes et al 2013). It manifests itself as one of the most distressing neuropsychiatric symptoms in patients with HF through extreme exhaustion. Recent research reveals that experiences of fatigue in elderly patients with HF as the main cause recognizing the illness, old age and loneliness (Meyers et al , 2008).

2.6. Insomnia

Sleep is also an important factor for QoL. Poor sleepers tend to fare less well in physical, psychological, and social domains. In addition, poor health perception and lower education level have been identified as factors that can compromise QoL. Among its many features, there is the poor quality of life and excessive daytime sleepiness due to sleep disorders which impair its quality (Spagnola et al 2007). The Diagnostic Statistical Manual of mental disorders defines insomnia as a complaint of difficulty initiating sleep, difficulty in maintaining sleep and or a non-restorative sleep. In other words, insomnia is the perception or complaint of inadequate or poor-quality sleep because of difficulties falling to asleep, waking up frequently during the night with difficulty returning to sleep, waking up too early in the morning and unrefreshing sleep (DSM IV TR). This situation makes a patient have difficulties initiating sleep, difficulties maintaining sleep and non-restorative sleep (Butler et al 2006).

The other thing also is that sleep physiology changes in BC patients, promote intense fatigue, and diffuse pain (Azevedo et al 2015). This contributes to poor QoL for BC patients as the pain and fatigue patients encounter causes them to have a poor quality of sleep. As result of this patients tend to have attention problems during daily activities which make them restless. The inability to sleep and have continued sleep is accompanied by a hindered performance of daytime activities, which is indicated by irritability, aggression, fatigue or low energy and social performances (Meyer et al 2013).

Good quality of life possesses a great challenge for a patient with BC, in that patients experience sleepiness and or difficulties in sleeping. This has related negatively

influence on the patient's well-being and the good quality of life as well as the daily function of patients. Good quality of sleep and continuity of sleep are important to the patient's functional performance and mental quality of life. Difficulties in sleeping and maintaining sleep are two most common reported difficulties among BC patients and are known to cause poor quality of life. The sleeping difficulties affect QoL through the mental, physical and well-being of BC patients. .

Additionally, insomnia does not only affect the patient's quality of life but also cognitive function. A neuropsychological view with regards cognitive function entails all aspects of intellectual function as opposed to the original view of single function(Lottie 2008). Attention, for instance, is a cognitive function that is affected by patients with BC in that the disturbed sleep affects the ability for patients to attention span. Another thing is that Sleep loss affects cognitive functions such as memory encoding, consolidation, plasticity and reconsolidation (Zandoni et al 2010). This aspect affects the QoL life for HF patient as they fail to comply with medication which they are given. The other thing worth noting is that executive functions such as decision making are also affected as some patients may fail to make a good quality decision as a result of poor sleep. Quality of sleep, as well as continuity of sleep, is important to a patient's well-being (Browell et al 2008). They are both independently associated with functional performance and physical and mental quality of life.

CHAPTER THREE

METHODOLOGY

3.1. Study Design

The research employed quantitative approach. A Cross-sectional study was carried out in a specialized unit of Cancer Disease hospital in Lusaka in order to evaluate the quality of life in women undergoing chemotherapy for breast cancer.

3.2. Study Setting

The study was conducted at Cancer Disease Hospital (CDH) in Lusaka Zambia. Being the only Cancer Disease hospital in the country, it implies that the findings of this study were a representative of the country.

3.4. Study Population and sampling procedure

A convenience sample of 50 women with breast cancer, who were undergoing chemotherapy. Participants included those aged greater or equal to 18 years, diagnosed with breast cancer at any stage of disease, being on chemotherapy from the second cycle.

3.6. Recruitment

The study recruited patients above the age of 20 years who will be able to give written consent. Participants who may express unwillingness to participate in the study despite seeking informed consent were at liberty to withdraw. When this happened patient weren't forced or manipulated into participating in the study.

3.7. Inclusion Criteria

Participants included those aged greater or equal to 18 years old, stable and fully conscious, diagnosed with breast cancer at any stage of disease, being on chemotherapy from the second cycle.

3.8. Exclusion Criteria

Breast cancer survivors who underwent mastectomy were not be included .in addition those who were under the age of 18years were not also included.

3.9. Data Collection

Data was collected using a Patient Demographic Form (PDF), Mini Mental State Examination (MMSE) and a modified and standardisation Quality of Life Questionnaire for Breast Cancer − 23 (QLQBR23) was translated and validated for use.

3.10. Data Analysis

The MMSE and QLQBR23 scores will be analysed using SPSS version 20. Firstly raw data was manually coded, cleaned and sorted before analysis. Microsoft Excel spreadsheet was used enter participant identity code, age, gender and CBT sessions scores after baseline. Thereafter, the data was then exported to SPSS version 20, where means and standard deviation of all measurements were calculated. Demographic data were evaluated by descriptive analysis of the variables selected for the characterization of sample.

3.11. Ethical Considerations

Anonymity and confidentiality were upheld. This was done by securing data through locking it up while codes were used on participants instead of names. Clearance from the ERES CONVERGE IRB and the Senior Medical Superintendent of Cancer Disease Hospital was sought.

CHAPTER FOUR

RESULTS AND FINDINGS

4.1 Introduction

There was a significant improvement in life expectancy of women with Breast Cancer due to the possibility of early diagnosis and the use of chemotherapy. This has enabled most women to go back and do their various roles and responsibilities in life. However due to stigma of a diagnosis of breast cancer and neurocognitive effects of chemotherapy, most women expressed anxiety, doubt and even depression. This is because these effects altered their abilities to carry out a number of executive functions and activities of daily living.

4.2. Mental wellbeing of women undergoing chemotherapy for breast cancer

The diagnosis of breast cancer is usually regarded as a death sentence by most women. This has been attributed to the perceptions society has regarding the diagnosis and course of treatment for breast cancer. Moreover, when a breast has cancer, it compromises sexuality, self-image and ultimately affect their self-esteem. This is because the breast does not only add to a woman's identity but it is also a sexual organ. As a result 73% of the participants did not perform well in the domain of attention, memory and language praxis when a mini mental state examination was carried out. The following symptoms were predominant.

4.3. Depression

The study found that depression is a significant problem in women undergoing chemotherapy for breast cancer, it accounted for 26% of participant's. According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision (DSM-IV-TR), a depressive episode, sometimes referred to as clinical depression, consists of five or more symptoms which are present for most of the day, almost daily, for at least two weeks. In addition, depression expresses in depressed mood or loss of

interest or pleasure in pleasurable activities most of the day, nearly every day (DSM-IV-TR). The symptoms cause clinically significant distress in social, occupational, or other important areas of functioning. In addition, the study found out that participants experienced depression in forms of fatigue, insomnia, burden to the family and feelings of sad extremely similar to. Moreover, depression is a symptom burden that is marked with functional limitations and diminished health related QoL.

4.4. Anxiety

Anxiety accounted for 74% of the participants ranging from the diagnosis and the course of treatment. This precipitated impairment of QoL in emotional and psychological wellbeing. According to the DSM IV TR anxiety a transient mental and or emotional reaction to a stimuli or stressors. Anxiety significantly affected the QoL causing poor adherence to treatment. This resulted in psychological distress. Psychological distress affects the treatment adherence behaviour in patients and is said to be associated with increased morbidity and mortality (Domen 2012).

4.5. Quality of life in women undergoing chemotherapy for breast cancer.

The second objective was to evaluate the quality of life in women undergoing chemotherapy for breast cancer at cancer disease hospital in Lusaka**.** The Quality of Life Questionnaire for Breast Cancer − 7 (QLQBR 7) was validated into 7 main variables. The following were the findings:

Results showed that emotional function was the most affected. This had a negative impact on the quality of life for most of the participants resulting them failing to effectively carry out tasks. In addition the treatment affected neurocognitive functions like working memory(25.3), reaction time(21,1) and organisation skills(22.1) the average mean for these three variables was (mean = 22.9).*Refer to the table below*.

Table 1. Means of functions and symptoms of the Quality of Life Questionnaire Breast Cancer - 7 (QLQ-BR7)

Variable of quality of life	Number of participants	Mean score
Working memory	50	25.3
Reaction time	50	21.1
Organisational skills	50	22.1
Sexual performance	50	25.0
Symptomatic variable	**Number of participants**	**Mean score**
Insomnia	50	13.5
Fatigue	50	12.4
Loss of appetite	50	11.6

These functional skills are crucial for a health quality of life for an individual. For example, a banker who has an impairment regarding functioning in the above-mentioned skills can eventually lose her job because it demands someone to perform. This can result into stress and depression.

The symptoms with the highest scores were insomnia (13.1), fatigue (12.4.) and loss of appetite (11.6). According to the Quality of Life Questionnaire− Breast Cancer 23, the mean score for Side effects was 17.3, *as tabulated above* meaning that many women experience side effects of chemotherapy.

4.6. Insomnia

Sleep is also an important factor for QoL. The Diagnostic Statistical Manual of mental disorders defines insomnia as a complaint of difficulty initiating sleep, difficulty in maintaining sleep and or a non-restorative sleep. In other words, insomnia is the perception or complaint of inadequate or poor-quality sleep because of difficulties falling to asleep, waking up frequently during the night with difficulty returning to

sleep, waking up too early in the morning and un-refreshing sleep (DSM IV TR). This situation makes a patient have difficulties initiating sleep, difficulties maintaining sleep and non-restorative sleep (Johansson and Brostron 2013).. This contributes to poor QoL for most breast cancer survivors. As result of this patients tend to have attention problems during daily activities which make them restless. The inability to sleep and have continued sleep is accompanied by a hindered performance of daytime activities, which is indicated by irritability, aggression, fatigue or low energy and social performances

Furthermore, most participants experienced disrupted sleep which led to different daytime effects such as fatigue, bad memory and inability to concentrate. Difficulties in sleeping and maintaining sleep are two most common reported difficulties among BC patients and are known to cause poor quality of life.

4.7. Fatigue

Fatigue is the expression of different sensations patients mention, such as tiredness and lack of energy. It is a neuropsychiatric symptom that affects the functional limitations for BC patients. For example, fatigue affects the patients' psychological and social conditions, thereby impairing their quality of life. For example, they may experience physical pain due to multiple comorbidities and musculoskeletal pain because of lack of physical conditioning in BC. Loss of function and dependency, which takes place as the disease progresses, may result in fatigue and pains.

Quality of life is driven by psychological and social factors, for heart failure patients, pain and fatigue; affect both qualities of life and prognosis BC. Fatigue is one of the most common and distressing symptoms that affect patients with heart BC. Fatigue has a related influence on the quality of life for patients with BC, by limiting patient's daily physical work and social activities. This can be very distressing and may cause the patient to experience negative moods because the patient cannot do the physical work.

4.8. Appetite

In this research, results show that eating behaviour such as appetite loss significantly affected the participants QoL. This symptom involved harmful behaviour and attitude patterns that impacted negatively daily functioning of participants.

In addition, BC patients have symptoms that can affect their food intake, for example tiredness when strained, breathing difficulties and loss of appetite. This symptom is also caused by chemotherapy agents and impact negatively on the quality of life.it is also important to note that pharmacological therapy leads to a loss of appetite, and it makes food intake inadequate to fill the required energy and nutritional needs

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

The limitations of the results of this study are related to the cross-sectional design that does not allow establishing relations of cause and effect. The study sought to evaluate the quality of life for in women undergoing chemotherapy for breast cancer at cancer disease hospital in Lusaka. The use of chemotherapy has contributed to the raise of breast cancer survivor's world over and in Zambia (MOH). This was in line with a study done by Wong et al (2013) where chemotherapy was associated in an increase in life expectance for breast cancer survivors.

In relation to the objectives however, neuropsychiatric symptoms were identified and how they influence the quality of life based on factors such as depression, anxiety, appetite and sleeplessness has been tabulated. These factors affect the emotional/psychological and mental aspect of quality of life. This chapter discusses how the results from this study compares with similar studies based on the mentioned categories.

5.2. Mental wellbeing of women undergoing chemotherapy for breast cancer

The diagnosis of breast cancer is usually regarded as a death sentence by most women. This has been attributed to the perceptions society has regarding the diagnosis and course of treatment for breast cancer. This was in line with Arabiate et al (2013) concluded that stigma was a major problem to most women with breast cancer. Moreover, when a breast has cancer, it compromises sexuality, self-image and ultimately affect their self-esteem. This is because the breast does not only add to a woman's identity but it is also a sexual organ.this is eched in a study done by Nicolussi et al(2011) who found that most women who were diagnosed with brest cancer had problems of low self-esteem. As a result 73% of the participants did not perform well

in the domain of attention, memory and language praxis when a mini mental state examination was carried out. The following symptoms were predominant

5.2.1. Depression

The study found that depression is a significant problem in women undergoing chemotherapy for breast cancer.this was in contrast to a study done by Browell et al (2008) who associated depression to poor social support and not as a result of being diagnosed with breast cancer. According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision (DSM-IV-TR), a depressive episode, sometimes referred to as clinical depression, consists of five or more symptoms which are present for most of the day, almost daily, for at least two weeks. In addition, depression expresses in depressed mood or loss of interest or pleasure in pleasurable activities most of the day, nearly every day (DSM-IV-TR). The symptoms cause clinically significant distress in social, occupational, or other important areas of functioning, in line with Browell et al (2008) who was concern with psychosocial factor affecting women with breast cancer. In addition, the study found out that participants experienced depression in forms of fatigue, insomnia, burden to the family and feelings of sad extremely similar to. Moreover, depression is a symptom burden that is marked with functional limitations and diminished health related QoL.This was in agreement with Cagusen et al (2010) who linked symptoms like fatigue, insomnia to depression secondary to breast cancer.

5.2.2. Anxiety

Anxiety accounted for 74% of the participants ranging from the diagnosis and the course of treatment. This precipitated impairment of QoL in emotional and psychological wellbeing. According to the DSM IV TR anxiety a transient mental and or emotional reaction to a stimuli or stressors. Anxiety significantly affected the QoL causing poor adherence to treatment. This resulted in psychological distress. This was in line with Wong et al (2007) linked anxiety poor distress and poor adherence to treatment. Psychological distress affects the treatment adherence behaviour in patients and is said to be associated with increased morbidity and mortality.

5.2.3 Quality of life in women undergoing chemotherapy for breast cancer.

The second objective was to evaluate the quality of life in women undergoing chemotherapy for breast cancer at cancer disease hospital in Lusaka. The Quality of Life Questionnaire for Breast Cancer − 7 (QLQBR 7) was validated into 7 main variables. The following were the findings:

Results showed that emotional function was the most affected. This had a negative impact on the quality of life for most of the participants resulting them failing to effectively carry out tasks. This was in agreement with Fernandes et al (2014) who associated emotional function to altered quality of life for women who were undergoing chemotherapy. In addition the treatment affected neurocognitive functions like working memory (25.3), reaction time (21,1) and organisation skills (22.1) the average mean for these three variables was (mean = 22.9). These functional skills are crucial for a health quality of life for an individual. For example, a banker who has an impairment regarding functioning in the above-mentioned skills can eventually lose her job because it demands someone to perform. This can result into stress and depression. This is in line with a study done by Lottie et al (2008) where he attributed chemotherapy to a number neurocognitive impairment like altered reaction time working memory,language problems and impaired sexual desires. He concluded that these factors had a negative effect on the quality of life on women undergoing breast cancer treatment.

The symptoms with the highest scores were insomnia (13.1), fatigue (12.4.) and loss of appetite (11.6). According to the Quality of Life Questionnaire− Breast Cancer 23, the mean score for Side effects was 17.3, *as tabulated above* meaning that many women experience side effects of chemotherapy.

5.2.4 Insomnia

Sleep is also an important factor for QoL. The Diagnostic Statistical Manual of mental disorders defines insomnia as a complaint of difficulty initiating sleep, difficulty in maintaining sleep and or a non-restorative sleep. In other words, insomnia is the

perception or complaint of inadequate or poor-quality sleep because of difficulties falling to asleep, waking up frequently during the night with difficulty returning to sleep, waking up too early in the morning and unrefreshing sleep (DSM IV TR). This situation makes a patient have difficulties initiating sleep, difficulties maintaining sleep and non-restorative sleep.. This contributes to poor QoL for most breast cancer survivors.in was in contrast with Baen et al(2008) who found out that insomnia was not necessarily related to the prognosis and treatment for breast cancer but due to poor Social support. As result of this patients tend to have attention problems during daily activities which make them restless. The inability to sleep and have continued sleep is accompanied by a hindered performance of daytime activities, which is indicated by irritability, aggression, fatigue or low energy and social performances. This was in line with Cangussn et al(2010) who attributed lack of sleep in breast cancer survivors to aggression and irritability.

Furthermore, most participants experienced disrupted sleep which led to different daytime effects such as fatigue, bad memory and inability to concentrate. Difficulties in sleeping and maintaining sleep are two most common reported difficulties among BC patients and are known to cause poor quality of life. This as in agreement to the findings of Ashiing et al(2007) in his study where he demonstrated how insomnia could contribute memory and concentration problems.

5.2.5. Fatigue

Fatigue is the expression of different sensations patients mention, such as tiredness and lack of energy. It is a neuropsychiatric symptom that affects the functional limitations for BC patients. For example, fatigue affects the patients' psychological and social conditions, thereby impairing their quality of life. Delgado et al (2011) observed that fatigue contributed to a failure to carry out normal task which led to much distress among breast cancer survivors.

Quality of life is driven by psychological and social factors, pain and fatigue; affect both qualities of life and prognosis in BC. Fatigue is one of the most common and distressing symptoms that affect patients with heart BC. Fatigue has a related influence

on the quality of life for patients with BC, by limiting patient's daily physical work and social activities. This can be very distressing and may cause the patient to experience negative moods because the patient cannot do the physical work. Wang et al (2007) demonstrated how anxiety and fatigue impaired physical function and emotional stability for most women who underwent chemotherapy for breast cancer.

5.2.6. Appetite

In this research, results show that eating behaviour such as appetite loss significantly affected the participants QoL. This symptom involved harmful behaviour and attitude patterns that impacted negatively daily functioning of participants. On the contrary Lotti el al (2008) found out that chemotherapy for breast cancer had no bearing on the appetite for the patient as long as they were given food in specific time.

In addition, BC patients have symptoms that can affect their food intake, for example tiredness when strained, breathing difficulties and loss of appetite. This symptom is also caused by chemotherapy agents and impact negatively on the quality of life.it is also important to note that pharmacological therapy leads to a loss of appetite, and it makes food intake inadequate to fill the required energy and nutritional needs. Butler et al (2006) demonstrated how chemotherapy affected loss of appetite for most clients under his study due to its site effects.

CHAPTER SIX

CONCLUSION

6.1 Introduction

Breast cancer is still a major public health problem because of its high incidence and mortality. It is dreaded by most women due to negative stigma brought by its diagnosis and psychological effects, which affect the perception of sexuality and their own personal image. There has been a significant improvement in life expectancy of women with breast cancer because of early diagnosis and Chemotherapy. However, the use of chemotherapy bring about a number of neurocognitive impairments which affect the quality of life for most of the breast cancer survivors.

The results showed that most women were affected by the use of chemotherapy. The use of chemotherapy effected: working memory, organisational skill, reaction time and sexual performance to resulting to low self-esteem, anxiety and depression. This had a negative bearing on their quality of life.

6.2.0 Recommendation

6.2.1 Research Related Recommendations

The problems associated with neurocognitive impairments and their impact on the quality of life in women undergoing chemotherapy for breast cancer has been adequately described. Interventions such as Cognitive Rehabilitation (CR) as treatment option for neurocognitive impairments associated to chemotherapy for breast cancer. There is need for a more comprehensive research on the efficacy of CR intervention alone as well as in combination with other treatment modalities in order to increase the use of psychotherapeutic services and bridge the gap that exist between pharmacological and non-pharmacological such as Cognitive Rehabilitation and cognitive behavioural therapy(CBT).Further research should focus on how cognitive rehabilitation and prechemotheray counselling services can be robust in the provision of oncology service in Zambia.

6.2.2 Psycho education and Pre-chemo Counselling

Psycho education and pre-chemo counselling is a key to enhancing adherence to chemotherapy and improving quality of life for breast cancer survivors. It is important to note that the diagnosis of breast cancer alone is enough to Cause stress and depression to most Zambian women. In addition to the process and stigma associated to undergoing chemotherapy is a major problem to the provision of oncology services. There the importance of robust counselling and psycho education cannot be overemphasised.

6.2.3 Cognitive Rehabilitation Sites

There is need to establish cognitive rehabilitation sites which will provide services designed to meet the needs of breast cancer survivors.

REFERENCES

Ahles,el al , management of chemotherapy induce neurocognitive impairments for women with breast cancer in northern Tehran Iran „*Journal of Oncology Nursing*.2005, 22:103-105

Arabiat DH, Al Jabery MA. Health related quality of life in paediatric chronic health conditions: A comparative study among children and adolescents in Jordan. Health. 2013; 5(11B):19-24.

Ashing-Giwa KT, Tejero JS, Kim J, Padilha GV, Hellemann G. Examining predictive models of HRQOL in a population-based, multiethnic sample of women with breast carcinoma. *Journal of Neuroscience* 2007; 16(3):413-28.

Baena-Canada JM, Estalella-Mendoza S, Gonzalez-Guerrero M,Exposito-Alvarez I, Rosado-Varela P, Benitez-Rodriguez E.Influenceof clinical and biographical factors on the quality of life of women with breast cancer receiving adjuvant chemotherapy. *Journal of Oncology Nursing*. 2011;26 (5):299-305.

Beckjord E, Campas BE. Sexual quality of life in women with newly diagnosed breast cancer. *Journal Psychosocial Oncology* 2007; 25(2): 9-36.

Brezden CB, Phillips KA, Abdallah M, et al. Cognitive function in breast cancer patients receiving adjuvant chemotherapy. *Journal of Clinical Oncology* 2000;18:2695-2701

Broeckel JA, Thors CL, Jacobsen PB, Small M, Cox CE. Sexual functioning in long-term breast cancer survivors treated with adjuvant chemotherapy. *Journal of Neuroscience* 2002;75(3):241-8.

Browall M, Ahlberg K, Karlsson P, Danielson E, Persson LO, Gaston-Johasson F. Health-related quality of life during adjuvant treatment for breast cancer among postmenopausal women. *European Journal of Oncology Nursing*. 2008; 12(3):180-9.

Butler, A. C., Chapman, J. E. Forman, E. M., & Beck, A. T. 2006. The empirical status of cognitive-behavioural therapy: A review of meta-analyses. *Clinical Psychology Review, 26*, 17–31.
.
Cangussu RO, Soares TBC, Barra AA, Nicolato R. Depressive symptoms in breast cancer: Beck Depression Inventory - Short Form. *Journal of neuroscience*. 2010; 59(2): 106-10..

Caplette-Gingras A, Savard J. Depression in women with metastatic breast cancer: A review of the literature. Palliat Support Care. 2008; 6(4): 377-87.

Cohen, LS, Barry, LZ, and Marvin, M, 1992. Yale University School of Medicine Book. New York, William Morrow and co.

Conceicao LL, Lopes RL. The daily life of mastectomized women: from diagnosis to chemotherapy. Rev Enferm *Journal of Oncology Nursing*. 2008; 16(1):26-31.

Delgado-Sanz MC, Garcia-Mendizabal MJ, Pollan M, Foriaz MJ, Lopez-Abente G, Aragones N, Gomez BP. Heath-related quality of life in Spanish breast cancer patients: a systematic review. Health Quality Life Outcomes. 2011; 9: 3.

European Organization for Research and Treatment of Cancer Data Center. European Organization for Research and Treatment of Cancer Quality of Life Questionnaire - EORTC (QLQ- C30) Scoring Manual [Internet]. Brussels, Belgium; 2001[cited 2014 Mai 10].
Available from: http://www.eortc.be/qol/files/SCManualQLQ-C30.pdf.

Fernandes AF Cruz A, Moreira C, Santos MC, Silva T. Social support provided to women undergoing breast cancer treatment: a study review. Adv Breast Cancer Res. 2014; 3:47-53.

Keime-Guibert F, Napolitano M, Delattre JY. Neurological complications of radiotherapy and chemotherapy. *Journal of Neurology* 2009; 245:695-708.

Lotti RCB, Barra AA, Dias RC, Makluf ASD. [Breast cancer treatment and its impact in quality of life]. Rev Bras Cancerol. 2008; 54(4):367- 71.

Lustberg, L, & Reynolds, CF , 2000, 'Depression and insomnia: Questions of cause and effect', *Sleep Medicine Reviews, 4*, 253-262.
Meyers CA. Neurocognitive dysfunction in cancer patients. *Journal of Clinical Oncology* Huntingt 2000; 14:75-79.

Nicolussi AC, Sawada NO. Quality of life of breast cancer patients in adjuvant therapy. Rev Gaucha Enferm. *Journal of Oncology Nursing* 2011; 32(4): 759-66. .

Olin JJ. Cognitive function after systemic therapy for breast cancer. *Journal of Clinical Oncology* 2001; 15:613-624.

Samya, et al Health-related quality of life in women with breast cancer undergoing chemotherapy at a specialised hospital in Fortaleza Brazil, *Journal of Oncology Nursing*.2013 18:234-256

Silva CB, Albuquerque V, Leite J. Quality of life in patients carrying breast neoplasms submitted to chemotherapy. Rev Bras Cancerol. *European Journal of Oncology* 2010; 56(2): 227-36

Spagnola S, Zabora j, Brintzenhofeszoc K, Hooker C, Cohen G, Baker F. The satisfaction with life domains scale for breast cancer (SLDS-BC).Breast J. 2003; 9(6):463-71.

Tuxen MK, Hansen SW. Neurotoxicity secondary to antineoplastic drugs. Cancer Treat Rev 1994; 20:191-214

Wong WS, Fielding R. Change in quality of life in Chinese women with breast cancer: changes in psychological distress as a predictor. Support Care Cancer.*European Journal Of Oncology* 2007; 15(11):1223-30.

Zandonai AP, Cardozo FMC, Nieto ING, Sawada NO. Quality of life in cancer patients: integrative review of Latin American literature. Rev Eletron Enferm. 2010; 12(3):554-61. Portuguese.

Appendix i: Information sheet

Confidentiality

All the information including your name and all your personal and medical details will be kept confidential. No individual will be identifiable in any reports or publications. All information collected and the counseling sessions will be destroyed after transferring the data to the computer where initials of your names will be replaced by computer number.

Your approval will be confirmed by a tick in each of the boxes on the consent form. You will also be required to indicate your name, signature, or your thumb print on this form and the consent form. **I invite you to voluntarily take part in the study.** If you agree to take part in the study we may now proceed:

Respondent signature: …………… / Thumb …….............   Date: ………………......

For any queries on this study, you are free to contact me physically or on the following address:

Fanwell Daka.

University Teaching Hospital (UTH), Department of Psychiatry, Lusaka.

E.MAIL: dakafdk@gmail.com mobile: 0968 222444.

Dr.Ravi Paul. HOD (Supervisor), Psychiatry department, UTH. Mobile; 0976744654.

Feel free to contact:

THE CHAIRPERSON

ERES CONVERGE IRB

33 Joseph Mwilwa Road

Rhodes Park, LUSAKA.

Tel: 0955 155633/ E-mail: eresconverge@yahoo.co.uk

Signature/Thumbprint of participant _____ Date _____

Signature of Researcher to Consent Process _____ Date _____