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Assessment of Anxiety and Depression Among Breast Cancer Patients Undergoing Treatment in Ghana

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Abstract

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Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
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Public Health

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Abstract

Breast cancer patients undergoing radiotherapy often experience severe levels of anxiety and depression. There is a gap in the research literature from Africa, particularly from Ghana, with few studies focusing on the assessment of anxiety and depression among breast cancer patients undergoing radiation treatment. A better understanding was essential to promote efforts to help breast cancer patients cope with their diagnosis and treatment and increase their overall quality of life. This mixed method study examined breast cancer patients in Ghana undergoing radiotherapy and their responses related to anxiety and depression through a concurrent triangulation involving an interview with selected professional participants and a detailed patient survey. Patients completed 2 modified scales, the Patient Health Questionnaire and Depression Anxiety Stress Scale. The sample consisted of 100 patients between the ages of 20-89. Individual interviews were held with 6 professionals with a minimum of 5 years of work experience. Themes were generated through open coding of the interview data, while multiple regression was performed to determine the relationship between depression and anxiety with the independent variables . Findings of this study indicated the need intervene through counseling and education on behalf of patients in Ghana as they undergo breast cancer treatment. Age and monthly income of patients were statistically significant in predicting the anxiety and depression among the patients. The study's implications will lead to positive change when all stakeholders take on the responsibility of implementing measures to promote coping strategies for breast cancer patients in Ghana.

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Dedication

I dedicate this dissertation to my charming wife, Justina Baaba Kyei, and my lovely children, Penelope, Carina and Bennett Kyei. Penelope and Carina, it seems like a dream, but you all grew up during the period of my dissertation. Justina, your strength, and confidence in me kept me going through this whole time and you never failed to help me keep on, even when I felt. It is such an honor to be my wife and the mother of my children. With all the sacrifices you made for me, and the continuous love you have shown me, I will surely look forward to seeing you forge ahead for your dreams. I appreciate all that you have done for me and all the others you did without me because I was busily writing or studying or traveling for my Residencies. I pray that God will reward you with a satisfying life, and your life becomes pleasant all the days ahead. The God of our Spiritual Father, Bishop Gideon Titi-Ofei, bless you abundantly.

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Chapter 1: Introduction to the Study

Introduction

The interest to study anxiety and depression among cancer patients in Ghana started with keen observation and note-taking that I conducted over 12 years as a radiation therapist. The interest developed into a study and begun in 2014 with a focus on breast cancer. Cancer treatment in Ghana is costly, with inadequate patient's support systems to cover treatment and chemotherapy drugs. These and many other multifactorial reasons lead to several levels of anxiety and depression prevalent amongst the patients.

Anxiety is the feeling of fear, distress, and uneasiness of an imminent endangerment (Antwi, Kyei, Gawugah, Opoku, & Ogbuokiri, 2015), and in the setting of this study, anxiety was the central emotional distress among patients undergoing cancer treatment. According to Bali, (2015), anxiety has both physiological and psychological components. Depression is a symptom expressed through tireless sensations of hopelessness, unhappiness, lack of concentration, lack of energy, and insomnia, especially with a cancer diagnosis (Healthline, 2015). Breast cancer is the most common cancer among women globally according to Ward et al., (2015), and the World Health Organization (WHO) predicted it as the most likely reason a woman will die of cancer (WHO, 2007). WHO, in their 2013 global estimates, indicated that cancer of the breast was common in both the developing and the developed world with an estimated average of over 508 000 deaths every year (WHO 2013). According to studies done in Ghana by Wiredu & Armah, (2006) and Biritwum & Amaning, (2000), breast cancer is the common cause of mortality and most hospital admissions among Ghanaian women.

This study on anxiety and depression among breast cancer patients could potentially influence breast care treatment and subsequently post treatment management at all stages. Findings from the study could be used to modify treatment and supportive care protocols for the management of breast cancers in Ghana.

Background of the Study

Cancer of the breast happens to be one of the most impactful diseases worldwide and in Ghana; it accounts for the highest number of referrals at the study site. A study by Gukas et al., (2005) in Ghana reported that breast cancer in the indigenous Black African population is often severe, with unfavorable prognostic features. These functions include age at presentation, diagnosis with advanced stages, high-grade histological subtypes, large tumor size, and low rate of hormone receptor positivity (Ikeoluwapo et al., 2016). These features are believed to explain why most African women are more likely to die from the disease than women from developed countries (Ohene-Yeboah, & Adjei, 2012).

The treatment of breast cancer has evolved over the years, offering patients high rates of survival (Scharl, Kühn, Papathemelis, & Salterberg, 2015). Several studies have demonstrated that these patients are usually at greater risk of developing psychological distress leading to some level of anxiety and depression (Arvidsdotter, Marklund, Kylén, Taft, & Ekman, 2015; Schetter & Tanner, 2012). Furthermore, this distress link among breast cancer patients extends to the post-treatment period with depressive and anxiety disorders (Vin-Raviv, Akinyemiju, Galea, & Bovbjerg, 2015). According to studies by Coolen, (2012) and Institute of Medicine Committee on Psychosocial Services to Cancer Patients/Families in a Community Setting, (2008), clients receiving treatment have fears and concerns regarding mortality. Other concerns expressed by patients in the same study were disease recurrence, body image impairment, especially with mastectomy, alteration hormonal femininity treatment, and sexuality, as well as attractiveness with spouses and loved ones.

Below are some selected articles involving assessment of anxiety and depression among breast cancer patients:

- Husson, Mols, and Van de Poll-Franse (2011) provided information through a systematic review of the relation between health-related quality of life and information provision, depression, and anxiety among cancer survivors.
- Hassan et al. (2015) assessed breast cancer patients undergoing treatment, their status and other contributing factors that lead to anxiety and depression. They also looked at supports and care administered to participants with a high risk of anxiety and depression.
- Vahdaninia, Omidvari and Montazeri (2010) and Jacobsen and Jim (2008) provided different psychosocial interventions for anxiety and depression in adult cancer patients, in particular on the family and patients' illness characteristics. They also looked at factors that predicted levels of anxiety and depression among breast cancer patients.
- Research by Burgess et al. (2005) and Dauchy, Dolbeault, & Reich, (2013) assessed anxiety and depression among breast cancer patients using observational cohort studies focusing on the role of pain, the cancer type, and the similar treatment.

- So et al. (2010) examined the level of anxiety and depression and their effects on the quality of life of patients with breast cancer undergoing chemotherapy or Radiotherapy.
- Jadoon, Munir, Shahzad, & Choudhry, (2010) used a cross-sectional study to assess anxiety and depression in adult cancer outpatients.

What was missing in the literature were studies that focused on determining levels of depression and anxiety and how this assessment impacted treatment outcome for breast cancer patients undergoing radiotherapy. A more complete understanding of these issues resulting from this study promotes positive social change in three different ways. First, it serves the cancer population, especially patients undergoing breast cancer treatment, to help them manage depression and anxiety. Second, it enhances their efforts for coping, and third, it increases the overall quality of life of these patients undergoing treatment.

This research has brought to light the significance of the level and the need to assess breast cancer patients regularly while they undergo their treatment regime. This study also addressed diagnosis and treatment of breast cancer and the overall workload of the staff attending to patients undergoing treatment.

Problem Statement

Studies conducted by Watts, Prescott, Mason, McLeod, and Lewith (2015) and Birnie, Garland, and Carlson (2009) have established that every cancer patient in their cancer journey will at some point experience some degree of anxiety and depression. The authors further indicated that this experience progresses during their treatment duration and post treatment. The authors suggested that families do suffer from the effects of anxiety and depression in patients undergoing treatment. A phase of emotional shock and disbelief is common as part of the patient's psychological characteristics after a diagnosis is made, followed by anxiety (Birnie et al., 2009).

According to Hassan et al. (2015), breast cancer is one of the most feared diseases among women, and it could induce some level of changes of psychological disorders such as anxiety and depression. According to a study by Kyei, Arthur, Vanderpuye, & Antwi, (2008), the majority of breast cancer patients undergoing treatment at the study site were not comfortable and satisfied with the trends of the radiation treatment they received. This unsatisfactory nature was evidenced by the degree of complaints leading to an intensification in their levels of anxiety and triggering many levels of depression (Jadoon et al., 2010).

Among the study population, anxiety and depression are the most dominant symptoms that are usually under predicted and undertreated from observations. According to Joffe et al., (2012), depression and anxiety reduce the lifespan of patients and affect their overall quality of life. Anxiety is common in patients with advanced disease and associated with physical disability, augmented health difficulties, as well as poor quality of life (Lenze & Wetherell, 2011). Depression, on the other hand, leads to increased mortality, affects the total well-being of clients, and disturbs the daily functioning of patients undergoing treatment (Martín-María et al., 2016).

Several studies including Hassan et al. (2015), Dauchy et al. (2013), and So et al., (2010) have been conducted in the developed world on anxiety and depression. This research has led to a good understanding of some key features associated with anxiety and depression, though there is a gap in literature with Africa, particularly for Ghana. Among all the research studies identified, only a few have focused on the assessment of anxiety and depression among breast cancer patients undergoing radiation treatment (Srivastava et al., 2016; Hassan et al., 2015; Chintamani et al., 2011; Dastan & Buzlu, 2010; Vahdaninia et al., 2010). These studies were mostly in India, Iran, Malaysia, Turkey, and the United Kingdom. None of these studies have been done in Ghana, West Africa, or even Africa at large to assess the level of anxiety and depression among breast cancer patients undergoing Radiotherapy.

Purpose of the Study

With this study I aimed to find various interventions for depression and anxiety among breast cancer patients in Ghana. I used a mixed method design to gather both quantitative and qualitative data. The qualitative data were from interviews with selected working participants while the quantitative data came from a non probabilistic approach using a structured questionnaire to assess the severity and frequency of anxiety and depression as well as the therapy and the quality of life experienced by patients undergoing breast cancer treatment in Ghana.

Research Questions and Hypothesis

The research questions for this study were;

RQ1-Qualitative: What are the experiences of breast cancer patients undergoing radiotherapy with high-level anxiety and depression?

RQ2-Quantitative: How does the effect of breast cancer stage, the cost of treatment, and waiting time affect a patient's level of anxiety, depression, and treatment responses?

H_0: There is no significant relationship between the responses of breast cancer patients on their treatment and their level of anxiety and depression and treatment response.

H_1: There is a significant relationship between the responses of breast cancer patients on their treatment and their level of anxiety and depression and treatment response.

Theoretical Framework

The application of the health action process approach (HAPA) theory is essential in this breast cancer assessment, and it is in the group of the behavioral theories (Schwarzer, 2008). This theory is a psychological theory of health behavior change developed by R. Schwarzer in 2008. The model was used to describe, predict, and explain breast cancer treatment processes that lead to anxiety and depression. It was also used to examine psychological concepts that mutually target and clarify what influences patients' depression and anxiety during the treatment journey. The theory provided frameworks that inform preventive action during the treatment trajectory. The study comprises three stages:

1. the informed decision-making stage, through the help of the patients and caregivers or family members;
2. the treatment stage; and

3. The post treatment phase.

Nature of the Study

I used a mixed method design to gather both quantitative and qualitative data. The interviews that were qualitative in this research were with some selected staff who worked in close collaboration with patients (doctors, nurses, radiation therapists). The quantitative data was a representative survey with questionnaire using a sample of 100 and with a non probabilistic approach because there was no appointment system for patients undergoing treatment for the assessment. The selection of patients took place as and when patients enrolled in the treatment after they signed indicating consent. A collection of data for the study was done using a semi structured questionnaire that was a modified version of Patient Health Questionnaire and the Depression Anxiety Stress Scales. Patient demographics such as the age, sex, education, marital status, and income level were measured. The period of treatment, waiting times, type of cancer, and the remedy for the anxiety and depression experienced were measured as well.

Assumptions

In this study, the assumption was that the selection of participants who volunteered to participate in the study was not biased. Another assumption was that the participants (patients) responded to the questionnaire honestly, and the members of the working team (professionals) reacted to the interview fairly. An additional assumption was that I did not influence the responses of the participants on the items administered. Finally, I assumed the sample to be representative of the entire population.

Scope and Delimitations

The extent of the study involved the assessment of anxiety and depression during their treatment trajectory as the independent variable and the relationship between the responses of breast cancer patients as dependent variables. Also, there was a careful examination of the anxiety and depression and how these affected the overall treatment outcome. Through this study I assessed the relationships as listed in the research questions and hypotheses. I used a convenient sampling of patients undergoing breast cancer treatment in Ghana, and the population consisted of all breast cancer patients referred to the Oncology Department of the Korle-Bu teaching hospital. There have been few theories that relate to the problem statement; however, the only one that could relate primarily to the core was the HAPA.

Limitations

A limitation of a study is the standard structures within the designs of the methodology that set boundaries on the clarification of the results (Labaree, 2009). The limitations of this study stemmed from three levels of issues. The first was the recruitment of patient participants for the quantitative study. The plan was to select patients before the start of radiation therapy. However, this limited the selection because not every patient ended up being treated. In some instances, the cost of treatment alone prevented patients from undergoing treatment; other occurrences included the death of patients awaiting treatment and other multifactorial reasons. I planned to begin recruitment directly from participants who had begun their treatment.

The second limitation was the language barrier because not all the patients spoke, read, or wrote in English. The plan was to help in translation into the local languages where the need arose. I translated the questionnaire into the local language during the data collection, and that assisted the whole process. Also, I excluded non-Ghanaians from the study.

The third and final limitation was the fact that some patients did not respond honestly to the survey questions for fear that the staff may wrongly interpret it. I continuously assured patients to gain the firmest of confidence in their responses to the questions.

Significance of the Study

Through the assessment of anxiety and depression among breast cancer patients undergoing radiotherapy in Ghana, the study could offer oncology care teams (radiation oncologists, radiation therapists, and oncology nurses) an understanding of the common elements of anxiety and depression. Through the management of anxiety and depression, the quality of life of breast cancer patients undergoing radiotherapy could improve, particularly during their end-of-life stage. The expectation was that the study would promote positive social change in the form of coping strategies and greater awareness of the conditions of breast cancer with the aim of preventing it. The latter would occur through various levels of cancer education to both the client and the caregivers. With the coping strategies, patients undergoing treatment could benefit from daily tips on breast cancer management from the oncology nurses.

The contribution of the various coping mechanisms resulting from the survey through the feedback of the patients undergoing treatments and the interactions with the working staff could help alleviate these emotional symptoms and ensure the total well-being of the patients. The study examined factors that were critical and impacted patients' overall treatment performance, future implications, and overall social life. Findings from the study could also be used to plan policies that could support methods beneficial to the advancement of oncological services in Ghana and Africa since many neighboring countries in the West Africa patronize the oncology services in Ghana. The expectation was that the study would inform family members and caregivers to make conscious decisions on managing a patient during treatment and post treatment stages. Finally, the possible positive social change resulting from the study could be seen globally and locally by providing a basis for future research, especially regarding cancer and depression and anxiety.

Summary

In the next chapter I review the literature of the various components of the study centering on the main areas such as search criteria, the gap in the literature, the social implication of the survey, and the HAPA theory and its influence on and alignment with the study. I also look at breast cancer in Ghana and the need for awareness for early presentation. Finally, I focus on the anxiety and depression, causes, symptoms, prevalence, interventions, and the validity of the scales for the study.

Chapter 2: Literature Review

Introduction

According to a study by Kyei, Arthur, Vanderpuye, & Antwi, (2008), the majority of breast cancer patients undergoing treatment at the study site were dissatisfied with the radiation treatment they received. This unsatisfactory nature was evidenced by the various degrees of complaints leading to an intensification in the patients' levels of anxiety and triggering many levels of depression (Jadoon et al., 2010). This study elucidated the various interventions required to minimize depression and anxiety among breast cancer patients undergoing radiation therapy in Ghana.

In this chapter I review current literature in the field of public health and social science. The search criteria covered areas such as breast cancers, a population in Ghana with cancer of the breast, and those undergoing radiotherapy at the oncology unit at the study site. The search further considered the Ghanaian culture and the level of occurrences of breast cancer among the Ghanaian population. The review covers the theory of the HAPA that I used as a framework for this study. This includes a review of HAPA and its influence on the study as well as its alignment with the study. Also, there is a thorough discussion of the risk factors of breast cancers and the associated levels of anxiety and depression. The review also covers the causes, prevalence, symptoms, assessment, disorders, and measures of depression and anxiety among breast cancer patients. Finally, the literature search looked for information on ways to manage breast cancer patients undergoing radiotherapy who presented with a high level of anxiety and depression.

Search Criteria/Description of Literature Search

A literature search conducted covered all areas of anxiety and depression. I performed the search using various search engines such as Google Scholar, Academic Search Premier, Medline, Psych Articles, EBSCOhost, PsycINFO, MEDLINE, PubMed, Academic Search Complete, CINAHL Plus with Full Text, Cochrane Database of Systematic Reviews, ProQuest, and SocINDEX. A thorough examination took place on several physiological variables in breast cancer progression such as anxiety, depression that extends to anger, blame, coping, helplessness, hopelessness, faith, hope, humor, and optimism, among others. Several different sources such as Hofmann, Sawyer, Witt & Oh, (2010), Satin, Linden & Phillips, (2009), and van't Spijker, Trijsburg & Duivenvoorden, (1996) were also helpful.

Furthermore, I reviewed a broader search through the reference lists of all relevant studies carried out on the assessment of anxiety and depression among cancer patients. I expected that the search would uncover all review articles and all materials linked to this topic for additional review.

Gap in the Literature

Although several studies from the developed world have a good understanding of some key features associated with anxiety and depression (e.g., Hassan et al., 2015; Dauchy et al., 2013; So et al., 2010), there was a gap in the literature from Africa, particularly for Ghana. Only a few studies had focused on the assessment of anxiety and depression among breast cancer patients undergoing radiation treatment (Chintamani et al., 2011; Dastan, & Buzlu, 2010; Hassan et al., 2015; Srivastava et al., 2016; Vahdaninia et al., 2010). These studies were from the India, Iran, Malaysia, Turkey, and the United Kingdom. There had been no studies done in Ghana, West Africa, or even Africa at large to assess the level of anxiety and depression among breast cancer patients undergoing radiotherapy.

What was missing in the literature were studies that focused on assessing levels of depression and anxiety and how this assessment impacted treatment outcomes for breast cancer patients undergoing radiotherapy. Coming to a better understanding through this study could promote positive social change in three different ways. First, it would serve the cancer population, especially patients undergoing treatment, to manage depression and anxiety. Second, it would enhance efforts for coping, and third, it could increase the overall quality of life of these patients.

Social Implications of the Study

Depression and anxiety have significant roles in the coping mechanisms for patients undergoing radiotherapy. Almost all patients at some point in their treatment trajectory experience some level of anxiety and depression, but the severity and management of this play a key factor in the survival of the patients. Issues with cancer management have implications and side effects depending on the stage of disease. Coupled with depression and anxiety could, for a variety of reasons, play a key factor in patient mortality. This study could help improve the overall quality of life among patients, their total well-being, their psychosocial functioning, and the overall patient satisfaction with their treatment.

As a result, several issues that arise from anxiety and depression with breast cancer patients could decrease significantly. As described by Hofmann et al. (2010), mindfulness that leads to a mental state without worry about the present experience could be used as a therapy for patients undergoing breast cancer treatment. The results of that study suggested that working on the minds of patients improves symptoms of anxiety and depression (Hofmann et al., 2010). Hence, this assessment could be a memory-based therapy for patients, and this could improve the social relevance of the study. The significance of the survey could be the contribution of the various coping mechanisms that will result in the review through the feedback of the patients undergoing treatments and the interactions with the working staff. This could be important for the patients undergoing treatment and any other patients referred to the oncology unit. It could also be important for the working team who are in the position of ensuring the total well-being of the patients. The study could help to re-examine factors that impact patients' overall treatment performance, future well-being, and social lives.

The study could potentially foster new policies in the three oncology units of Ghana and the overall management of the treatment of cancer in the nation and beyond. It may also inform the multidisciplinary team involved in the management of breast cancer about the late presentation of breast cancer in Ghana. The implications for positive social change could also include decreased depression and anxiety for late presenting breast cancer patients as well as the effective management mechanisms for their caregivers. It could also help project knowledge useful for the prevention of breast cancer.

For this study, I explained the intervention required for depression and anxiety to participants. Therefore, they could gain the courage to handle issues such as depression, and that could help them to deal with a lack of outside support. All these could be possible when patients are rightly informed about their conditions, stages, and the possible treatment outcomes.

Theoretical Framework

Theories

In this study, I reviewed various models of health behavior change that provided an outline of features that affected the entire study. In the study I examined one of the components of the behavioral change theories, the HAPA. Behavioral change theories usually try to describe why behaviors change and the environments conducive to change (van der Linden, 2013). Several scholars have lately presented differences between the theories of change and the models of behavior (van der Linden, 2013). However, these changes of principles are more practice-oriented and usually aimed at changing a given behavior, whereas the models of behavior are more analytical and typically trend towards understanding the psychological factors that explicate or envisage an exact response (Chatterjee & Das, 2015).

Health Action Process Approach

HAPA is a psychosomatic change theory of health behavior developed by R. Schwarzer in 2008. The HAPA postulates at least two distinct stages, a motivation or pre-intentional phase and a volition or self-regulatory or action phase. In the motivation phase, three variables are held to influence intention directly, the risk perception or the risk awareness, the outcome expectancies, and the self-efficacy (Schwarzer, 2004). The volition phase is further divided into three stages, the planning phase, the initiation phase, and the maintenance phase (Figure 1).

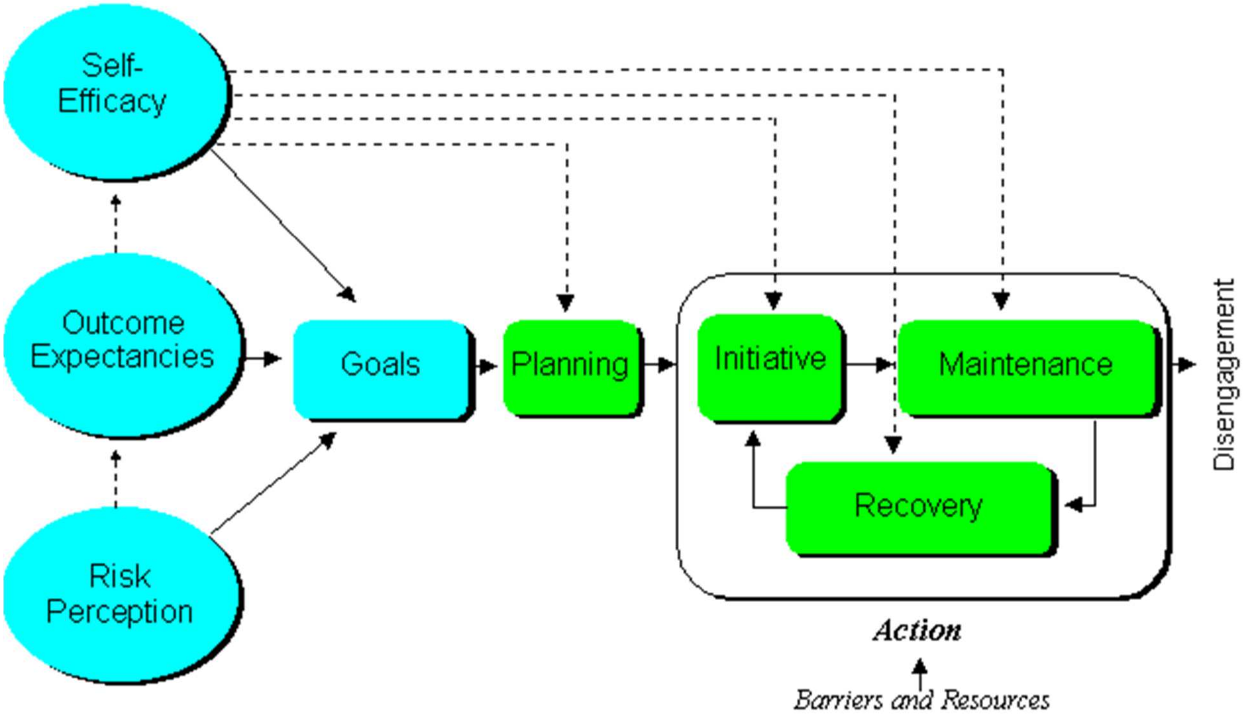

Figure 1: The HAPA, adapted from Schwarzer, 2004

Influence of the Health Action Process Approach on the Study

The HAPA was used to predict, describe, and explain breast cancer treatment processes that lead to anxiety and depression. HAPA is a clear outline of several motivational and volitional concepts used in the explanation and the prediction of individual changes in health behaviors among breast cancer management. When applying the HAPA model to breast cancer management, one of the preeminent predictors of intention that represents the true nature of the conditions of the clients is self-value.

However, planning has also been proven to be a primary predictor of the actual behavior (Luszczynska & Schwarzer, 2003).

For the motivational phase of this study, the issues arising were the growing risk awareness for patients undergoing treatment, and their level of outcome expectancies as described extensively in the study of Schwarzer et al., (2003). In this phase, also, there was a level of concern usually seen as a threat to the patients on their level of survival and coping with the treatment. These threats may be due to the unestablished expectancies and news about other patients who have undergone treatment. The patient's beliefs also characterize this phase of the treatment and the known alternative or traditional treatment. This period ends with a formation of a clear behavioral intention towards the treatment received that will result in survival (Schwarzer et al., 2003). In the volitional stage, once there was an intention to change a health behavior, such change must be planned, introduced, and sustained (Schwarzer, 2008). Plans were made to accommodate and manage some level of relapses which may occur during the study.

Alignment of the Health Action Process Approach With the Study

I used the theory to describe, predict, and explain breast cancer treatment processes that lead to anxiety and depression. I also used it to examine a series of psychological concepts that also clarify what encourages patients to feel depressed and to be anxious at some point in the treatment journey. Finally, I used the theory to look at frameworks that informed patients how to take preventive action at some point in their treatment trajectory. In doing these, the study involved three stages:

1. the informed decision-making stage, through the help of the patients and caregivers or family members;
2. the treatment stage; and
3. The post treatment phase.

Breast Cancer in Ghana

Breast cancer treatment follows a treatment depending on the stage and the type of disease. It is usually a multidisciplinary approach comprising Surgery, Radiotherapy, Chemotherapy, and Hormonal therapy. The specialists provide the opportunity of multidisciplinary diagnosis and treatment for patients. The experienced team in one's field delivers this service with the devices of technology. Apart from these, there are other supportive services like disease management of breast cancer, nutrition and genetic counseling, psychosocial support programs, and physical therapy (WHO, 2017). For Surgery, there is a Mammoplasty, Tissue expansion, Lymph node dissection, Lumpectomy, and Mastectomy. Mammoplasty has to do with plastic surgery to increase or reduce the size of the breasts or to reconstruct a breast.

Tissue expansion is the process of inserting a balloon under the skin and then gradually expanding it to stretch and grow the skin and surrounding tissue. Lymph node dissection is simply the surgical removal of a lymph node. Lumpectomy is the surgical removal of a lump (tumor) in the breast. Finally, mastectomy is the surgical removal of some or all of the breast. The medical procedure is the Radiation Therapy which is the use of high-energy beams to destroy cancer cells and shrink tumors. Chemotherapy is basically through medications to kill cancer cells. The latter and Radiation therapy usually take place at the Oncology Department and the study will focus on patients undergoing radiation treatment, irrespective of whether they have had surgery or chemotherapy.

The Oncology Department of Accra, Ghana, is the Nation’s referral center for all malignant disease in Ghana. It also serves as a cancer center for several neighboring West African countries such as Togo, Benin, Cote d’Ivoire, Senegal, Burkina Faso, Guinea, among others. It is one of the three Oncology departments within the country, serving the southern Ghana and other foreigners referred. The other two are the Oncology Department of Kumasi and the Swedish Ghana Medical which is a Private firm between the Ghana Government and the Swedish Government.

The breast cancer population from the year 2012, 2013, 2014 and 2015 received from the cancer registry at the Oncology Department in Accra were 479, 456, 431, and 513 respectively. Out of these population, the patients who ended up having their radiation treatment aside surgery, chemotherapy, and hormonal therapy, were 307, 280, 257 and 349 within 2012, 2013, 2014 and 2015 respective years.

Patients Flow and Staff

The department has in all five units that will serve the entire breast cancer population. There is the Clinic, which will be the first point of call for the patients when referred and where Oncologists will decide whether the related case will require radiotherapy or not. The second will be a pre-planning decision called the Simulation before radiotherapy. The third will be the Planning unit which will see to the treatment preparation of the breast cases and the prescription of the doses for treatment. The fourth stage will be the Mold room where the field of the treatment will be defined and finally the treatment stage where the actual dose will be delivered to the breast as prescribed.

The working staff will be the Oncologists, Radiotherapists, the Medical Physicists, and the Oncological Nurses. These will together manage, plan, treat, and review patients that will be undergoing breast cancer treatment.

Culture Against Breast Cancer

According to the Africa Watch magazine in 2015, breast cancer is associated with high mortality in many women in sub-Saharan Africa, though treatment is available within the continent (Debrah, 2015). WHO (2015) revealed a total of 2,000 Ghanaian women diagnosed with breast cancer in 2012, and 50% of these cases died. With early breast cancer, curative treatment is possible, and the author quoted the 2014 recipient of the Trust Women Journalist Award and the winner of the 2015 African Story Challenge, Chika Oduah; ‘Many African languages do not have a word for the cancer disease.’ In all research studies conducted within West Africa by several researchers, approximately six out of eight women will die from the various level of late breast presentation (Ikeoluwapo, Adetola, Adenike, et al., 2016; Ohene-Yeboah, & Adjei, 2012; Gakwaya, Kigula-Mugambe, Kavuma, et al., 2008). However, the reverse occurred in the developed countries where approximately six out of eight women were likely to survive breast cancer after treatment (Assi et al., 2013; Ferlay et al., 2010).

The Africa Watch reports that most of the African women seek help and support from alternative healers such as priests, herbalists or spiritual healers even before they think about the hospital, which in the end precariously delays and prolongs their disease (Tammemagi, 2007).

Contributing Factors to Breast Cancer and Their Impact on the Study

Being a woman is one of the primary risk factors for developing breast cancer. Though men can develop breast cancer (1/100), the disease is more common among women than men according to the American Cancer Society (ACS), (2013). Also, 1/8 of all invasive breast cancers are in women younger than 45 years, and 2/3 of all invasive breast cancers are in women over 55 years (ACS, 2013). According to Allicock, Graves, Gray, & Troester, (2013) and Clegg-Lamptey & Hodasi, (2007) possible reasons are explaining why most African women are more likely to die from breast cancer compared to women from other middle and high-income countries. These factors include a presentation at a young age, diagnosis with advanced stage, large tumor size, high-grade histological sub-types and low rates hormonal receptor positivity (Ohene-Yeboah & Adjei, 2012).

A study conducted by Ohene-Yeboah & Adjei, (2012) indicated that there had been several differing views of a stage of presentation in Ghana, the lack of awareness and the availability of screening schemes which in the end contribute to the overall survival of the patients. From studies reported by ACS, (2013) 5-10% of all breast cancer cases are believed to be hereditary, resulting from genetic defects called mutations, inherited from a parent. Several other studies have reported the low levels of education as well as lower socioeconomic status associated with a delayed presentation of breast cancer (Ohene-Yeboah & Adjei, 2012; Elgaili, Abuiris, Rahman, et al., 2010). This low education resulted in low levels of knowledge, causes, and complications of breast cancer within Africa and Ghana (Briggs et al., 2010).

These concerns in Ghana, from the social point of view, keep compounding especially with only two public radiotherapy centers and one private. There is also the lack of a national breast cancer screening program, which echoes the frail health care system in Ghana as well as the poor access to health facilities reported by Ohene-Yeboah & Adjei, (2012). There are also constraints in resources within the Oncology setting regarding staffing, equipment, and spacing. Again, the cost of breast cancer care is high in Ghana because the National Health Insurance does not cover the total cost of therapy and patients are required to make payments for their treatments (Opoku, Benwell, & Yarney, 2012).

All these factors suggest a critical implication of the study in one way or the other. First, women in the African perspective specifically in Ghana are seen as the weaker vessel within the family, and therefore, a combination of the effect of a diagnosis of breast cancer could cause them into some level of anxiety and depression. Also, many of the women presenting breast cancer in Ghana are illiterate, and that puts more burden on them regarding the coping strategies needed for the management of breast cancer. Finally, the cost of treatment is a major blow to patients, because the ordinary Ghanaian will have to pay the treatment themselves. Payment of complete cancer treatment could take on their whole life savings, especially when they have a minimal or no support or help from any family member, organizations, or even political, corporate bodies.

Cost of Breast Cancer in Ghana

Breast cancer treatment and its related cost are financially straining for patients and their caregivers in Ghana. Referrals are delayed unnecessarily due to patient's noncompliance and cost of treatment amongst other things. Although efforts to enroll breast cancer diagnosis, treatment, and management to the Ghana's National Health Insurance Scheme (NHIS) has not been entirely successful, part of Surgery has been absorbed (Hughes, Amoah, Ahiabor, & Awuah, 2012). Data from NHIS, (2010) indicates that only 34% of the population of Ghanaian, had an active membership and that shows that only 34% of cancer patients can access the scheme for Surgery. For Radiotherapy, Chemotherapy, and hormonal therapy, the patients bear most of the cost, and these are very expensive. This cost of treatment is, dependent on the stage of the disease according to Warren, Yabroff, Meekins, Topor, Lamont, & Brown, (2008) and the cost of care continuum is a scary factor. Advanced stages have increased cost compared to a lesser value for early stages and early diagnosis (Ginsberg, Lauer, Zelle, Baeten, & Baltussen, 2012).

Currently, the authorities base the cost of Radiotherapy for breast cancers on the stage and the intent of the disease. The average treatment cost of breast cancer treatment at the study site in Accra, Ghana is between the ranges of \$ 1,000 - \$2,000. Chemotherapy, on the other hand, ranges from \$1000-\$7,000 for multi-agent protocols. Given the limited resources in Ghana and the fact that the average Ghanaian does not earn that much income, there is the need for interventions for funding. Zelle, Nyarko, Bosu, et al., (2012) identified that cost-effectiveness analysis which relates to the effects of interventions in health and cost of treatment, could help guide decision makers in breast cancer management in Ghana.

The deliberations of the cost of breast cancer in Ghana and its impact on patients undergoing radiation treatment at the study site will be incomplete without the consideration of the impact of such burden on the economic barriers of the average Ghanaian woman seeking for screening and treatment (Opoku, Benwell, & Yarney, 2012). In the study by Opoku et al., (2012) patients expressed their displeasure on the high cost of radiation treatment and the encumbrance it places on themselves, families and their overall lifetime savings. The authors indicated that such burden could significantly affect the overall treatment outcome for patients.

There is currently no comprehensive and systematic cancer control policy for breast cancer treatment in Ghana (Zelle, et al., 2012). There is also very low cost-effectiveness of cancer control in Ghana or any other low-income country (Zelle & Baltussen, 2013). The treatment of breast cancer guidelines is virtually vague, and radiotherapy is available in only two largest cities in Ghana, generating essential barriers regarding geographical access. The development of a National Cancer Registry is also at the primary stage according to Vanderpuye, (2012) resulting in difficulties in the accurate estimation of the national cancer burden in Ghana. Vanderpuye further reiterated that a comprehensive information on the distribution of diseases at the regional levels would help to ensure adequate resource use, appropriate access and the provision of care to all Ghanaians (Vanderpuye, 2012).

Globally, the literature on the cost of breast cancer treatment emphases is largely in high-income countries (Ginsberg, Lauer, Zelle, Baeten, & Baltussen, 2012). As a result, extrapolation of the cost to the low-income countries becomes difficult due to the several variations in context. A typical example is the breast screening programs, wherein the advanced environments, different age groups and target tool programs are used differently from what happens in the developing settings (Anderson, Cazap, Saghir et al., 2011). Table 1 shows some of the interventions for breast cancer control currently ongoing in Ghana.

Anxiety and Depression as Risk Factors for Breast Cancer

Risk factors for breast cancers increase the incidence of the populace developing breast cancer. Several risks factors such as family history, age, and medical history are beyond the control of clients. The monitoring of other factors such as the weight of the participants and alcohol consumption is also possible. The plan will be to conduct literature searches with anxiety and depression as a risk factor for breast cancer.

Jacques (1998) identified that women with depressed mood due to an increased rate of black bile were likely to develop breast cancer and this result supported an association between the occurrences of breast cancer and some psychosocial factors (Hong & Tian, 2014). Other studies have also examined the risk of breast cancer and some stressful life events that could result in anxiety and depression (Yang et al., 2017; Metcalfe et al., 2013). In another study, there was an evaluation of the risk of breast cancer with some criteria for stressful life (Lin et al., 2013). The death of a spouse, death of a relative or close friend, health crisis, marital difficulties, financial crisis, and their risk of developing breast cancer were identified as associated factors (Lin et al., 2013). At the end of the study, there were reports on two indicators. The first was that there was no evidence between a stressful life and breast cancer development and second was no indication of stressful life and the increased risk of recurrence (Lin et al., 2013).

Table 1

Various Individual Interventions for Breast Cancer Control in Ghana According to the Stages at Presentations by Zelle et al. (2012).

Stage	Treatment	Down-staging interventions	Palliative care
Stage I & II	1. Lumpectomy with axillary dissection 2. Radiotherapy 3. Systemic therapy	-Creating the Awareness -Education on breast self-examination	Supportive care Pain management Psychosocial care
Stage III	1. Modified Mastectomy 2. Adjuvant Chemotherapy 3. Radiotherapy 4. Hormonal therapy and possibly more chemotherapy	-Biennial clinical breast examination for women aged 40–69 years - Active community outreach screening	
Stage IV	1. Palliative systemic therapy 2. Palliative radiotherapy 3. End of life hospitalization 4. Total mastectomy for eligible patients and hormonal therapy		-Palliative Care -Volunteers training program -Home-based visits every fortnight -Pain treatment with morphine, laxatives -Palliative Radiotherapy for eligible patients.

Diagnosis of Anxiety and Depression Among Breast Cancer

The incidence of anxiety and depression among breast cancer patients appears to be reliant on several factors including the severity of the disease, performance status, patient’s disability level, and patient’s history (Sogaard, Thomsen, Bossen, Sorensen, & Norgaard, 2013; Aapro & Cull, 1999). Somerset et al., (2004) on the other hand were of the view that those significant symptoms of anxiety and depression are underestimated and undertreated in women with breast cancer. One of the explanations given by Greenberg (2004) was that women with breast cancer were hesitant to reveal their emotional concerns. Chou, Kuang, Lee, et al., (2016) also indicated that cancer care teams are mostly not familiar with such symptoms screening. The suggested diagnostic features that could be for anxiety and depression among breast cancer patients according to Mura, Bhat, Pisano, et al., (2012) are; history of psychiatric ailment, pain, lack of close relatives, race, ethnicity, and personality.

Anxiety and Depression Among Breast Cancer Patients

Breast cancer according to Hassan, *et al*., (2015) is one of the most feared diseases among women, and it could induce some level of changes of psychological disorders such as anxiety and depression.

Causes of Anxiety and Depression Among Breast Cancer Patients

There are several reasons for of the depression and anxiety experienced amongst breast cancer patients undergoing treatment. Identified causes could be physical, psychological, emotional, environmental, social and spiritual as indicated by the National Institute of Mental Health, (2014). Possible physical causes that affect breast cancer patients during treatment could be the waiting time, the cost of therapy, and nutritional problems such as loss of appetite. For psychological causes, there are nervousness, touchiness, issues with sleep, and level concentration (National Institute of Mental

Health, 2014). Other emotional reasons could be single status and breakups in marriages as a result of the disease (CDC, 2012). Other social factors could be the staff-patients' relationship, and Spiritual factors such as the fear of treatment, death, and the unknown (CDC, 2012). With breast cancer, though the causes of anxiety and depression are most times not the same, they usually occur at the same time.

Prevalence of Anxiety and Depression in Breast Cancer Patients

According to Baqutayan, (2012) anxiety is one of the leading psychological challenges associated with cancer. In effect, every cancer patients undergo a level of anxiety at some point in their disease trajectory. This level of concern, however, increases as patients identify how severe their breast condition is with the stage of presentation and how the treatment progresses. It is also essential to note that levels of anxiety differ from patients to patients, and stages to stages and therefore management will be different from every patient undergoing treatment. Depression, on the other hand, is a standard clinical unit with a lifetime risk and the most common psychiatric problem faced by breast cancer patients (Holland, 2010). The diagnosis of breast cancer is itself a marked stressor, and therefore patients tend to get an added psychosocial and biological stressor that accompany cancer and further raises the likelihood of becoming depressed.

Breast cancer patients usually may experience anxiety and depression at different stages of the cancer treatment while undergoing radiotherapy and antedating a recurrence of their breast cancer. This experience may result in their feelings of pain, disturb their sleeping patterns, causes vomiting and nausea and affect their overall quality of life.

Symptoms of Anxiety and Depression in Breast Cancer Patients

The expression of the symptoms of anxiety and depression among breast cancer patients undergoing radiotherapy may be masked. Usually, breast cancer patients undergoing treatment experience persistent sadness, changes in their mood feelings of pessimism, and the sense of hopelessness (Steiner, Wagner, Bigatti, & Storniolo, 2014). Others have a sense of guilt, helplessness, and worthlessness. There is also sometimes the loss of interest or the loss of pleasure in the usual activities (Anxiety and Depression Association of America (ADAA), 2016). Others also experience levels of fatigue, decreased energy level and a feeling of some degree of slowness in life. At some point in time, there is a difficulty in remembering events, concentrating on matters, and decisions making. There is also the decrease in appetite, loss of weight, overeating, and overweight. Other times, there is insomnia, oversleeping, restlessness, and irritability (ADAA, 2016). In extreme cases, there are thoughts of death or suicide, and suicidal attempts by the patients (ADAA, 2016).

Interventions and Treatment of Anxiety and Depression

Psychological. There is a considerable influence on the consequences of anxiety and depression in patients undergoing treatment, and this effect decrease patient’s ability to live independently (Rozzini, Chilovi, Peli, et al., 2009). There is also an upsurge of the high risk of depression and anxiety among breast cancer patients on the advancement of Alzheimer's disease (Lu, Edland, Teng, et al., 2009). Azermai, Petrovic, Elseviers, et al., (2012) recommended in their study that the treatment of the symptoms of depression and anxiety should be a critical component of the overall treatment of Alzheimer's disease, as part of interventions to management. One of the studies reviewed found that the extent of illness and physical impairment from treatment undergoing breast cancer treatment could predict the mood disturbance of patients (Bagheri & Mazaheri, 2015). The results also indicated that general satisfaction and quality of life also influence the overall psychological interventions.

Moreover, issues with the degree of sexual indisposition have a psychological impact on breast cancer patients undergoing treatments and this can be disturbing. In a study by Ives, Saunders, Bulsara & Semmens, (2007) women who survived breast cancer after treatment and later conceived were 37% (45/174) compared to the population reviewed. In their conclusion, the authors concluded that the treatment of breast cancer has a negative impact on procreative opportunities for women of childbearing age. Additionally, there is the psychological effect on the family and extended members of patients as a result of the treatment. These effect changes in the identity of the family, daily functioning and the extent to the roles they play. A study by Woźniak & Iżycki, (2014) documented that spouses of patients undergoing treatment were as distressed as cancer patients. The study concluded that there is a correlation between distressed patients and their partners.

Cognitive-behavioral therapy (CBT), is one of the many interventions for managing depression and anxiety. According to ADAA, (2016) CBT can teach participants undergoing treatment, ways to manage their fears and other symptoms they expressed as a result of their level of anxiety and depression. According to ADAA (2016) could be done by finding the problem and taking control of their emotions. This therapy will also involve the facing of one's fears on the pathway to recovery.

Physical. Physical activity (exercise) deals with a broad range of health benefits such as improving care and decreasing the level of anxiety and depression in cancer patients (Stewart, & Wild, 2016). The absence of this can lead to detrimental effects on the clients and increase the risk for other conditions other than cancer such as diabetes, heart disease, obesity, and hypertension. According to Helgadóttir, Forsell, & Ekblom, (2015), physical activity is linked with an improved physical health as well as the life satisfaction of patients and their well-being. One of the systematic review studies by Stonerock, Hoffman, Smith, & Blumenthal (2015), supported the use of exercise as a treatment for depression and indicated that activity relates positively to antidepressant medications for mild to moderate depression. Exercise has again been shown to improve depressive and anxiety symptoms when used as an adjunct to medicines (Danielsson, Noras, Waern, & Carlsson, 2013).

Physical therapy according to (Carek, Laibstain, & Carek, 2011) is usually linked with declined level of anxiety and depression. Physical therapy according to Carek et al., (2011) releases chemicals in the body that makes people feel good and relax and therefore the advice is practice the exercises such as only walking for 10 minutes and one will have his or her symptoms assuaged.

Meditation. Meditation is one of the mental strategies that could be employed by patients undergoing radiotherapy of the breast to manage depression and anxiety (Goyal, Haythornthwaite, Levine, et al., 2010). Many cancer patients meditate to lessen the stress them and to forget about the health-related pain they undergo (Khoury, Lecomte, Fortin, et al., 2013). The characteristics of meditative techniques are accentuating mindfulness, attentiveness, and self-transcendence (Travis & Shear, 2010). Typical techniques, such as mystical meditation, emphasize the use of an intonation in such a way that it transcends one to an effortless state where focused attention is vague (Chiesa & Malinowski, 2011).

Another technique is mindfulness, and this is seen to improve the quality of life of patients and simplify the symptoms of both anxiety and depression. Other meditative practices are assimilated into a wider marginal approach that includes dietary and movement therapies (Goyal et al., 2010).

Spirituality. The term ~~s~~pirituality is the cognizance of a power greater than the individual self that gives purpose and meaning to the life (Geffen, 2010). It is the sense of touch with the spiritual self and espousal of the connectedness to a higher authority. According to Kessler, Wischnewsky, Michalsen, et al., (2013), spirituality is a journey where an individual learns about the inner self, and then desires to be connected to the Supreme Being and such route is believed to help accomplish peace of mind and healing from within. According to the authors, this is achievable when anxiety, and depression, which succeed in a wobbly and a nomadic mind, will cease to exist.

The word ‘Cancer’ stimulates a spiritual crunch in many clients undergoing treatment, and for these individuals, the feeling of anxiety, anger, and depression is discouraging (Romero, Friedman, Kalidas, et al., 2006). As these patients explore to find the actual meaning in their lives and relationships, spirituality becomes helpful and therapeutic especially in the African context (Gibson, & Hendricks, 2006). According to

Puchalski, (2012), there are enormous benefits of integrating spirituality into cancer treatment, and this includes decreasing the level of anxiety, anger, discomfort, loneliness, depression, and risk of suicide for patients. According to Hofmann et al. (2010), spirituality can play a fundamental role in the healing of patients with anxiety and depression. One of the therapies within the African context is spirituality, and this is essential because many people attach a spiritual meaning to whatever they go through especially with a diagnosis of cancer (Kyei et al., 2015).

Pharmacological. Contemporary pharmacological treatments for anxiety and depression according to Farach, Pruitt, Jun, et al., (2012) are safer and more tolerable than previously used, though the effectiveness of the treatment and duration have not improved in most cases. Currently, there are pharmacological approaches for the management of depression and anxiety in dementia patients, but this according to Gitlin, Kales, & Lyketsos, (2012), the side-effects could be bad that it makes the overall treatment fundamentally ineffective. Medications could also be therapies for the treatment of depression and anxiety. Reich, et al., (2008) indicated that drugs with selective serotonin reuptake inhibitor (SSRI) and serotonin-norepinephrine reuptake inhibitor (SNRI) help in the management of depression and anxiety in breast cancer patients. There could also be a combination of psychotherapy and medication treatment in achieving this. Finally, Antidepressant drugs may be administered to help treat both anxiety and depression.

Validity of Anxiety and Depression Symptoms Scales

A search of the literature on the scales for measuring anxiety and depression took place on various search engines. This search found out how important this quest was in meeting the goals of the research and whether some key advantages or shortfalls could improve the proposed scales for this study as seen in the methodology. Few of the scales that the investigator had come across were the Mood and Anxiety Symptom Questionnaire (MASQ) initially by Watson & Clark, (1991) but modified in several studies (Lee, Kim & Cho, 2015). The other was the Depression Anxiety Stress Scale by Fernando Gomez (Henry & Crawford, 2005). Others are the Hamilton Anxiety Rating Scale (Shear et al., 2001), the Dukes Anxiety-Depression Scale (Parkerson Jr & Broadhead, 1997), and much more.

Summary

This chapter reviewed all items regarded as significant in the study. It started with a search for all the literature on the topic, followed by an identified gap in literature within Africa and particularly at the study center. The theoretical framework developed, and the investigator proposed HAPA for the assessment of anxiety and depression. The investigator reviewed the influence and the alignment of HAPA with the study. There was also a major review of breast cancer in the Ghanaian populace, the culture, contributing factors, and the impact on the study. There was also a discussion of the cost of breast cancer which is a significant burden to patients. The investigator again looked at the risk, diagnosis, causes, prevalence, symptoms and the interventions of breast cancer within the country and beyond. Finally, there was a review of the validity of the scales to be used.

The next chapter focused on the methods employed for the study. The gap in the literature studies centered on assessing levels of depression and anxiety and how this assessment impacted treatment outcome for breast cancer patients undergoing radiotherapy. With the use of the mixed method design, the investigator focused on the evaluation using both quantitative and qualitative pathway, and this could possibly affect the overall treatment of patients.

Chapter 3: Methodology

Introduction

Through this study I aimed to find various interventions for depression and anxiety among breast cancer patients in Ghana. I used a combination of qualitative and quantitative data through a concurrent triangulation involving an interview with some selected professional participants and a detailed survey. The triangulation method was to show how the interviews supported, confirmed, or disconfirmed the responses from the patient participants. This mixed method approach had a higher weighted scale of the quantitative segment with both closed and open-ended questionnaires. I present the data collection, data management, and data analysis in this chapter together with a discussion of ethical issues of the research.

Research Methodology

The study approach was a mixed method design to gather both quantitative and qualitative data with a primary concern for quantitative data. The qualitative data were interviews with selected staff who worked in close collaboration with patients (doctors, nurses, and radiation therapists). The quantitative data was a descriptive survey with questionnaire using a sample of 100 participants and with a non probabilistic approach because there was no appointment system for patients undergoing treatment for the assessment. Patients were selected when they commenced treatment and consented to partake in the study.

Setting and Sample

The study took place at the oncology unit of the Korle-Bu Teaching Hospital, Accra, Ghana between the proposed months of June and July 2017. The Korle-Bu Teaching Hospital is the nation's primary referral unit for cancer management with an approximately 2,000 hospital bed capacity. I chose this for the study site because it serves a total of 70% of all cancer cases seen in the country according to Kyei, Opoku, Antwi, and Engel-Hills (2015). The use of convenience sampling occurred for the study because it offered me access to both the participants (patients and professionals) and data required. I used a power analysis to determine the appropriate sample size for the study using G*Power 3.1 software (Faul, Erdfelder, Lang, & Buchner, 2007) as shown in to Figures 2 and 3 below. The computed sample size was 89 with a power of 0.98.

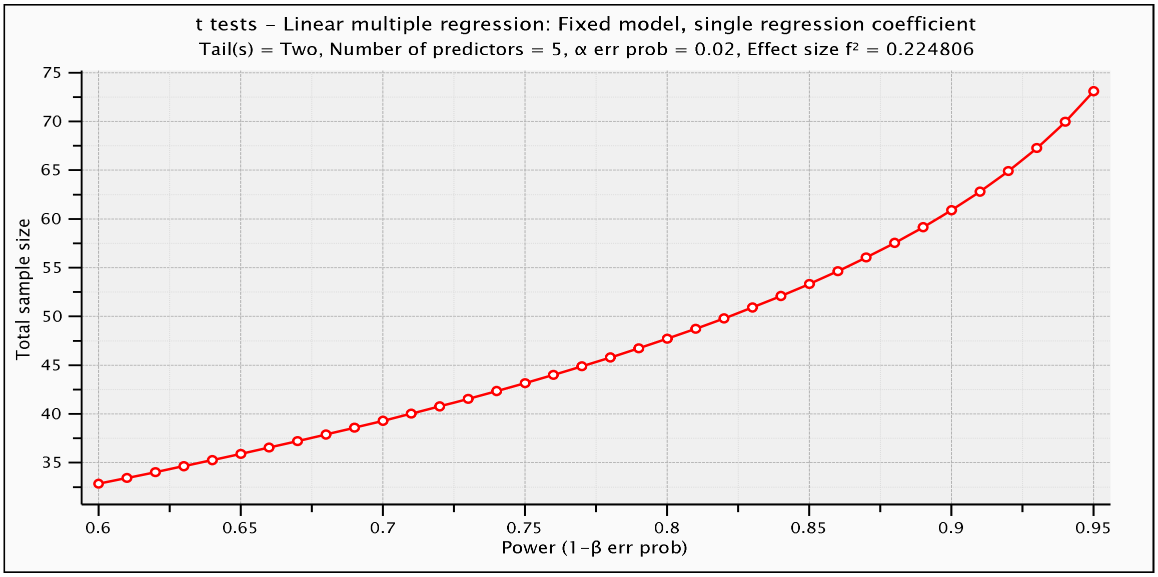

Figure 2. Computing sample size.

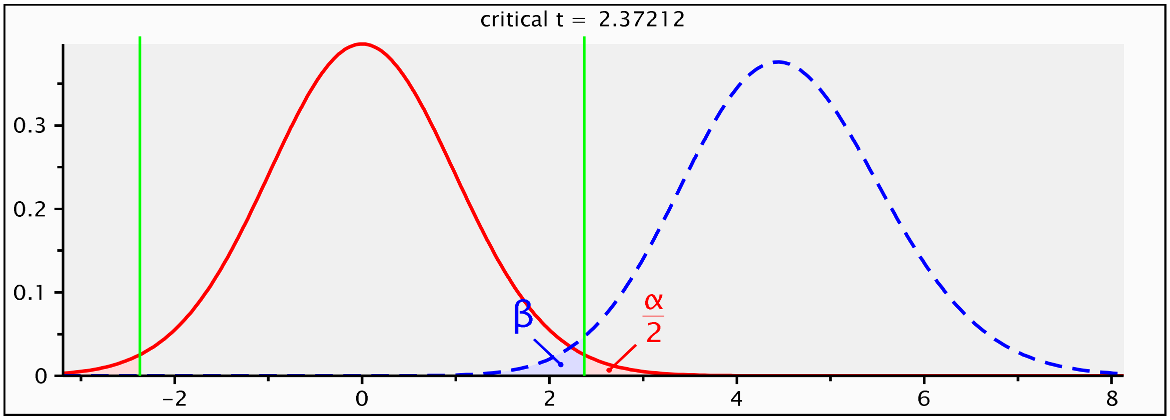

Figure 3. Range of values for 3-Power analysis.

Research Questions and Hypothesis

The research questions for this study were

RQ1-Qualitative: What are the experiences of breast cancer patients undergoing radiotherapy with high-level anxiety and depression?

RQ2-Quantitative: How does the effect of breast cancer stage, the cost of treatment, and waiting time affect a patient's level of anxiety, depression, and treatment responses?

H_0: There is no significant relationship between the responses of breast cancer patients on their treatment and their level of anxiety and depression and treatment response.

H_1: There is a significant relationship between the responses of breast cancer patients on their treatment and their level of anxiety and depression and treatment response.

Qualitative Interviews and Quantitative Survey

Interviews with six selected participants formed the qualitative aspects of this study. These interviews involved semi structured questions asked of the chosen participants (two in each professional category). The selected members included two radiation oncologists, two radiotherapists, and two oncology nurses who worked in close collaboration with the patients. On a daily basis, these participants reviewed, treated, and managed patients undergoing breast cancer treatment and therefore had a stake in the assessment of these patients. The questions elicited the opinions of the professional participants on the different levels of interventions designed for the patients at various points in the treatment trajectory.

The quantitative part of the study consisted of 100 selected participants who fell under the inclusion criteria. The formula that was used to verify the minimum sample size was $n = [Z^2 p\ (1\text{-}p)]/E^2$, where, n = minimum sample size, p = population proportion of the breast cancer patients available during the time of the study, Z = confidence level usually defined as 95%, and E = the maximum allowable error (5%). According to the Department Registry at the Oncology Unit of Ghana, Accra, an average of 140 patients begin treatment every month. Out of 140 patients, an average of 65 are breast cancer cases. Hence, within 3 months, a total of 195 patients will typically undergo radiation treatment. The breast cancer population proportion for the three months was therefore 195/420. Therefore, $N = [0.95^2\ (195/420\ (1\text{-}195/420)]/.05^2$, and the minimum sample size was N =89.7, approximately 90. Hence, the selected sample size was 100 for the period of the study. The close-ended questionnaire was distributed to the selected patients and collected after completion.

Participant Selection

The selection of the professional participants was from a pool of over 30 staff with a minimum work experience of 5 years. The reason was that with 5 years' professional experience, the staff should be able to assess patients thoroughly, manage treatment symptoms, and perform complete treatment for breast cancer patients. Recruitment of patients was through the eligibility and exclusion criteria.

The eligibility criteria for the 100 patients were that

- the patient was diagnosed with breast cancer,
- the patient was undergoing radiotherapy,
- the patient was above 18 years of age,
- the treatment had lasted for a minimum of three weeks, and
- the patient was mentally competent to answer the questions.

The exclusion criteria were:

- non resident Ghanaians;
- poor performance status regarding the stage of the breast cancer and effect on the participant, such as metastasis to other parts of the body, resulting in an inability to respond to the questionnaire appropriately; and
- worse diagnosis where the patient previously diagnosed with a cancer was in the declining, most severe stages of disease, and the resulting pain would prevent participation.

Role of the Researcher

I was an observer, and though I am a radiotherapist, I was not involved in the treatment of breast cancer patients during the time of the study. I was involved neither in the review process of the patients nor the simulation of the patients at the date of the survey. The senior radiotherapists on post at the time of the study selected the patients; therefore, possibility of researcher bias was significantly minimized.

Data Collection

I collected data for the study using a semi-structured questionnaire that was a modified version of Patient Health Questionnaire and Depression Anxiety Stress Scale (Appendix A). Usually, patients scheduled for treatment are called from the waiting room to the control room to prepare for their treatment. The administration of the questionnaire took place in the control room where patients are called before to the commencement of any procedure. Patient demographics such as the age, sex, education, marital status, and income level were measured and used as independent variables. The period of treatment, waiting times, type of cancer, and the remedy for the anxiety and depression experienced were measured as well.

Qualitative data were information from participants collected through the interviews. The British Educational Research Association (2009), indicated that interviews are the best way of seeking the views of other people. Open-ended questions through conversations in a format of mutual understanding occurred among the participants, allowing them to express themselves (Appendix C). These interviews encouraged members to share and provide different opinions about anxiety and depression as they took care of breast cancer patients. The time for the meetings was 15 minutes for each of the selected participants

Data Management and Analysis

Interview data were analyzed using the NVivo version 11 for Mac by QSR International through transcribing, finding emerging themes, coding, and making connections to the research questions. For the quantitative analysis, the hypotheses were

> H_0: There is no significant relationship between the responses of breast cancer patients on their treatment and their level of anxiety and depression and treatment response.
>
> H_1: There is a significant relationship between the responses of breast cancer patients on their treatment and their level of anxiety and depression and treatment response.

The quantitative data analysis used SPSS version 21 to evaluate the relationships between the responses of breast cancer patients on their treatment and their level of anxiety and depression. I performed multiple regression analyses on the quantitative data as this was appropriate whenever there was a desire for the predictive value of a correlation between variables (Gravetter & Wallnau, 2013). Responses in frequencies for the questionnaire were determined and presented in the forms of tables and graphs.

Again, I assessed the normality of the distribution of variables through physical examination for outliers and the analysis of the skewness and kurtosis for the measures of anxiety and depression. I again performed multicollinearity to determine depression and anxiety between the independent variables (age, sex, education, marital status and income level). Finally, I conducted a multiple regression analysis to test the hypotheses and the regression analysis to test for interactions between the variables and anxiety and depression.

Validity and Reliability

The study did not involve any experiment nor any threats to internal validity. It was, however, possible that threats to statistical conclusion validity could take place when the investigator makes insufficient inferences and generalizes the results to the whole population. Again, I anticipated that with little statistical power, the effect size being estimated was biased, or the statistical assumptions were violated, or even when the size of the sample was too small (Marczyk, DeMatteo, & Festinger, 2005). Again, there is a potential for a little statistical power when the instruments are unreliable and endangerment of the statistical conclusion validity. However, all the tools selected for the study were thoroughly reviewed for psychometric adequacy and assessed to evaluate internal consistency using Cronbach's coefficient alpha.

Ethical Review

I obtained ethical approval for the study from the Institutional Review Board (IRB) of Walden University, and all efforts were made to ensure and uphold this. With adult patients to be selected for the survey, the anticipation was that the risk might be minimal, protect their identity upholding the Helsinki declaration. However, support services were readily available for participants in case of any need of any further clarification about their level of anxiety and depression.

In this study, the participants involved human beings, and therefore it was essential to observe ethical principles as indicated by Burkhart & Pawlik, (2017). The investigator considered the basic principles of ethics during data collection, and this involved the respect for autonomy, the respect for privacy and confidentiality, the need to consider a risk of harm, and the need to avoid deceits or exploitation. The use of a voluntary informed consent in this study indicated the participant's agreement to participate in the research with a full understanding of the purpose and implications of the study. This consent according to Burkhart & Pawlik, (2017) included disclosure, comprehension, voluntary and competency.

Respect for Autonomy

As indicated earlier on, the investigator sought consent from the participants (professional and patients) and ensured that participants understood the intent of the study and were willing to participate. The process of consent for the participants were both written for the patients, and verbal and written for professionals. Participants could withdraw from the study at any time without prejudgment.

Respect for Privacy and Confidentiality

Privacy deals with access or information about participants whereas confidentiality relate to the way the researcher treats information about participants in the study (Geana, Erba, Krebill, et al., 2017). Lancaster, (2017) indicated in a study that attaining direct entry to one's information and personal issues without any knowledge and approval from them becomes a breach of the individual's privacy. Lancaster, however, explained that the breach of confidentiality of the individuals occur when investigators obtain their data or information without their consent. This investigator considered privacy and confidentiality as a priority in the study and participants were assured of the high level of privacy. Participation was confidential and voluntary, and it had no detrimental effect on their overall treatment should any patient decide to withdraw.

The Need to Consider Risk of Harm

A risk is any prospective harm involving the physiological and psychological structures such as distress, injury, and loss of self-esteem (Dooley, Slavich, Moreno, & Bower, 2017). Assurances of protection against any physical discomfort and harm during the process occurred.

The Need to Avoid Deceit and Exploitation

The investigator explained the purpose of the study to participants to rule out any form of deceits and exploitations of participants. Granek, Nakash, Cohen, Ben-David, & Ariad, (2016) have indicated in their study, that members could make incorrect assumptions when the explanation of the purpose and the process are incomplete.

The investigator sought approval for this dissertation from the Walden University IRB before the beginning of data collection and the Oncology Unit of the hospital in Ghana. Rudestan & Newton, (2015. p. 313) are of the view that for research to be carried out, the researcher is required to obtain authorization from the IRB at the institution where the candidate is enrolled and the sites where the research would take place. The Walden University, therefore, requires that students engaged in dissertation writing submit their proposals to the IRB for approval before data collection. The submission was to ensure that the student complies with the University's ethical standards as well as U.S. federal regulations (Walden University, n.d). The IRB approved the proposal on July, 6, 2017 (IRB approval no: 06-07-17-0475898). The oncology unit also required that before any information on a patient undergoing radiation treatment goes out, approval is sought to protect the privacy of the patient and this was done appropriately.

The investigator would keep the data in a locked cabinet for seven years as required by the American Psychological. There was a test for all assumptions and conducted accurately and honestly during data collection, data analysis as well as data interpretation of the data.

Summary

The investigator used interview and a survey to answer the research questions using six participants for the interviews whereas 100 patients for the survey. The sample size for the quantitative study was determined using a power analysis and verified with power analytic framework (Faul et al., 2007). The minimum number of participants from the power analysis required for the study was 89.

After these applications, the Walden IRB gave permission to commence with the study, and followed with data collection. Participants were only permitted to take part in the study after they had given informed consent and permission. The patient participants completed the survey while the professional participants signed the consent forms as proof of their approval. The investigator will keep the consent forms locked to assure confidentiality. The findings were presented in Chapter 4 representing the results of the study, both qualitative and quantitative.

Chapter 4: Results

Introduction

The purpose of this study was to find various interventions for depression and anxiety among breast cancer patients undergoing radiation treatment in Ghana. The study explored a combination of qualitative and quantitative data through a concurrent triangulation involving semi structured interviews with selected professional participants and a detailed survey. The reason for the choice of the mixed method was to explore potential causes of anxiety and depression among breast cancer patients and map some interventions for them. The research questions that guided the study with the hypotheses are repeated in this section to guide the analysis. The research questions and hypotheses were:

RQ1-Qualitative: What are the experiences of breast cancer patients undergoing radiotherapy with high-level anxiety and depression?

RQ2-Quantitative: How does the effect of breast cancer stage, the cost of treatment, and waiting time affect a patient's level of anxiety, depression, and treatment responses?

H_0: There is no significant relationship between the responses of breast cancer patients on their treatment and their level of anxiety and depression and treatment response.

H_1: There is a significant relationship between the responses of breast cancer patients on their treatment and their level of anxiety and depression and treatment response.

In this chapter I summarize the data collection procedure, describes the preparation of the data for analysis, and provides the results of the analyses.

Data Collection and Management

Data collection began on Thursday, June 8, 2017, at exactly 9:23 am GMT and ended on July 13, 2017, at 3:12 pm GMT. On the first day of the study, I distributed seven questionnaires to patients after they consented to participate in the study. The data collection continued through the whole study until the last patient participant completed the survey on July 13, 2017. I collected the qualitative data through face-to-face interviews from June 29, 2017, and on July 4, 2017, in the afternoons, beginning with the oncology nurses, followed by the radiotherapists, and finally the oncologists.

After data collection, I entered the responses of the questionnaires into SPSS version 21. I screened the data, scored the instruments and conducted statistical analysis. As described in Chapter 3, a power analysis using G*Power 3.1.9.2 software and a minimum sample size calculation were both used to determine the appropriate sample size for the study (Faul et al., 2007). Both items indicated that a minimum sample size of 89 was required.

Coding Analysis

I recorded the interviews on a phone device, and the audio files were in English. I listened to each of the recordings a minimum of seven times and documented them on in a Word document (Appendix E-J). I imported the interview materials into the NVivo software version 11. I then opened them and explored all six participants, grouped them into categories such as doctors, nurses, and radiotherapists. Initially, I identified the responses to each interview question and then related them to the research question. I then coded each transcript using an inductive coding approach from by Thomas (2006) in which the investigator teases out important themes from raw data.

Themes

I generated the themes as I read and reread the transcripts of the interview documents. Following this, I carefully analyzed the interviews with the research question and formed themes including complaints from patients, the cost of treatment, fear of the unknown, the burden of the disease, spirituality, the need for psychotherapist, and several others. Some of the coding categories changed after consideration of the data. When I identified a new code or deleted a code, I went back to the particular transcript to reread and make the appropriate changes as described by Campbell, Quincy, Osserman & Pedersen, (2013). I visualized by displaying some of the word on word tree (Figure 8). I conducted text search for some words to see the frequency of them from the participants. I did a matrix coding and comparison for some of the items. Finally, I recorded all the insights drawn from these analyses and used them for the write up of the discussion of the study.

Research Findings

The following sections present the results of the study. The first section displays the qualitative data from the NVivo while the other shows the quantitative data from the SPSS. I further divided these sections into sub sections. There were five subsections for the qualitative data. These were the participant demographics information such as gender, profession, and years of practice. The other sub sections display the discussion on complaints, solutions prescribed, feedback from patients, and the management. All these sub sections answered the first research questions. The quantitative data section was divided into four main sub sections. The first displays socio demographic data, followed by anxiety and depression about treatment, and interventions for management. This section answered the second research question.

Qualitative Data

Descriptive Statistics for the Interviews

Table 2 provides the demographics for the responses given by professional participants. I de-identified the participants using pseudonyms. In all, 33.3% of participants were females, and 67.7% were males. The results showed that the oncologists interviewed had the least numbers of years of professional experience.

Table 2

Participant's Demographics

Gender	Profession	Years of Practice
Male	Doctor (oncologist) (D1)	5-6
Male	Doctor (oncologist) D2)	5-6
Male	Radiotherapist (R1)	9-10
Female	Radiotherapist (R2)	5-6
Female	Nurse (N1)	7-8
Male	Nurse (N2)	7-8

Research Question

RQ1 was: What are the experiences of breast cancer patients undergoing radiotherapy with high-level anxiety and depression? The collection of data from the six participants interviewed answered the research question above. I asked a series of questions from the three categories of profession chosen (Appendix C). The questions, though similar, were categorized. To determine what form of management or interventions patients received for their level of depression and anxiety, I asked the participants (D1, D2, R1, R2, N1 and N2) about their reviews, treatment sections, and radiotherapy delivered to patients. Again, discussions on the interventions of depression and anxiety was discussed thoroughly.

I generated themes from the responses received and read and reread transcripts several times to make meaning of the responses of the participants. Some the themes that emerged were (a) complaints from patients, (b) the burden of the disease, (c) waiting times, (d) interventions prescribed, (e) feedback for patients, and (f) management of depression and anxiety.

Formation of Themes

Complaints from patients. There were series of questions during the interview on anxiety and depression. I began by asking participants whether they received complaints from patients about their level of anxiety and depression. The responses from all the participants indicated that breast cancer patients undergoing treatment complain. There were frequent complaints that ran through all three categories of persons interviewed. The complaints were shared among patients, and some of these were distress, the burden of disease, fear of the unknown, waiting time before treatment, and cost of treatment. Others were also specific to the unit where treatment was ongoing.

However, some of these complaints were profession-dependent, and though the interview questions were the same for each of the participants, the responses were different from the individual profession. As shown in Figures 4 and 5, all the doctors saw the cost of treatment as an indicator of patient anxiety and depression. Again, one the nurses talked much about cost and expressed how patients are distressed with the large amount of money needed to pay for treatment, though the other nurse did not. One of the radiotherapists mentioned cost as an indicator.

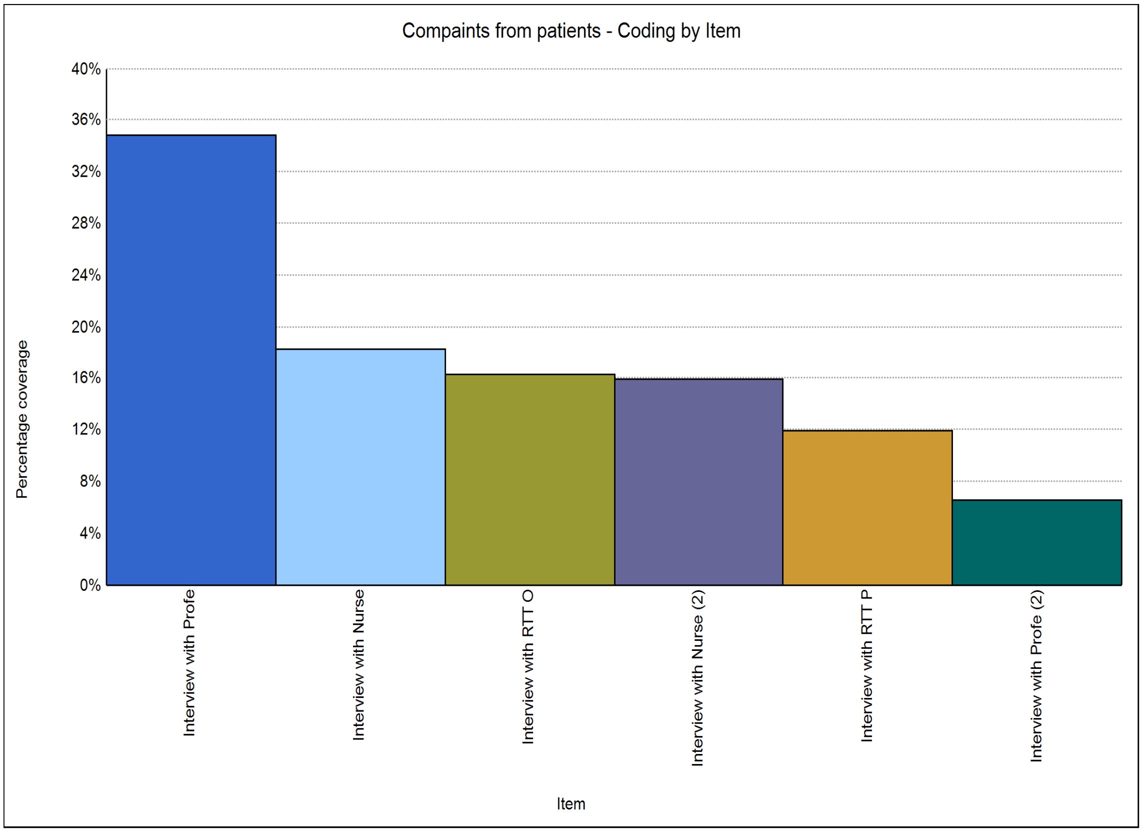

Figure 4. Participants discussion on patients’ complaints.

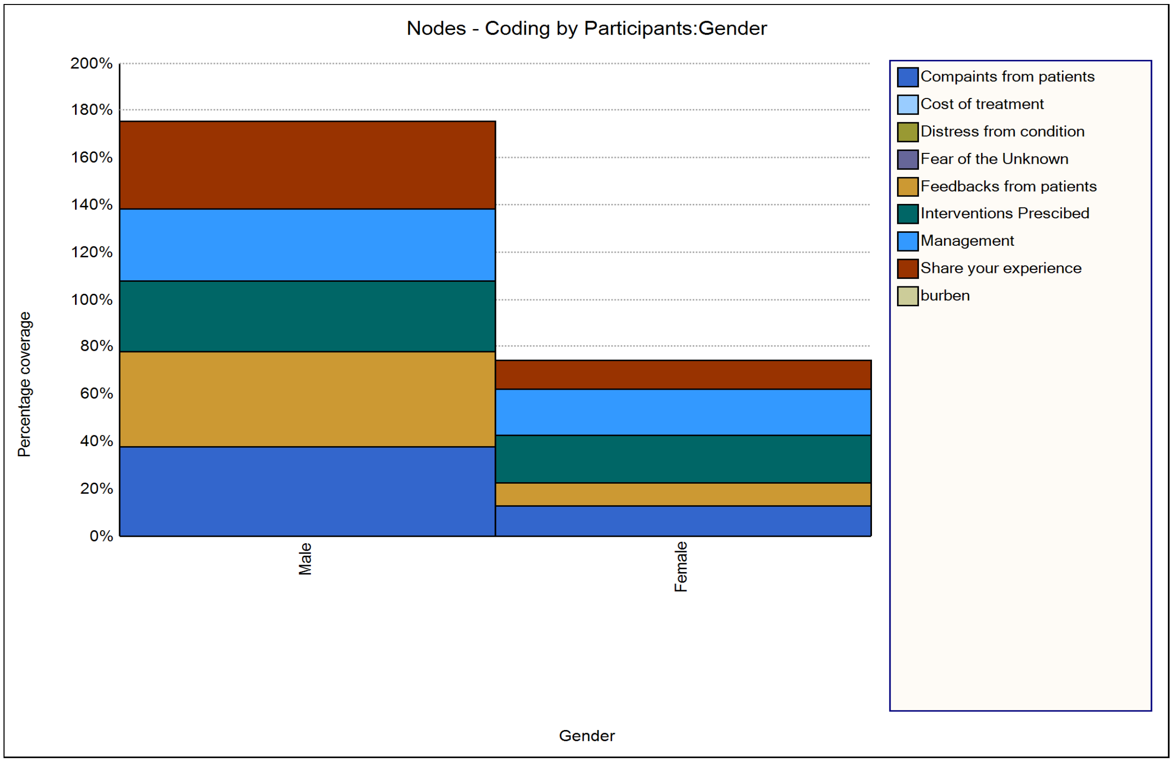

Figure 5. Participant’s discussion on patients’ complaints on cost of treatment.

The burden of the disease. This was discussed extensively by the participants. The burden covered the complaints including the high cost of treatment, distress from the disease as well as the daily treatment, and fear of the unknown as well as experiences shared by the professionals (Figure 6).

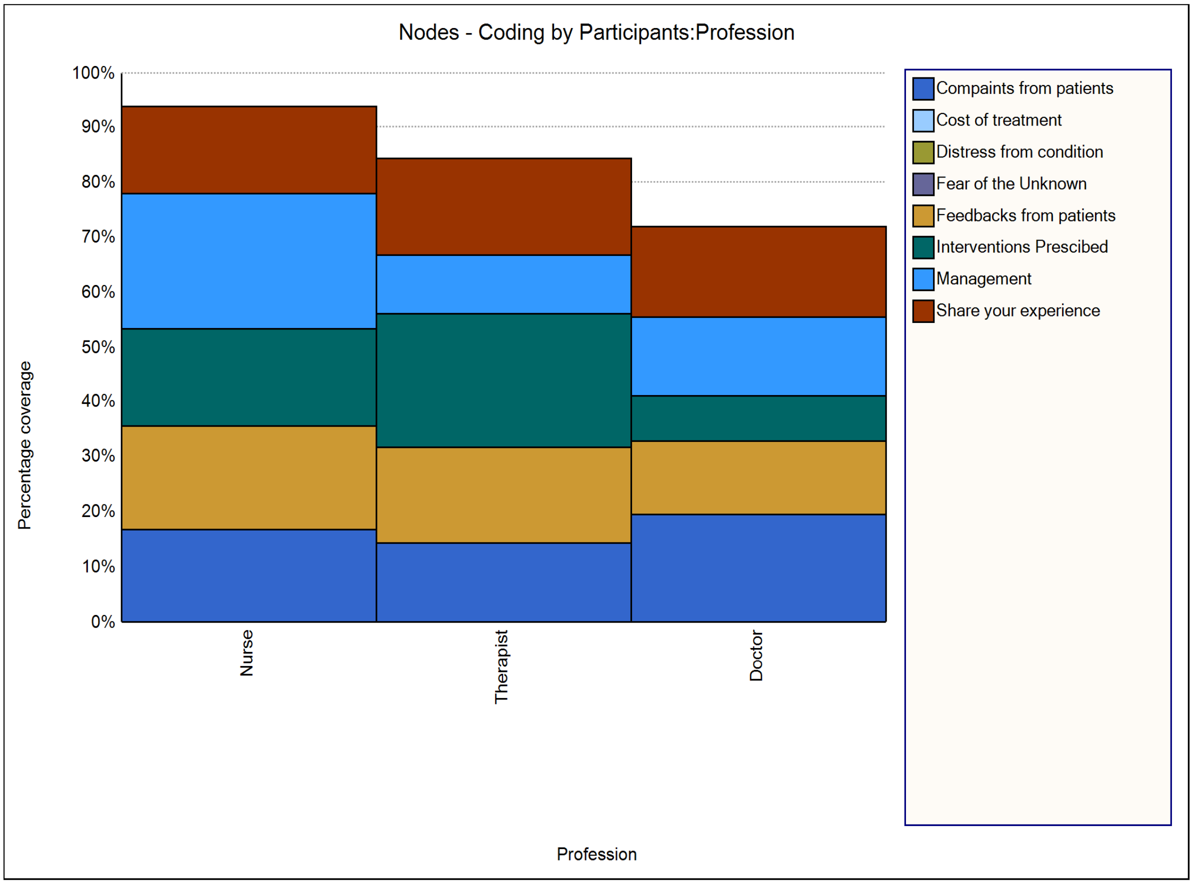

Figure 6. The burden of the disease.

In trying to understand the burden as related to cost, some of the responses were:

- Their financial commitment to the treatment is high . . . and the chemotherapy drugs are very costly . . . and the overall treatment is way too expensive for an average Ghanaian. This will be too hard for them. (N2)
- Financial burden of patients affect the information they receive in the clinic. (D2)
- Patients also complain of the financial burden as they have to pay their treatment from the beginning through to the end . . . most of them say they are

traders and earn very little and therefore the payment is an issue for them. (D1)

- The disease is affecting their work, and this is affecting their ability to pay their treatment cost. (R2)

Participants again expressed distress from the disease as indicators that could result in anxiety and depression. The investigator identified this as a burden of the disease, and responses to these were:

- According to her, she lost her hair, finger nails were burnt, and had several issues with the drugs, which was distressing for her . . . She expressed concern, anxious, and didn't know how long she will live. (N1)
- Exposing themselves especially to male therapists is a big issue for these women. (D1)
- From the information patients provide, staff can tell whether this patient is in some distress. After the explanations of the side effects, the patient becomes even worse. (R1)
- So just seeing machines at the treatment unit is enough to scare them through their treatment trajectory. (R2)

For fear of the unknown, one of the professionals expressed it this way: "This in effect increases their anxiety and depression as they are constantly afraid." (N2) With their experiences, some also indicated some burden they see on patients. This was how it was expressed:

- She was anxious about the outcome of the treatment, family life, and coping with work . . . She was concern about the darkening of her skin as a result of radiation, sore throats, and her ability to go back to work after treatment. (D2)
- I realized that she was disturbed, and so I decided to talk to her. Money to pay bill was a problem, the husband was not in talking terms with her because of the burden of the family, besides they got married not long ago. (D1)
- She was afraid she was going to get a heart attack because somebody told her that her heart is close to the area of treatment. (R2)

Waiting times. A text search done on waiting time (Figure 7) revealed that the participants did not mention nor saw waiting times as major complaint from patients.

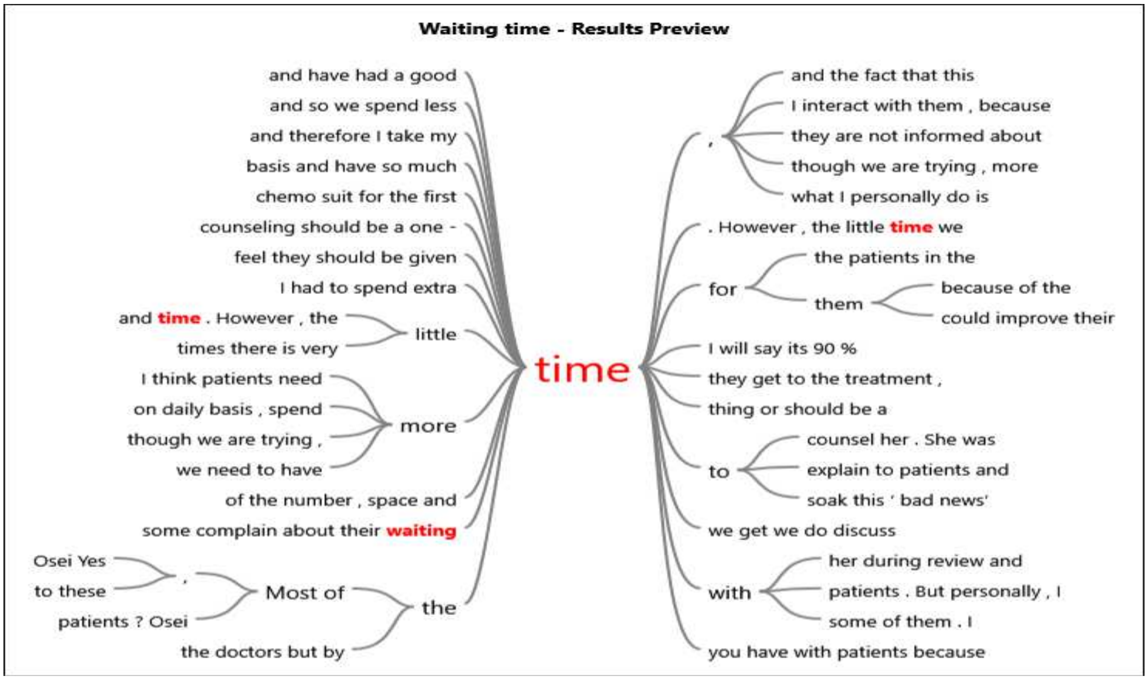

Figure 7. Text search on waiting time.

Interventions Prescribed for Patients

The section of the question was a kind of response to the complaint from patients. The responses indicated the interventions prescribed, discussed or suggested to patients undergoing treatment. Grouping them by professions, these were the responses;

- I try to reassure them of the treatment and counsel them of the fact that the side effect is not permanent and that once they finish their treatment, it will end. I try to educate them on the disease and the entire procedure. I encourage them to go through to the end. (D1)
- I also prescribe some medications for them sometimes, and some even get sleeping tablets because they complain of sleep impairment. I give them the right pieces of information, and when I feel I can't help, I usually refer to the appropriate unit. I give assistance in the form of introductory letters on request from patients to their work places for financial support. (D2)
- Explaining what the process is all about, and letting them know that, yes, the machine is big and scary, but this is what it does to treatment. I also inform them that I am monitoring the while treatment is ongoing and when they talk I can hear them and see them, so they should not fear. I usually advise them to do something they love doing to take their minds off all the stress. (R1)
- I inform them that if they are in any form of distress during treatment, they should signal me and then I will come to their aid. I usually advise them to get used to the treatment within a day or two. I also advise them to get relief or excuse duty from work or even take some days off while's treatment is

ongoing to get enough rest to cope with treatment if that will not cause any problem for them. (R2)

- The first stage is the counseling for the patients, I discuss every possible side effect to patients . . . I personally also try to debunk any negative information they have heard from people concerning the treatment, like "you will die', 'they will cut your breast,' 'your hair will be gone' and the likes. (N1)
- I try to talk to patients often and refer them to the doctors as and when needed. (N2)

Feedback From Patients

The second question was a follow-up question from the first issue on complaints from patients. Results from the feedback as expressed by participants are as follows;

- Patients usually get better and are less apprehensive in their next visit. (D2)
- They complain of several side effects that make them weaker and more worried even in their next visit. (N1)
- We have a positive feedback, for example those with financial burden by their next visit will be smiling and be cheerful especially when they get support from people. Again, by their next chemo visit, even if they may have complaints, they will look more friendly, and open-up. (N2)
- From their next visit or review, most of them become better and their confession changes. The anxiety or depression may not be completely gone, but they will still be positive. (D1)

- Most times, I will say it's almost 90% positive feedback. Those who do not put their minds to the reassurances we give them, of course, continues to have issues. (R1)
- Yes, we do see positive feedback, even from challenging patients if I should put it that way. (R2)

From a word frequency query run, words like patients, treatment, and anxiety were outstanding (Figure 8). There were also words like interventions, depression that showed up boldly.

Figure 8. Word frequency.

Management of Depression and Anxiety

The management discussed by participants as the interacted with their patients were; the need for a psychotherapist, or a counselor, spiritualist or a pastor, physical therapist or exercise, and finally medications.

Psychotherapy. Responses from five out of six participants indicated the need for a psychotherapist with the Oncology department in Ghana. These were the responses;

- One thing that I can think of is that you know in most companies or hospitals, they have Psychologists and Cognitive behavioral therapist who help in the counseling. (N2)
- I also believe that oncology department needs a clinical psychologist, it's essential because they can see to these patients separately. (D2)
- I think that we need psychologists to handle these patients. (D1)
- I think we should get a psychologist. (R1)
- I think we need a psychologist who will counsel these patients right from the start of treatment. (R2)

Spiritual. Two participants mention pastors and prayer.

- I also see pastors in the morning praying with some of the patients and I believe that also help with those who believe in these. (N1)
- I talk to them about their spirituality because of what I believe. Of course, we have variety of patients, some are Christians, Muslims, and other traditionalists, but I try to let them know that cancer diagnosis is not a death sentence and that is not the end of the world. (N2)

Physical therapy. Two of the participants spoke about the need for physiotherapy.

- Education on patients should be all round through the treatment and counsel them to exercise if possible to get some relief. (D1)
- I encourage them to exercise if they can. (R2)

Pharmacological: One of the doctors mentioned about prescription of drugs for patients at some point

- I also prescribe some medications to take care of the anxiety, and depression, some even get sleeping tablets because their sleep is impaired. (D2)

The Table 9 summarizes all the results discussed in this chapter on the interviews conducted.

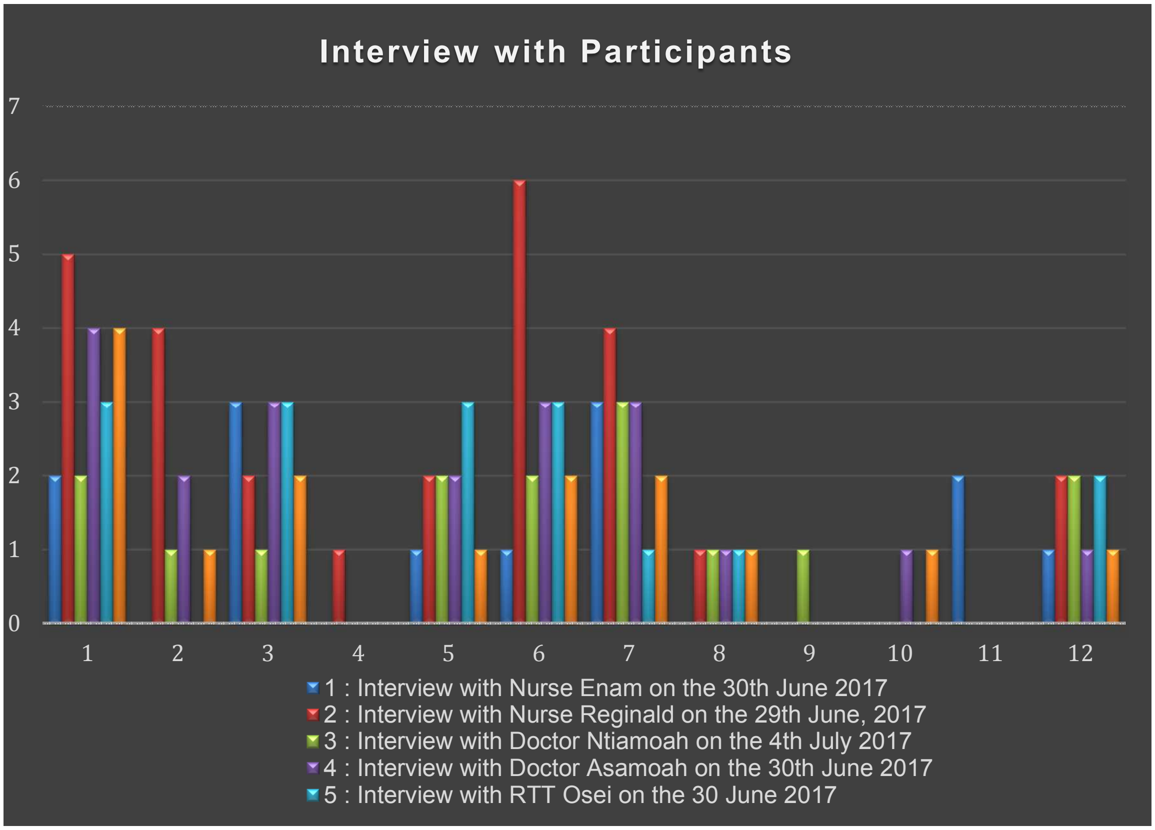

Figure 9. Summary of participant interviews (*N* = 6).

Quantitative Data

Descriptive Statistics for Demographics

The Table below provides the socio-demographic characteristics for the responses given by the 100 patient participants. The age group of 50-59 years had the highest frequency of 28% whiles the least was 80-89 years. All the participants (n=100) were females with the Akan tribe with the highest rate of 37%. Those married had the highest frequency (73%). With the employment status, 51% of the participants were full-time workers. Forty-one percent were not into any job as well. In all, 89% had no family history of breast cancer and the majority (55%) had the disease duration of one to three years. Finally, 41% of participants had a monthly income of less than a thousand Ghana Cedis (which is less than 300 USD).

Note. The *n's* do not always add up to 100 or a percentage of 100 because some of the patients decided not to answer some questions.

Table 3

Socio-demographics characteristics

Characteristic		Frequency (*n* = 100)	Percentage (%)	Cumulative percent
Age-group (YRS)	20-29	4	4.0	4.0
	30-39	22	22.0	26.0
	40-49	19	19.0	45.0
	50-59	28	28.0	73.0
	60-69	17	17.0	90.0
	70-79	9	9.0	99.0
	80-89	1	1.0	100.0
Family history	YES	10	10.0	10.0
	NO	89	89.0	99.0
Tribe	AKAN	37	37.0	37.0
	GA-ADANGBE	29	29.0	66.0
	EWE	19	19.0	85.0
	NORTHERN	15	15.0	100.0
Weight (KG)	31-50	7	7.0	7.0
	51-70	36	36.0	43.0
	71-90	43	43.0	86.0
	91-110	12	12.0	98.0
	>110	2	2.0	100.0

Table continues

Characteristic		Frequency (*n* = 100)	Percentage (%)	Cumulative percent
Marital status	SINGLE	11	11.0	11.0
	MARRIED	73	73.0	84.0
	DIVORCED	5	5.0	89.0
	WIDOWED	11	11.0	100.0
Disease duration	< 1 YEAR	13	13.0	13.0
	B/N 1 &3 YEARS	55	55.0	68.0
	> 3 YEARS	31	31.0	99.0
Employment status	FULL TIME	51	51.0	51.0
	PART TIME	6	6.0	57.0
	UNEMPLOYE	3	3.0	60.0
	RETIRED	36	36.0	96.0
	STUDENT	3	3.0	99.0
Monthly income (GH)	NIL	41	41.0	41.0
	100-999	21	21.0	62.0
	1000-1999	27	27.0	87.0
	2000-2999	5	5.0	92.0
	3000-3999	3	3.0	3.0

Descriptive Statistics for the Questionnaire

The Table below provides the socio-demographic characteristics of the responses given by the 100 patient participants. The age group of 50-59 years had the highest frequency of 28% whiles the least was 80-89 years. All the participants (n=100) were females with the Akan tribe with the highest rate of 37%. The married had the highest frequency (73%). With the employment status, 51% of the participants were full-time workers. Forty-one percent were not into any job as well. In all, 89% had no family history of breast cancer, and the majority (55%) had the disease duration of one to three years. Finally, 41% of participants had a monthly income of less than a thousand Ghana Cedis (which is less than 300 USD).

Table 4

Descriptive statistics for the questionnaire

		Age	Weight	Tribe	Marital status	Employment status	Monthly income	Disease duration	Family history
N	Valid	100	100	100	100	99	97	99	99
	Missing	0	0	0	0	1	3	1	1
Mean		3.63	73.60	2.46	2.16	2.33	1.25	2.18	1.92
Std. Error of Mean		.139	1.657	.151	.076	.149	.152	.065	.031
Median		4.00	72.00	2.00	2.00	1.00	1.00	2.00	2.00
Mode		4	60[a]	1	2	1	0	2	2
Std. Deviation		1.390	16.567	1.514	.762	1.478	1.493	.645	.309
Variance		1.932	274.465	2.291	.580	2.184	2.230	.416	.095
Skewness		.117	.429	.586	1.260	.334	1.519	-.187	-2.006
Std. Error of Skewness		.241	.241	.241	.241	.243	.245	.243	.243
Kurtosis		-.728	.089	-1.252	1.642	-1.749	2.645	-.625	6.187
Std. Error of Kurtosis		.478	.478	.478	.478	.481	.485	.481	.481
Range		6	84	4	3	4	7	2	2

a. Multiple modes exist. The smallest value is shown

Table 5

Bivariate analysis of factors associated with Anxiety and Depression

Characteristics	X^2	P
Age-group	1.02	0.002
Tribe	0.015	0.211
Marital Status	0.375	0.85
Employment Status	0.032	0.914
Monthly Income	1.47	0.5
Disease Duration	9.38	0.136
Family History	0.51	0.78

The chi square of the monthly income of patients with anxiety and depression was 1.47, and the p-value was 0.5. This indicates that income of patients has an effect on anxiety and depression.

Table 6

Anxiety and Depression on Life Frequencies

		Responses	
		N	Percent
Anxiety and Depression on treatment	not at all	46	5.1%
	Occasionally	414	46.1%
	quite often	327	36.4%
	very often	111	12.4%
Total		898	100.0%

a. Group

With 898 responses on anxiety and depression, 46.1% were occasional and 12.4% were very often.

Table 7

Anxiety and Depression on Treatment Frequencies

		Responses	
		N	Percent
Anxiety and Depression on life	not at all	313	17.4%
	several days	778	43.3%
	more than half the days	556	30.9%
	nearly everyday	150	8.3%
Total		1797	100.0%

a. Group

Out of the 1797 responses received from patients on anxiety and depression about their life while on treatment, 43.3% indicated several days.

Table 8

Regression Analysis

A. Descriptive Statistics

	Mean	Std. Deviation	N
Anxiety and depression on treatment	14.36	4.595	94
Age	51.32	13.641	94
Weight	72.76	16.063	94
Gender	2.00	.000	94
Tribe	2.49	1.515	94
Marital status	2.19	.766	94
Employment status	2.38	1.496	94
Monthly income	1.21	1.502	94
Disease duration	2.22	.658	94
Family history	1.93	.302	94

B. Model Summary[b]

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.397[a]	.158	.078	4.412	.158	1.988	8	85	.058

A. Predictors: (Constant), Family History, Age, Disease Duration, Tribe, Weight, Marital Status, Monthly Income, Employment Status

B. Dependent Variable: Anxiety And Depression On Treatment

Table continues

B. **ANOVA**[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	309.457	8	38.682	1.988	.058[b]
	Residual	1654.246	85	19.462		
	Total	1963.702	93			

a. Dependent Variable: Anxiety And Depression On Treatment

b. Predictors: (Constant), Family History, Age, Disease Duration, Tribe, Weight, Marital Status, Monthly Income, Employment Status

C. **Coefficients**[a]

	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
Model	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	24.223	5.137		4.716	.000	14.009	34.436		
Age	-.094	.042	-.280	-2.269	.026	-.177	-.012	.653	1.532
Weight	-.037	.030	-.130	-1.229	.222	-.097	.023	.892	1.121
Tribe	.486	.313	.160	1.554	.124	-.136	1.107	.933	1.072
Marital Status	.940	.635	.157	1.479	.143	-.324	2.203	.884	1.132
Employment Status	-.431	.488	-.140	-.884	.379	-1.400	.538	.393	2.543
Monthly Income	-.923	.443	-.302	-2.081	.040	-1.805	-.041	.472	2.119
Disease Duration	.528	.710	.076	.743	.460	-.885	1.940	.957	1.045
Family History	-2.403	1.566	-.158	-1.535	.129	-5.515	.710	.937	1.068

a. Dependent Variable: Anxiety And Depression On Treatment

Age (B = -0.094, ß =-0.280, t = -0.269, p < 0.05), and monthly income (B = -0.923, ß =-0.302, t =-2.081, $p < 0.05$) were statistically significant in predicting the anxiety and depression among the patients as compared to the rest of the variables. The beta value for disease duration, marital status, and tribe indicate that anxiety and depression on treatment increases respectively holding all other variables constant (0.76, 0.157, 0.160) showing a positive relationship. The VIF is less than 3 for all variables, meaning that there is a positive correlation. Hence, the assumptions are met, and therefore the conclusion is that the independent variables are not confounding. All other things equal, these lower levels of VIF, indicate a positive effect on anxiety and depression associated with a multiple regression analysis.

From Table 8, R (0.397) was found to be less than 0.5, indicating that there is a change in the model. The alternate hypothesis is therefore accepted since the independent variables significantly predicted anxiety and depression. An ANOVA was conducted for anxiety and depression as the dependent factors and demographic as the predictors.

Intervention of Anxiety and Depression

A greater percentage (30.7%) of the patients indicated meditation as their intervention while few (9.1%) were of the view that their doctors referred them for counseling (Figure 10).

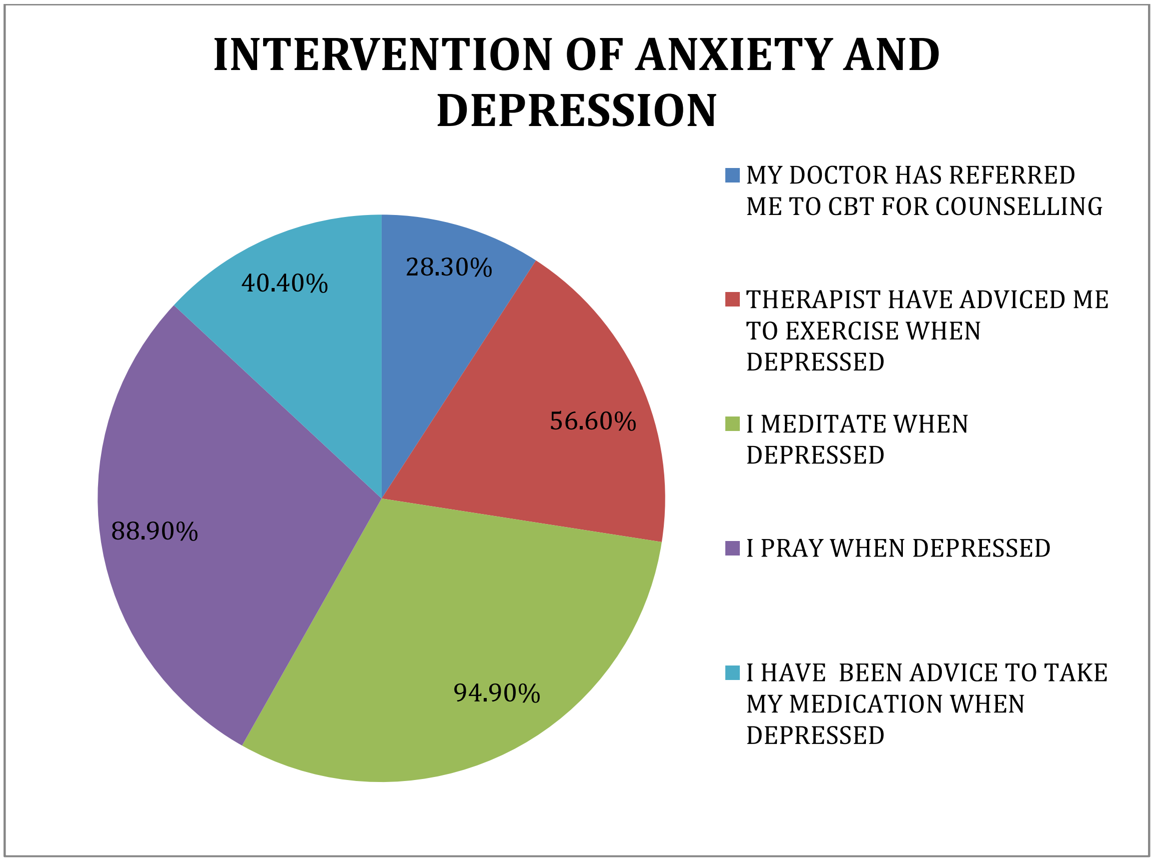

Figure 10. Interventions of anxiety and depression, *n* = 100.

Summary

The chapter presented the results of the findings. The first data was qualitative with typing the recorded data of the six participants into word and transporting them into the NVivo. Coding analysis followed by formation of emerging themes, visualization of results, and finally, recording all insights from analysis into write up. The quantitative part of the study described the demographics, and I conducted a descriptive statistics. I performed a bivariate analysis of factors associated with anxiety and depression for the independent variables. There was also a Regression analysis comprising Anova, and coefficients of variables such as Age, and monthly income were statistically significant in predicting anxiety and depression. The R (0.397) value was less than 0.5, which depicted that the alternate hypothesis could be accepted. The independent variables significantly predicted the Anxiety and depression. Finally, I presented the intervention of anxiety and depression in a pie chart, and a 30.7% indicated that they meditate whenever they are either anxious or depressed. Chapter 5 will further discuss and interpret these results of the findings.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This final chapter is organized into five sections beginning with the introduction. The overview consists of a short synopsis of the reasons underlying the purpose of the study, and I review the research questions and discuss the findings. I interpret the results in the context of the literature reviewed as well as the theoretical framework discussed in Chapter 2. The study limitations follow along with recommendations for further research and the implications for social change.

The purpose of this study was to find various interventions for depression and anxiety among breast cancer patients undergoing radiation treatment in Ghana. In this study I explored a combination of qualitative and quantitative data through a concurrent triangulation involving semi structured interview with some selected professional participants and a detailed survey. Through this study I sought to address a gap in the literature by identifying significant relationships between the responses of breast cancer patients undergoing radiotherapy treatment and their various levels of anxiety and depression, as well as their treatment responses. The research question for the quantitative study looked into how factors such as stage of cancer at presentation, the cost of treatment, waiting times, the burden of the disease, and other factors affect the treatment responses of patients. The qualitative portion of the study focused on the experiences of the patients with their caregivers as they underwent their treatment.

This study was vital given the scarceness of literature on the subject for Ghana and Africa at large. As discussed in Chapter 1, a thorough search of literature conducted among all the research studies identified only a few focused studies. These were on assessment of anxiety and depression among breast cancer patients undergoing radiation treatment (Srivastava et al., 2016; Hassan et al., 2015; Chintamani et al., 2011; Dastan & Buzlu, 2010; Vahdaninia et al., 2010), and none of these studies took place in Ghana or even in Africa. The experiences of cancer patients in the African context is different from those in the developed countries, and there are few studies on African patients. Most of the patients present with late-stage disease, and therefore the focus should be on how to manage them. The risk factors associated with anxiety and depression among cancer patients have been well documented (Yang et al., 2017; Metcalfe et al., 2013; Lin et al., 2013). Though limited, none of these studies were conducted in Ghana.

Issues that confront patients undergoing treatment in Ghana are different from what pertains in the Western world. For example, waiting time, cost, and stigmatization may not be an issue for a patient in the developed countries, but in Ghana, they are major problems. The literature discussed in Chapter 2 revealed that cancer patients in Ghana have to pay their cost of treatment because radiotherapy and cancer care are not under the National Health Insurance Scheme. The trauma of financial inadequacy coupled with long waiting hours before treatment is worrying. Factors such as age, marital status, occupation, total monthly income, and tribe play a critical role in determining the level of depression and anxiety. A common item noted in this study was the fact that any cancer diagnosis could be a very stressful experience for the patient as well as their family as a whole. These experiences coupled with the several issues associated with the diagnosis such as late presentation, treatment, and survival could pose significant uncertainty for these patients from the onset of diagnosis (Kim, Carver, Spiegel, Mitchell, & Cannady, 2017).

Interpretation of the Findings

Description of the Interviews

Following RQ1, I examined the experiences of breast cancer patients undergoing treatment on their levels of anxiety and depression. The data were from semi structured interviews with six participants, two male oncologists with 5-6 years of experience, two nurses (a male and a female) with 7-8 years of practice, and two radiotherapists (a male and female) with 9-10 years and 5-6 years of experience respectively. The experiences of patients as reported by the participants cut across cost of treatment, the burden of the disease causing distress in patients, and interventions prescribed.

Cost of treatment. The results indicated that professional participants received complaints from patients especially on distress, the burden of the disease on their life, fear of the unknown, cost of the treatment and their waiting times (Figures 5, 6, and 7). According to the participants, the burden of the disease resulted from the high financial commitment from patients which is one of the indicators of anxiety and depression. Treatment cost of breast cancer ranges between $1,000 - $2,000 and the reports from the study indicated that such money was too high for average patient. According to the participants, this affects the information patients received in the clinic during the review and their overall output. Again, the overall treatment cost could be much higher when chemotherapy and hormonal therapy are prescribed. These findings were in agreement with the study by Opoku et al., (2012) which indicated that financial burden could significantly affect the overall treatment outcome for patients undergoing treatment.

Responses from the participants (Figure 5) indicated what transpires in the oncology setting in Ghana. Doctors usually acquire the consent before the start of treatment, which includes discussion on the cost of treatment. This process may explain why both doctors mentioned cost as an indicator of depression and anxiety. Some therapists and nurses at some point spend time during treatment to further remind patients to pay their bills, though this is not mandatory for them to do. This reason may explain why some mentioned cast in the interviews and others did not. In the oncology setting in Ghana, only doctors are mandated to bill, prepare, and ask patients about their treatment bills.

On the whole, all the participants who mentioned cost from their interactions with the patients indicated a high level of pain and trauma resulting from the high cost of treatment of breast cancer in Ghana. According to the participants, this burden leads to elevated levels of anxiety and depression expressed at different points during their treatment regime. These findings were in line with a study by Opoku et al., (2012) that indicated patients' displeasure on the high cost of treatment. Though according to Ginsberg et al. (2012) literature on the cost of breast cancer treatment is mostly emphasized in the high-income countries, this study showed that cost of treatment is high in a middle-income country such as Ghana. A suggestion made by Zelle et al., (2012) identified cost-effectiveness analysis as an agent that could help intervene in the cost of treatment of breast cancer.

In an interview by a popular press firm with an oncologist in Ghana on the cost of cancer, Dr. Aryeetey indicated worries about the burden patients go through in the payment of their bills (Graphic online, 2015). Dr. Aryeetey expressed observations about the high cost of cancer treatment and how it places a burden on many patients, some of whom are unable to pay their medical bills. Dr. Aryeetey indicated that many cancer patients had abandoned their treatment as a result of the high cost of treatment, suggesting that a national cancer fund should be established to contribute towards the treatment of cancer in the country to lessen the financial burden on patients. Dr. Aryeetey also noted that due to the high cost of treatment, persons diagnosed with breast cancer may delay in seeking treatment, reporting later with advanced stages of the disease, when very little can be done to promote their survival.

In another press communication (Financial Times, 2013), a parent expressed worries and pointed out that families in Ghana struggled to meet the cost of cancer care and pleaded with the government to meet them halfway if possible. He said all his family savings had been spent on the treatment, and they had no money left to feed the rest at home, resorting to prayer camps for a solution.

Burden of the disease. As shown in to the Figure 6, the interviews indicated that the burden of the disease was the subject of some complaints from the patients under treatment. The constitution of the burden included financial commitment, worry about whether they will be able to complete treatment because of an inability to pay. Another burden that led to distress was the loss of hair, discolored finger nails, and various issues with cytotoxic drugs. Hair loss (alopecia), because it is visible to others, can cause considerable distress for patients (Boehmke, & Dickerson, 2005). The crown of hair is part of the patient’s self-image and can affect the patient’s confidence as well as the way they see themselves (Helms, O'Hea, & Corso, 2008).

One of the patients expressed her concerns to one of the participants (N1) about how upset she was after her hair loss, though she was counseled about it. According to Sheppard, & Ely, (2008), losing their hair could be associated feelings of with loss of sexuality and desirability by the patients. A recommended solution suggested by the Breast Cancer Network Australia (2011) was that patients have to be prepared thoroughly by the caregiver before the treatment, and individual patients should talk about it with others such as family and friends. This will help patients adjust to their temporary change in appearance. Breast Cancer Network Australia also suggested that patients discuss this change with their children to prepare them for it, assuring them that their hair will grow back.

On the issue of disfigured and darkening of their fingers and nail beds, N1 spoke about it as a complaint from patients, adding that counseling and consent before chemotherapy should include this information. Counseling should be provided for the patient regarding the changes to fingernails and toenails, pointing out that it is common with chemotherapy and assuring the patient that it usually fades a few months after treatment. This education could help patients cope with the changes that occur. Some of the drugs that cause nail changes include docetaxel, paclitaxel, Adriamycin, Cyclophosphamide, and 5-Fluorouracil (5FU), among others, and this should be made known to patients undergoing treatment (Canadian Cancer Society, 2017).

Participant N1 mentioned issues that impacted on the life of patients undergoing treatment. For example, participant N1 indicated that patient complaints included problems with some of the chemotherapy drugs. According to the Cytotoxic Safety Council (n,d), about 27 chemotherapy drugs are expelled from patients at high concentrations, and these could cause severe and irreversible illnesses. Some of these damage deoxyribonucleic acid (DNA), resulting in cell death and affecting the growth and the development of an embryo, leading to fetal death or defects.

According to N1, other issues were that patients were anxious about the outcome of treatment, family life, and ability to cope with work after treatment. These were all vital issues that confronted patients undergoing treatment. One other concern in the form of a complaint was sore throats as a consequence of the treatment. Patients indicated to D1 their inability to swallow properly as a result of the treatment. This complaint should have been discussed in the counseling session for patients before the commencement of the treatment. The staging of breast cancer is based on the TNM model, where T stands for size, N is for nodal involvement, and M represents metastasis or spread. Any nodal involvement will require treatment of the neck and therefore could lead to a sore throat. Proper technique of set-up for patients and counseling before the treatment could significantly reduce this. Patients should be advised to remain in the same position for treatment and cautioned that any movement of the neck while undergoing treatment could result in sore throat. Counseling of patients should include the management of sore throat, which is gargling salt water regularly, staying hydrated, and drinking warm water with lemon (BreastCancer.Org, 2017).

Another report from one of the participants was the treatment related fear exhibited by patients. According to N1, a patient was told by another patient that she would develop cardiac disease secondary to radiation therapy. This information, even though not accurate, led to fear, which led to depression and anxiety. Treatment of the breast and lymphatic drainage will undoubtedly involve some vital organs such as lung and heart. However, the treatment plan with proper calculation of the doses demonstrates how much each organ within the treated field is receiving and ensures that reference tolerance levels of each organ at risk is respected (Lawrence, Ten Haken, & Giaccia, 2008). All these will have to be communicated properly to patients during counseling and consent to avoid situations and comments from patients such as these.

On the waiting time of patients, only one participant (R1) mentioned about some complaint about their waiting time from a patient, which in effect led to anxiety. Almost all the participants said nothing about waiting time. This finding were inconsistent with a study by Kyei & Engel-Hills, (2011) in the same department of the hospital which revealed patients were delayed at every point in their treatment, affecting the flow of work in the department. The reason given for this was the increasing responsibilities of the few Radiation Therapist in the country, as well as the workload of doctors. Currently, there has been some improvement in human resource, and adopting appointments based treatment schedule and shifts schedule for treating patients possibly may have reduced patient waiting time as reflected in the study.

Interventions prescribed for patients and their feedback

These were various intercessions made by the professional participants for patients whiles they were on treatment. These were reassurances, explanations of the entire treatments and side effects, and counseling. Other interventions were encouragement, advice (such as doing something they love doing, get relief from work, and relaxation), monitoring, coping, debunking any negative pieces of information from them, prescriptions for medications, and on few occasions, referring to counsellors outside the department. All these interventions prescribed to patients the participants were consistent with literature studies by Zelle et al., (2012) as well as Guo, Tan, Li et al., (2013). In Table 1, some of the interventions suggested by Zelle et al., (2012) were supportive care and psychosocial care. Guo et al., (2013) also mentioned medication to patients who were undergoing several levels of anxiety and depression.

Feedback from patients according to participants were mostly generally positive except in few instances. According to participants, patients get better and are less apprehensive to their treatment. Some of the participants indicated that some come with smiles on their subsequent visit and are more cheerful, friendly and open-up to talk more. Another negative comment from patients as reported by the participants was feeling fatigued after treatment, and more apprehensive after explanations. According to this study, patients become less anxious when they know what is wrong with them, how treatment will be delivered when proper explanations on the side effects is given and the more importantly what to do as and when an issue arises. The level of anxiety experienced by one patient with breast cancer may, however, differ from another patient and that may probably explain why others had negative feedback. This finding was consistent with a literature study by Mura et al., (2012) that indicated reports of pain, weakness, and more apprehensiveness after patients received explanations for treatments.

Management of Anxiety and Depression

The interactions with participants ended with the way forward for patients, and this focused on the management of anxiety and depression for patients undergoing breast cancer treatment. The interventions were mentioned as management were the need for psychologists, spiritual, pharmacological, and physical.

Psychologists. Almost all the participants indicated the urgent need of psychotherapist which will mediate as a counselor for the patients and the Oncology unit. There was a cognitive behavioral therapist who in a way falls under psychology. This result is consistent with findings discussed in the literature, such as ADAA, (2016). Again, management of anxiety and depression psychologically offer some benefit to patients on treatment. A psychotherapist of a behavioral therapist can assist patients by decreasing the distress associated with disease, thereby improving the quality of life through continuous counseling (Jacobsen & Jim, 2008). The oncology department will need this services even if on a part-time basis. The involvement of a psychologist could help reduce depression and anxiety with the study center. The study of Jacobsen & Jim, (2008) recommended some psychosocial evidenced-based interventions for the management of anxiety and depression. The researcher is buttressing on some of them that will be applicable in Ghana for staff and patients. These are relaxation techniques with or without educational training, psycho-education, couples counseling for married patients, supportive expression therapy as well as cognitive-behavioral therapy.

Relaxation techniques. This method helps patients to relax, attaining a state of calmness, thereby reducing anxiety or depression.

Psycho-education. This is an evidenced-based therapeutic intervention where information and support in the form of education are provided to patients to help them understand and cope with their disease.

Couples counseling. This is a form of helping the couples recognize and accept the situation at hand, and improving their relationship in the way of supporting each through the trajectory.

Supportive expression therapy. This is a short term psychodynamic treatment aimed at a variety of diseases such as depression, anxiety and much more. The goal of this treatment is to underpin the patient's healthy and adaptive patterns of thought behaviors, thereby reducing the effect on the body.

Cognitive-behavioral therapy. It is a goal-oriented psychotherapy treatment that looks at the practical approach to managing problems through the change pattern of thinking or behavior.

Spiritual. Two of the participants (33.3%) mentioned prayers as management, and surprisingly they were all nurses. According to Stranahan (2001), nursing is the ability to make someone feel physically comfortable by various means. Maddox (2001), also explained it as the capacity to develop the body's ability to achieve or maintain health. The perception on the ground is that patients are usually more comfortable talking to nurses within the practice than any other profession, which may have perhaps led to this. A study by Oh & Kim (2014), concluded that spirituality is related to improved quality of life, and as well reduce anxiety and depression in patients undergoing treatment. According to them, spiritual interventions confirmed significant statistical effects on depression in patients with cancer.

Physical Therapy. One doctor and a therapist mentioned the need for exercise as a form of management of anxiety and depression for patients undergoing treatment, this according to one of the doctors (D2) could help the get some relief. The finding was consistent with the study by Stewart & Wild (2016) that mentioned exercise as a benefit in helping reduce depression and anxiety in cancer patients. Danielsson et al., (2013) also suggested exercise as a way of improving depressive symptoms.

Pharmacological. Among all the participants, only one (D1) cited prescription of medication to patients. This result was not out of order for a place like the study site because, in Ghana, only doctors are allowed by law to prescribe medicines to patients. This finding probably explains why no other person apart from a physician mentioned the need for medication. Medications according to Farach et al., (2012), could be used for the management of depression and anxiety, though the study concluded that the effectiveness and duration of treatment have not improved in most cases. According to studies by Pirl, (2004), there are 13 randomized controlled trials of medications of depressive symptoms for cancer patients including breast. Out of this, eleven are for primary treatment on depressive symptoms; only one was a pain symptoms, all the rest were for prevention.

From all indication, this will not be enough for cancer in general, looking at the various types of cancer worldwide.

Interpretation of the Survey

In research question 2, the investigator looked at how the effect of breast cancer, cost and waiting time affected patient's responses to treatment as well as their anxiety and depression level. There were evaluations of the demographic variables such as marital status, age, education, ethnicity, among others in multivariate models (Table 3). A survey of 100 patient respondents between the ages of 20 and 89 years completed and returned the questionnaire. Eighty Nine percent had no family history of breast, and 43% were between the 71-90kg of weight. Though 51% of the patients were working full time, it did not reflect their salary or money earned in a month because 41% indicated NIL for monthly, perhaps were retired, student and unemployed (36%, 3%, 3%).

With the family history, 89% had no history of breast cancer though diagnosed with the disease at the time of the study. This was consistent with studies as reported by ACS, (2013). According to ACS, between 5-10% of all breast cancer is inherited from parents and family members. Other studies also mention that women with close relatives to breast cancer patients have a higher risk of developing breast cancer (Shiyanbola, Arao, Miglioretti, et al., 2017). Another factor that doubles the risk of getting breast cancer is having one first-degree female relative such as mother, sister or daughter (Ja Kim, Jung, Eliassen, Chen, Willett, & Cho, 2017). In some instances, breast cancer is linked to having an abnormal gene such as *BRCA 1, BRCA 2* and *CHEK 2* (Ahern, Sprague, Bissell, et al., 2017).

The result highlighted 37% of the patients as Akan, followed by the GA's (29%). The Akan population is the largest in Ghana comprising of the Fante, Asante, Akuapem, Akwamu, and Akyem, Agona, Kwahu, Wassa, and Bono. This results, therefore, explains the high percentage by the Akans. From the study of Montazeri, Jarvandi, Haghighat, et al., (2000), a patient usually show a different need for support with various ethnic background. This results could, however, be generalized to the overall breast cancer patients population who present for treatment in Ghana.

With the majority of the patient (79%) within weight of 51-90 kg, it was indicative that most of the patients undergoing treatment were not overweight, nor obese. Usually, managing overweight and obese patients with breast cancer could be very challenging, in particular with the treatment technique of tangential fields. The treatment of breast which is usually tangential is to avoid treating the lungs and the heart within the chest region. However, with the tangential fields, the challenge with obese patients is the treatment of more breast folds within the axilla. According to the CDC reports in 2014, about 69% of all American adults are overweight, and this increases the risk of women in that category after menopause of developing breast cancer. The female hormone called estrogen usually support the growth of breast cancer. This estrogen often comes from fatty tissues, especially after menopause. Hence, an increased estrogen level enhances the chance of getting breast cancer. By implication, Ghana is slightly lower compared to some developed countries like America, to the risk of developing of developing breast cancer.

The link between weight and breast cancer risk which will result in anxiety and depression in patients is usually intricate. Studies have shown that risk increases for women who gain weight as an adult even though the same risk may not increase among those who have been overweight since childhood (American Cancer Society (ACS), 2014). Though established that gaining overweight and obesity increases one’s risk, there is no clear indication whether losing weight reduces a risk. In Ghana, a culture like the Akan, frown on overweight and obesity though results showed more patients with breast cancer as Akan (Table 3). There are also some cultures in Ghana like the GA-ADANGBE that see overweight and obesity as healthy living and evidence of wealthy living. In a study by Teras, (2012), the central question was whether overweight causes breast cancer. The author further indicated that women who lost weight and maintained it for over four years after menopause had a 40% lower risk of breast cancer.

Reports from both the World Cancer Research and the International Agency for Research on Cancer Fund indicate that there is a substantial indication that being obese or overweight causes breast cancer after menopause. Another study, by the ACS, 2014, found out that loss of weight was associated with about 83% lower risk of breast cancer. It is therefore essential that patient with overweight and obesity tries to lose weight as much as possible to improve their overall health (Teras, 2012). Although the relationship between breast cancer risk and weight loss is still under investigation, one of the key factor is that women can control that body weight.

In the study, 73% of the patient participants were married, and 11% were widowed (Table 6). According to the results, 83% were indicated their anxiety and depression with treatment (Table 7). In a study by Vahdaninia, Omidvari, & Montazeri, (2010), it was identified that being single was a protective factor for developing psychological distress while the widowed showed a greater risk. This findings was however not the case in this study because 83% of the patient population indicated levels of anxiety and depression though 73% of them were married. Again, marital status was associated with quality of life in a study by Parker, Baile, Moor, & Cohen, (2003) and patients with more family support reported less anxiety and depression. Contrary to the findings of Parker, et al., (2003), Hassan et al., (2015) was of the view that married women go through many levels of anxiety and depression because of family life and other dependents to take care. Again, Hassan was of view that single women may be scared of losing their partners and friends due to their loss of femininity attraction.

The disease duration shown in Table 3, revealed that only 13% of the participants presented within a year, but 55% were between the 1-3 years. This finding confirms late presentation of breast cancer in Ghana as reported by several studies (Opoku et al., 2012; Anderson et al., 2011; Clegg-Lamptey & Hodasi, 2007). Although the study did not find out reasons for late reporting on the side of the patients, the average duration of symptoms of more than a year is disturbing. This finding is similar to what was reported from the same hospital five years ago, indicating no effect of breast awareness programs because of the patient resort to herbal medications (Clegg-Lamptey & Hodasi, 2007). Most of the patients who presented after three years had probably reported previous and defaulted, likely to try an alternative treatment.

Anxiety and Depression in Daily Life of Patients.

Almost 95% of patients with breast cancer had anxiety and depression in different categories ranging from occasionally, quite and very often (Table 6). This result is very high compared to studies conducted Baqutayan, (2012) and Hassan et al., (2015). There can be some reasons for this differences in prevalence rate. The first explanation could be the late stage of presentation, the high cost of treatment, lack of financial support, lack of NHIS, inadequate family support, family dejections, ignoring by spouses, separation, divorce, fear, and the fact that some think it is communicable. There are other factors like the way of presentation of breast cancer in the African context, such as witchcraft, juju, and curse. Others resort to prayer camps, and there is various misinformation by spiritual leaders which leads to delay in presentation and then causes depression upon treatment.

There is a link between late presentation of breast cancer and awareness creation of the disease. In a study conducted by Clegg-Lamptey & Hodasi, (2007) about 60% of the breast cancer patients in Ghana reported with Stage III and IV disease within a duration of 8 to 10 months. This finding, according to Brewster, Thomson, Hole, Black, Stroner, & Gillis, (2001) is similar to the presentations within the developing countries and in Black American women. In Ghana, the duration between the detection of a breast cancer and presentation of clients to a hospital for treatment is usually long, and this was consistent with the findings of this study. Delay in treatment is common within the African context due to several reasons.

The term delay was defined by Harirchi, Ghaemmaghami, Karbakhsh, Moghimi, & Mazaherie, (2005) as the duration (two weeks or more) before visiting the hospital.

Other studies by Arndt, Sturmer, Stegmaier, Ziegler, Dhom, & Brenner, (2002) defined delay as the duration between a month to three between symptom recognition and seeking treatment. In contrast, Stapleton, Mullan, Dey, et al., (2011) was of the view that delay deals with the stage of the disease presentation.

Therefore, addressing the causes of this delayed presentation is probably essential than the promotion of early detection within the country. Usually, the worry is not only late presentation by patients, but also absconding of breast cancer treatment. Studies show that within the study site, almost 13% of breast cancer patients abscond after treatment has commenced (Clegg-Lamptey, Dakubo, & Attobra, 2009). The effect of this is more advanced stages, inoperable and incurable after these absconders later return.

Reasons for late reporting by patients according to studies were the lack of specialist within the country, ignorance on the side of patients, fear of mastectomy (Clegg-Lamptey et al., 2009; Elmore, Armstrong, Lehman, & Fletcher, 2005). Others reasons from the studies were herbal treatment, prayers and prayer camps, financial incapacity on the side of the patients, the fear of diagnosis, and resorting to food supplement by patients. Other reasons for absconding treatment by patients were fear of mastectomy, side effects of the chemotherapy, faith in their God among others.

Screening for breast cancer has, however, lead to an early diagnosis of breast cancer and a reduction in mortality among patients (Elmore et al., 2005). In Ghana, no organized nationwide screening program involves mammography to women at risk of breast cancer. Although some non-governmental organizations (NGOs), individual survivals, and other well-meaning groups try to organize breast cancer awareness seminars, talks, and conferences to educate women in this regard (Clegg-Lamptey et al., 2009). Though programs to stimulate early detection may not yield much of the desired goal because of the human resource available currently, it is essential to realizing early diagnosis in Ghana to help curb late presentations. In the developed countries many breast cancers are recognized by the patients, and that helps with early presentation. Hence, education of what to look out for and self-breast examination will also be crucial in helping avoid late presentation (DeSantis, Ma, Bryan, & Jemal, 2014). When diagnosis is made, education for patients could significantly reduce patients' level of anxiety and depression.

Fear as defined in a study by Donkor, Lathlean, Wiafe, Vanderpuye, Fenlon, Yarney, & Kyei, (2016) is an inimitable expressive state of a person which is a prompt response to a danger or any threat. According to Abdel-Wahab, Bourque, Pynda et al., (2013), fear is described by the wish to escape. In most developing countries, the disease is characterized by fear due to the nature of the disease, mortality rate, and the attribute that is witchcraft and death. The diagnosis of breast cancer, therefore, trigger different forms of fear, affecting the presentation of treatment and leads to anxiety and depression even when they present in Ghana. The possible reason is the fact that breast cancer education, survivor and support groups barely exist. Again, awareness creation is not universal, and breast survivals fail to come out publicly and share their experience for fear of mortification as well as stigmatizations.

Several studies have recognized the use of alternative medicine as a reason for the delay of breast cancer patients, and late presentation which in effect leads to anxiety and depression (Ermiah, Abdalla, Buhmeida, Larbesh, Pyrhönen, & Collan, 2012; Ibrahim, & Oludara, 2012; Otieno, Micheni, Kimende, & Mutai, 2010 Ukwenya, Yusufu, Nmadu, Garba, & Ahmed, 2008). In the studies by Ermiah et al., (2012) and Otieno et al., (2012) the two categories of alternative medicine that were identified to be common within the African context, where the locally based and foreign based therapies. Local based comprised of spiritual, prayer, traditional healer as well as herbal treatment. That of the external support were acupuncture, homoeopathy, and Chinese medicine.

Donkor et al., (2016) explains that the personal belief of patients was highly related to their using alternative medicine and therefore, the cultural model of every patient was essential. According to Stephens, Fryberg, & Markus, (2012), the cultural model any disease is defined as the cognitive model which postulates that seeking health care is prejudiced by cultural perceptions of the cause of that disease, the management as well as the coping behavior to eradicate the disease. In Africa, and Ghana, in particular, many cultures associate cancer with mystical beliefs and symptoms of disease are ascribed to a curse, bewitching, God or god's punishment due to personal or family atrocity or demons. These cultures can be very demoralizing to patients causing severe anxiety and depression on patients (Opoku et al., 2012). Their belief in the line of this makes it difficult to manage with contemporary medicine such as such as surgery, chemotherapy or/and radiotherapy will only worsen the condition. As a result of these, many Ghanaians rely on their faith, sorcerers, witch doctors, herbalists, priests/priestesses, pastors, and other spiritualists to treat cancer.

Anxiety and Depression of Patients on Treatment.

In this study, out of the 1, 797 responses from patients about 83% of them had depression and anxiety in different categories ranging from occasionally, quite and very often (Table 7). In Table 8B, the F value was 0.058, which indicated that the null hypothesis could be rejected and the alternate accepted. In this case, the conclusion is that there is a significant relationship between the responses of breast cancer patients and their level of anxiety and depression as well as treatment responses. The finding was consistent with other studies in Iran that showed 47.2%, and 57% of anxiety and depression respectively, though the percentage is very high in Ghana (Jadoon et al., 2010). Other studies in Pakistan also showed similar trends with 52%, 62% on anxiety and depression respectively (Jadoon et al., 2010). As explained earlier in the literature, the high prevalence of over 80% in Ghana could be patients' fear of death in the course of treatment, loss of hair during treatment, and their inability to get pregnant after treatment.

Interventions for Anxiety and Depression.

According to the responses from the patients, in Figure 10, there is very little information on Cognitive Behavioral Therapist to help them cope with the treatment. As a result of this many of the responses indicated that patients resort to meditation and prayers for management. This findings has been discussed thoroughly earlier. Medication was also not seen as a regular form of management, though some patients mentioned it. However, physical therapy was indicated by 18.3% of the patients undergoing treatment. The findings were inconsistent with studies in the developed where interventions such as psychosocial and other interventional supports helped cancer patients in adjusting to their diagnosis and treatment (Mustian, Alfano, Heckler, et al., 2017). An example was in a study by Guo et al., (2013) where psychosocial interventions supported patients by decreasing their psychological distress associated with cancer and improving their quality of life. Another study also indicated that Psychosocial and pharmacologic interventions offer some benefit on treatment for depressive symptoms with cancer patients (Baucom, Porter, Kirby, Gremore, & Keefe, 2006).

Regarding prayer, when individuals are faced with difficulties, comprising severe and life-threatening conditions such as cancer, they turn towards a higher power or religion as a way of coping (Thune-Boyle, Stygall, Keshtgar, & Newman, 2006). There have been works on the effects of religious/spiritual coping in cancer and the differences in these studies are in terms of methodology, and stages of disease (Nia, Sharif, Goudarzian, Allen, Jamali, & Gorji, 2017; Lewis, Maltby, & Day, 2005; Abernethy, Chang, Seidlitz, Evinger, & Duberstein, 2002). However, the results consistently show the importance of religiosity and spirituality in coping with a cancer diagnosis. Some other studies have found religiosity and frequent religious attendance to be protective factors against cancer (Mytko & Knight, 1999).

Other studies also highlighted the benefits of religious commitment which is affiliated with a particular church, rate of worship attendance as well as beliefs and concluded that these were associated with low level of anxiety (Ano & Vasconcelles, 2005). There has also been a significant bearing of religious coping in cancer patients on quality of life, and this has received prodigious consideration suggesting improvements in the quality of life of individuals committing to religion to cope with cancer (Tarakeshwar, Vanderwerker, Paulk, Pearce, Kasl, & Prigerson, 2006). Daaleman & Vandecreek, (2000) were of the view that coping with breast cancer religiously, provides a sense of drive and a context for the thoughtful experience of the disease even when it is advanced.

Integration of Data

This final stage of integration of quantitative and qualitative data through triangulation was used to understand further the entire literature and the findings of the staff and patients undergoing treatment. As was discussed in the methodology, the study used a combination of qualitative and quantitative data through a concurrent triangulation involving an interview with some selected professional participants and a detailed survey. The triangulation method was to show how the interviews support, confirms or disconfirm the responses from the patient participants.

The interviews with the professionals did support the responses from the patient participants. This support were in three sections on the experiences of breast cancer patients undergoing and how it affected breast cancer patients undergoing treatment. The first was on the cost of treatment which was discussed thoroughly by the professionals. This cost on the treatment supported the several complaints of patients due to the high cost of treatment and their inability to pay treatment because of the kind of job they do. This same cost, in turn, led to anxiety and depression on the side of patients. The second was on the burden of disease discussed by the participants which covered a variety of issues including waiting times. The final section looked at the interventions and management where the professional participants discussed what they do for patients to cope with anxiety and depression such as prescription of medications, and referral to a psychologist. Other interventions practiced in Ghana by many patients that did not show up clearly in the study within the oncology setting was physical therapy, and spiritual. The patient also discussed management though they mentioned meditation, and prayer as their highest form of managing anxiety and depression.

Theoretical Framework and Research Findings

The theoretical basis for this study buttressed the inputs provided in the survey that informs preventive or coping for patients undergoing anxiety and depression. This model was used to describe breast cancer treatment processes from the onset of the diagnosis, through treatment and the aftermath of treatment. The theory was again used to predict factors that lead to anxiety and depression both from patients and professionals. Finally, this theory was used to explain the management or coping with breast cancer within the context of the setting of the study. The findings of this study suggested a high level of anxiety and depression among breast cancer patients undergoing radiotherapy. The interventions mentioned by the patients showed less of cognitive behavioral therapists or psychologists, but the involvement of prayer, and meditation by the patients themselves.

The framework HAPA outlined motivational and volitional concepts used in the explanation and the prediction of individual changes in health behaviors among breast cancer management. The self-value of patients undergoing treatment was essential in the responses they gave on their depression and anxiety level. The motivational phase which dealt with issues of the risk awareness of patients were in two sections. The first, looked into patients’ level of information about their diagnosis and the second was of their responses. These two points were seen to have caused an increased in the anxiety and depression of patients undergoing treatment as reported by some of the professional participants. A concern to the researcher was the effect would occur on their level of survival and cope with treatment.

In the volitional stage, an intention to change a health behavior was needed, and such change as discussed with both patients and staff participants in the results sections was the need to strengthen the interventions necessary for these coping process. This intervention according to Schwarzer, (2008) must be planned, introduced, and sustained within the oncology setting, and as well, making plans to adjust, manage and accommodate any relapses that may occur during the process.

Limitations of the Study

One of the limitations among the issues identified was the recruitment of patient's participants for the quantitative study. Some of these patients were undergoing chemo-radiation and therefore required that the researcher include them in the study. This did not allow data collection only patients undergoing radiation treatment. The researcher however, recruited patients directly from the treatment floor, where the participants start the treatment.

Another limitation of the study which was discussed in the introduction was the language barrier since not all the members spoke, read or wrote in English. Although, plans were put in place for translation into the local language where the need arose, there was no systematic means to determine if the patient participants were in any way influenced by the investigator.

Additionally, the timeframe of when participants' answered the questionnaires, was not under the control of the researcher although an average time of 15 minutes was allocated for this. This may have influenced the responses from both the professionals and patients as several conditions could result in the description for the results/responses obtained.

Finally, since the study was limited to data on patient's socio-demographics level of anxiety and depression, other potential concepts of perceived anxiety and depression such as diagnosis, prior mental issues, and patients' medications were not reconnoitered. Unknown is whether, these variable constructs could have affected the study if explored.

Implication for Social Change

This study is imperious to promoting the scholarly research concerning the complete translation of the coping strategies in handling anxiety and depression. It is, therefore, crucial to improving on these numerous interventions and strategies that manage or cope with anxiety and depression, afore, through and after treatment. These supports will assist patients to deal with issues that confront them when undergoing treatment. Professionals have discussed thoroughly the issues confronting patients, and in turn, patients have voiced out their burden as they go through treatment. The researcher has outlined suggestions and coping mechanisms as a way of solutions throughout the discussion. The effect of the applications of these approbations will result in a social change from the study.

On the side of the professionals, it is essential that every multidisciplinary team member within the Oncology team ensures that efforts are put in place to identify and capture the coping mechanisms of every individual patient. Having in mind that every patient should be treated in a particular way because they cope differently with the burden of breast cancer, will help put in place support systems to assist, and inspire them. Again, there should be motivation for patients in helping them to develop coping skills needed to bear the psychological, financial, emotional, and the physical pain of the treatment.

Family members could be a source of strength to patients serving to improve the survival of patients even with the late diagnosis. Relatives and loved ones can be of help in assisting patients to discover working strategies to cope or manage their depression and anxiety. Reassurance, showing of affection, care and expression of concern for these patients will help them meet these burdens from the treatment, and their respective side effects. Again, educational supports could help patients who can read to a better deal and cope with the burden of the disease. Doctors and nurses should again bear in mind the possible addiction of drugs, and should cogitate non-pharmacological remedies to lessen the debilitating effects of this anxiety and depression (Koob, 2006).

The study's implications will contribute to wider society and cause positive change when all stakeholders (caregivers, multidisciplinary team, the ministry of health, Ghana health service, and the Government) take on responsibilities. These are helping, assisting, and putting in place measures that will guide the coping strategies of breast cancer patients. The information gained in this study will additionally help fill the gap in the literature on the assessment levels of depression and anxiety and how this assessment impact treatment outcome for breast cancer patients undergoing radiotherapy.

Recommendations

Recommendations for Action

For the useful implementation of the results, a summary will be disseminated to the three Oncology Centers in the country. This process will improve the knowledge of the breast cancer management and as well the coping mechanisms for patients in these categories. In doing this, the overall team members involved in the disease management will be more observant, vigilant and open to proceed with the suitable interventions and referrals as and when needed. A summary of these findings will also be available in written form, available in English and Twi, for patients with the contact details of the investigator in case they may have any questions. Each patient participant contributed to the study, and therefore these feedback regarding the results is necessary.

One recommendation which is keen will be for the Government and the Ministry of Health to place breast cancer treatment (Surgery, Chemotherapy, and Radiotherapy) on the NHIS. This request will be a significant relief for patients and family and will in effect cause patients to report early to the hospital. It will also help caregivers appreciate the survival of their patients on treatment and improve satisfaction to work. Another recommendation is getting free mandatory breast cancer screening services for patients in Ghana. This will also help see patients early and improve survival of patients. Finally, there are few oncology practitioners (30) in Ghana managing all cancer cases across the length and breadth of the nation. I recommend the training of more staff, or possibly sponsor more people who will show interest but have no financial support to undergo this program. This training in effect will improve patient-to-staff ratio and overall affect the care given to patients.

Recommendations for Further Study

The study confirmed higher levels of anxiety and depression among breast cancer patients undergoing radiotherapy treatment. Treatment of most of the breast cancers seen in Ghana requires radiotherapy, and the reason for this is the late presentation. Surgery and chemotherapy served as an adjuvant treatment before the commencement of the radiotherapy. The predictive relationship between late presentation and anxiety and depression were due to the factors such as cost, alternate medicine, and spirituality. Further studies with a larger population on late presentation of breast cancer covering the three cancer units in the country are recommended to provide an additional overview the situation in Ghana.

Again, further study to involve anxiety and depression of breast cancer patients from the surgery would provide support for this study's findings. Additional research may consider broadening the risk factors of the demographics to include the medical conditions before the presentation, medications history, stage of presentation would provide support for the findings. Lastly, future research may embrace investigation of the various risk factors associated with the separate items on depression and anxiety. There were several indications of depression which were distinct from anxiety, and that could additionally support the study’s findings.

Concluding Statements

There is a significant relationship between the responses of breast cancer patients undergoing radiotherapy and their level of anxiety and depression. Patients undergoing breast cancer treatment go through several experiences such as the burden of the treatment, high cost of treatment, and waiting time, resulting in high-level anxiety and depression. Late presentation to treatment is common in Ghana as a consequence of the multiplicity of reasons, affecting the overall survival of breast cancer patients. The effect sizes of the selected participants show a strength of relationship though not every variable was statistically significant to patients' level of anxiety and depression. Further and future research with a larger sample size of patients from all the three Oncology departments within the country would shed more light on the relationships examined in this study.

The study illustrates a need to understand how breast cancer patients in Ghana go through treatment with the high impact of anxiety and depression with treatment which affects total well-being and life after treatment. A further study using other cancers may allow the multidisciplinary team to envisage how interventions could be put in place to help entire patients cope with the disease. The success of these projections will eventually improve patient care and the delivery of health care in Ghana. A soon as the study is instigated, social change will have a budding realization rate.

Although interventions and management should be available to breast cancer patients with anxiety and depression undergoing treatment for their coping with the burden of the disease, a striking improvement in the survival of patients could be achieved when proper systems are put in place by the Ministry of Health and the Government.

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Appendix A: Survey Instruments

WALDEN UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

Title: Assessment of Anxiety and Depression among Breast Cancer patients in Ghana

Name of Researcher:

Name of Supervisors:

Please remember that this is not a test and there no answer regarded as correct or wrong. Individual participants may have different responses and no one will know how you answered the questions.

If you have any concern about the study and you wish to contact someone independent, you may contact:

Instructions: Please tick or insert the appropriate feedback

Part One: Socio-Demographic Data

1. Folder Number……………………………
2. Age ……………………………………….
3. Weight……………………………………
4. Gender: Male [ ] Female [ ]
5. Tribe………………………………………
6. Marital Status: Single [ ] Married [ ] Divorced [ ] Widowed [ ]

7. Current occupation or last job………………………………………..

8. Current Employment status: Full time [ ] Part time [ ] Unemployed [ ] Retired [ ] Student [ ]

9. Total monthly income ………………………..GH Cedis

10. Disease Duration: Less than 1 year [ ] Between 1 and 3 years [ ] Greater than 3 years [ ]

11. Family History: Yes [ ] No [ ]

Part 2A: Anxiety and Depression about your Treatment

1. I feel tense about my treatment

Not at all [ ] Occasionally [ ] Quite often [ ] Very often [ ]

2. I get frightened when I have to go for my treatment

Not at all [ ] Occasionally [ ] Quite often [ ] Very often [ ]

3. The duration of treatment makes me nervous

Not at all [ ] Occasionally [ ] Quite often [ ] Very often [ ]

4. The waiting time makes me more anxious

Not at all [ ] Occasionally [ ] Quite often [ ] Very often [ ]

5. I am losing interest in my appearance during my treatment

Not at all [ ] Occasionally [ ] Quite often [ ] Very often [ ]

6. I feel restless anytime I have to wait for my turn in treatment

Not at all [ ] Occasionally [ ] Quite often [ ] Very often [ ]

7. I do laugh and see the funny side of things during my treatment

Not at all [ ] Occasionally [ ] Quite often [ ] Very often [ ]

8. There is a worrying thoughts anytime I have to go for my treatment

Not at all [ ] Occasionally [ ] Quite often [ ] Very often [ ]

9. I get sudden feelings of panic

Not at all [ ] Occasionally [ ] Quite often [ ] Very often [ ]

Part 2B: Anxiety and Depression about Life during Treatment

1. Since the diagnosis, I am able to concentrate on what I do

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]
2. I have loss of sleep over worry

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

3. I am capable of making decisions after diagnosis was made
Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

4. I feel constantly under strain
Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

5. I am able to enjoy day-to-day activities

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

6. I feel unhappy and depressed
Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

7. I have lost confidence after the diagnosis
Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

8. I now thinking of myself as worthless

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

9. I have little interest or pleasure in doing things

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

10. I feel down, depressed or hopeless

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

11. I feel bad about myself

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

12. I feel I have let my family down

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

13. I have trouble falling or staying asleep

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

14. I sleep too much
Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

15. I feel tired and have little energy

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

16. I have poor appetite

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

17. I have troubles with concentration

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

18. I have strange thoughts that I am better off dead than alive

Not at all [ ] Several Days [ ] More than half the days [ ] Nearly every day [ ]

Part 3: Interventions of Anxiety and Depression

1. My doctor has referred me to a Cognitive-behavioral therapy (CBT) for counselling

   Yes [ ] No [ ]

2. My Therapist has advised me to exercise when I feel anxious or depressed

   Yes [ ] No [ ]

3. Whenever I feel depressed or anxious, I meditate

   Yes [ ] No [ ]

4. Whenever I am anxious or depressed, I pray

   Yes [ ] No [ ]

5. My doctor/Nurse have advised that I take my medication when I feel nervous or depressed

   Yes [ ] No [ ]

Appendix B: Letter of Invitation for Professionals

Title of Study: Assessment of Anxiety and Depression among Breast Cancer patients in Ghana

Name of Researcher: Kofi Adesi Kyei

Name of Supervisors:

I, Kofi Adesi Kyei, from the Department of Public Health, Walden University, invite you to participate in a research project entitled Assessment of Anxiety and Depression among Breast Cancer patients in Ghana.

The purpose of this research study aims to find various interventions for depression and anxiety among breast cancer patients in Ghana. Should you choose to participate, you will be interviewed briefly to share and provide different opinions about anxiety and depression of the breast cancer patients under your care as they go through radiotherapy. The expected duration for this interview will be 15 minutes

Through this the study, the quality of life of breast cancer patients undergoing radiotherapy could improve particularly during their end-of-life stage. The expectation is that the study will promote positive social change in the form of coping strategies, and awareness creation, with the aim of preventing breast cancer. The latter will be through various levels of cancer education to both the client and the caregivers. Findings from the study could also be used to plan policies that may support methods beneficial to the advancement of Oncological services within Ghana and Africa since many neighboring countries within the West Africa patronize the Oncology services in Ghana. Finally, the possibly positive social change resulting from the study could be seen globally and locally providing a basis for future studies, especially within the cancer setting within the coming years on depression and anxiety.

At the end of the interview you will be contacted to review the transcript.

If you have any pertinent questions about your rights as a research participant, please contact

Thank you,

Investigator’s Signature …………………………

Appendix C: Semi structured Interview Questions

E 1: Semi-structured interview questions with the Oncologists

Researcher's questions

1. In your clinical reviews, do you get complains from patients about their level of depression and anxiety?
2. What form of interventions do you prescribe for these patients?
3. Do you get any positive feedback as responses from these patients during next visit or follow-up?
4. In your opinion, what can be done to improve the management of depression and anxiety of breast cancer patients?
5. Can you share your experience with me, how you have used your method of intervention to manage the anxiety and depression of breast cancer patients undergoing treatment

E2: Semi-structured interview questions with the Radiotherapists

Researcher's questions

1. In your daily treatment, do you get complains from patients on the level of depression and anxiety?
2. What forms of interventions do you discuss with them?
3. Are there any feedback you receive from these clients?
4. Do you think the team can improve the management of anxiety and depression of breast cancer patients?

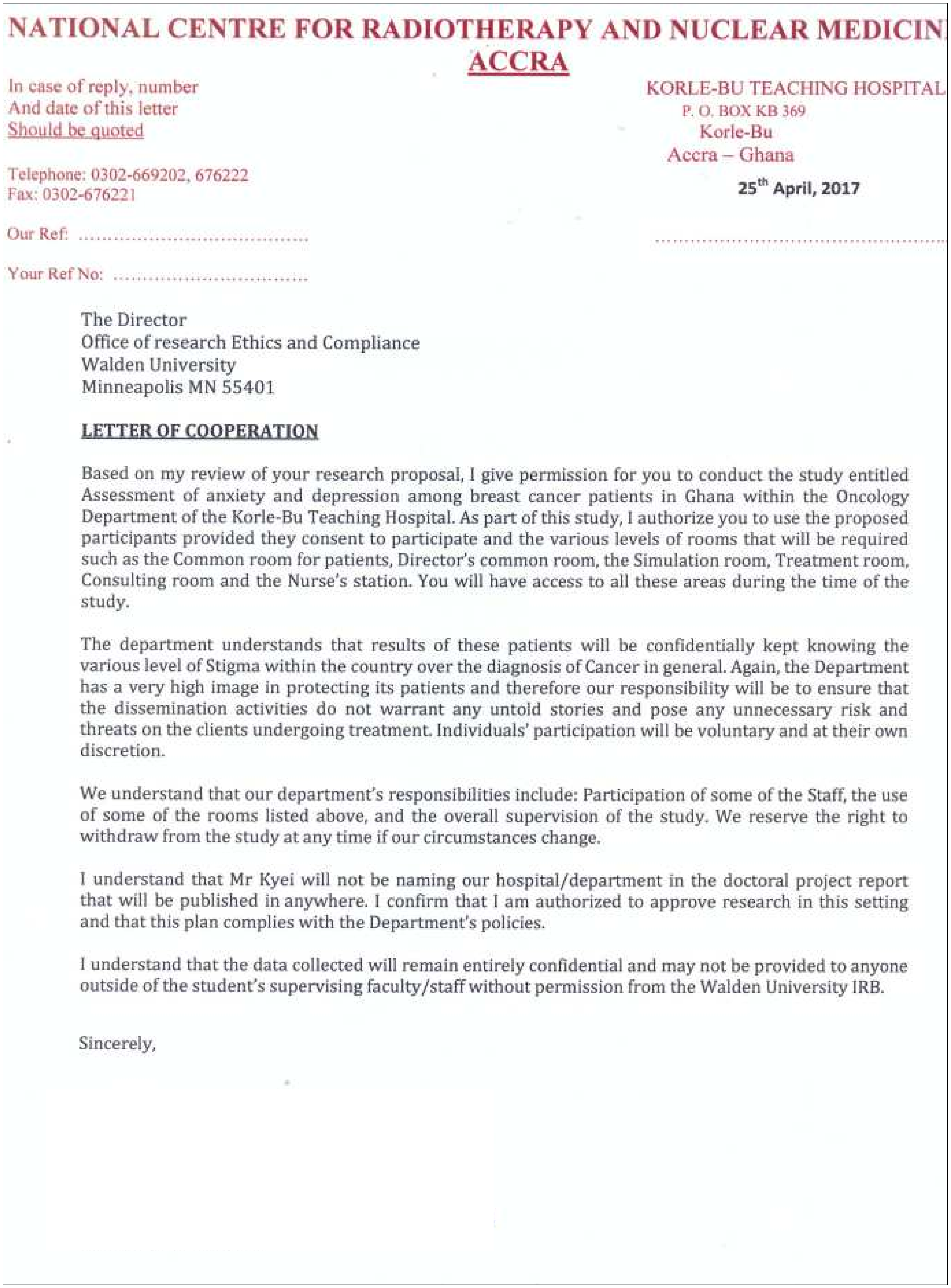
5. Is there anything, you will like to share with me on your experiences with patients. Are there any peculiar interventions you have used in the past?

E3: Semi-structured interview questions with the Nurses

Researcher's questions

1. In your weekly reviews, do you get complains from patients on the level of depression and anxiety?
2. What forms of interventions do you discuss with them?
3. Are there any feedback you receive from the patients?
4. Do you think your team can improve the management of anxiety and depression of breast cancer patients?
5. Is there anything, you will like to share with me on your experiences with patients. Are there any peculiar interventions you have used in the past?

Appendix D: Letter of Cooperation



NATIONAL CENTRE FOR RADIOTHERAPY AND NUCLEAR MEDICIN
ACCRA

In case of reply, number
And date of this letter
Should be quoted

KORLE-BU TEACHING HOSPITAL
P. O. BOX KB 369
Korle-Bu
Accra – Ghana

Telephone: 0302-669202, 676222
Fax: 0302-676221

25th April, 2017

Our Ref: ....

Your Ref No: ....

The Director
Office of research Ethics and Compliance
Walden University
Minneapolis MN 55401

LETTER OF COOPERATION

Based on my review of your research proposal, I give permission for you to conduct the study entitled Assessment of anxiety and depression among breast cancer patients in Ghana within the Oncology Department of the Korle-Bu Teaching Hospital. As part of this study, I authorize you to use the proposed participants provided they consent to participate and the various levels of rooms that will be required such as the Common room for patients, Director's common room, the Simulation room, Treatment room, Consulting room and the Nurse's station. You will have access to all these areas during the time of the study.

The department understands that results of these patients will be confidentially kept knowing the various level of Stigma within the country over the diagnosis of Cancer in general. Again, the Department has a very high image in protecting its patients and therefore our responsibility will be to ensure that the dissemination activities do not warrant any untold stories and pose any unnecessary risk and threats on the clients undergoing treatment. Individuals' participation will be voluntary and at their own discretion.

We understand that our department's responsibilities include: Participation of some of the Staff, the use of some of the rooms listed above, and the overall supervision of the study. We reserve the right to withdraw from the study at any time if our circumstances change.

I understand that Mr Kyei will not be naming our hospital/department in the doctoral project report that will be published in anywhere. I confirm that I am authorized to approve research in this setting and that this plan complies with the Department's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

Appendix E: Interview with D1

Interview with Doctor Asamoah on the 4th July 2017. Asamoah is a Radiation Oncologist at the Oncology Department of the Korle-Bu Teaching Hospital. He lives in Accra Ghana and has practiced for over Five years

Q.1. Complaints from Patients

Kofi
In your daily treatment, do you get complains from patients about their level of depression and anxiety?

Asamoah
Yes, we do normally on their weekly reviews, when the patients come in for review, some of them will not normally speak out until you ask them. But you can tell from their body language that they are depress and anxious about the ongoing treatment.
Sometimes, I can tell from their faces and further probe into it by asking them. Some of them open up especially their treatment, having little idea about and on the treatment whiles others are worried about the side effect of the therapy.
I also can tell from the level of questions they ask me in the consulting room. It tells how anxious and depressed they are. Some ask questions about the aftermath of treatment and what will happen to them. Whether the treatment will be effective at the end or not.

Q.2. Interventions prescribed

Kofi
What forms of advice and interventions do you prescribe for these patients?

Asamoah
Well, I think the clinic is always heavy for the breast cases and so we spend less time with patients. But personally, I try to reassure them of the treatment and counsel them of the fact that the side effect are not permanent and that once they finish their treatment it will end. Sometimes, I also prescribe some medications to take care of the anxiety, and depression, some even get sleeping tablets because their sleep is impaired.
Mostly, I think that the reassurance I give sustain them throughout their treatment.

Kofi
Let me pick up on what you said about the less informed patients. Where is that coming from, because we know you doctors do the counselling?

Asamoah
You can identify a lot of areas, I wouldn't say the clinic alone, but they also go through treatment every day of the week, and some also go through chemotherapy. But mostly I think because the first point of call is the doctors, they may have to bear that. I think we need to have more time for the patients in the clinic. Some of the patients will also leave the clinic without any information because of the same anxiety and depression. They will now present it as if we didn't explain anything to them. Some of the patients also try to do double check on the information received, hence will pretend that they have not been informed.
I think studies have even showed that financial burden of patients affect the informations they receive in the clinic. I think to me its multi-factorial.

Q.3. Feedback from patients

Kofi

Do you get any positive feedback as responses from patients during their next visit of follow-ups?

Asamoah
Yes patients usually get better and are less apprehensive in their next visit. Our reviews are weekly and so by the next visit, the patients will have undergone five sessions of radiotherapy and usually, they are better, some even will have smiles on their faces and others will also want to ask more questions.

Q.4. Management

Kofi
In your opinion, what can be done to improve the management of the depression and anxiety of breast cancer patients?

Asamoah
Doctors and the other staff can really improve on the discussion and counselling session with patients. I think patients need more time, though we are trying, more time for them could improve their management. I also think that oncology department needs a clinical psychologist, it's very important because they can see to these patients separately.

Q.5. Share your experience

Kofi
Can you share your experience with me, how you have used your method of interventions described to manage the anxiety and depression of patients undergoing treatment.

Asamoah
There was one particular patients I saw in clinic who was concern about the darkening of her skin as a result to radiation, sore throats and her ability to go back to work after treatment during my counselling session. She was anxious of the outcome and as well depressed about the post treatment, family life and coping with work.
What I personally did was to ask of her from the therapist on daily basis, spend more time with her during review and counselling. Kept reassuring her o weekly basis through to her final day. I created a friendly environment whenever I saw her at the clinic and that made her feel more relax to face the reality.

Appendix F: Interview with D2

Interview with Doctor Ntiamoah on the 30th June 2017. Ntiamoah is a Radiation Oncologist at the Oncology Department of the Korle-Bu Teaching Hospital. He lives in Accra Ghana and has practiced for 5 years

Q.1. Complaints from Patients

Kofi
In your clinical reviews, do you get complains from patients about their level of depression and anxiety?

Ntiamoah
I will want to start from the from the simulation process, because we review them prior to simulation and treatment. The simulation procedure requires that the women remove their cloths, before the process could begin. You and I know how women cherish their breast, hence that alone makes them depressed and anxious. Remembers that it begins the whole process, and if they are to daily remove their dress for treatment, it certainly not a pleasant situation.

We in the clinic try to explain to them the whole process, but I think that not until they get through the simulation, they will not see how hard it will be. These are some of the complaints patients go through. Exposing themselves especially to male therapist is a big issue for these women. Mind you therapist in Ghana are highly dominated by males, about 4:1 ratio.

Patients also complain about their skin marks made on their body by the therapists as a way of keeping the treatment field. These marks according to the patients do itch, makes the anxious and sometimes form blisters. According to these, most of the time, they are not informed about the side effects of the skin marks and this makes them very uncomfortable even at home. This makes them more anxious.

Patients also complain of financial burden as they have to pay their treatment from the beginning through to the end. That indeed is a mind blowing and affects their level of anxiety and makes them depressed. Most of them say they are traders and earn very little and therefore the bill of payment is an issue for them.

Kofi
OK, what about those on treatments?

Ntiamoah
The most complains patients talk about with me is the darkening of their skin, sore throats, and fear of death resulting from the conversations they have with other friends, relatives and other patients. Some of the things they hear according to these patients make them more anxious and depressed and it’s even scary.

Q.2. Interventions prescribed

Kofi
What forms of advice and interventions do you prescribe for these patients?

Ntiamoah
Yes, myself for instance, I try to educate them on the disease and the entire procedure through simulation and treatment. I try to assure them of the treatment and encourage them to go through to the end. What I think it’s the issue is that the patients’ complaints indelible marks we put on the patients is too much and that makes and increases their anxiety level.

With the treatment, I keep assuring them and give them the right informations. If one is not sure of any interventions should refer to the appropriate unit.

Q.3. Feedback from patients

Kofi
Do you get any positive feedback as responses from patients during their next visit of follow-ups?

Ntiamoah
Patients think a lot from variety of issues but besides, from their next visit or review, most of them have become better and their confession changes. The anxiety may not be completely gone, neither the depression, but they will still be positive.

Q.4. Management

Kofi
In your opinion, what can be done to improve the management of the depression and anxiety of breast cancer patients?

Ntiamoah
I think that we need psychologists to handle these patients, you know the workload is much higher on the sides of the doctors, we are few, see patients in the clinic, do brachytherapy, chemotherapy, planning, etc, hence, it will not be enough for us to see all these patients on daily basis and have so much time for them because of the workload. Education on patients should be all round through the treatment.

Q.5. Share your experience

Kofi
Can you share your experience with me, how you have used your method of interventions described to manage the anxiety and depression of patients undergoing treatment.

Ntiamoah
I can remember one of the patients I saw some few months ago, she came for review and I realized that she was disturbed and so I decided to talk to her. Money to pay bill was a problem, husband was not in talking terms with her because of the burden of the family, besides they got married not long ago.
The disease was heavy on her and that made her depressed and so I kept talking to her from one review to the next and I think it did help her.

Appendix G: Interview with R1

Interview with RTT Pearl on the 30th June 2017. Pearl is a Radiation Therapist at the Oncology Department of the Korle-Bu Teaching Hospital. She lives in Accra Ghana and have practiced for Five years

Q.1. Complaints from Patients

Kofi
In your daily treatment, do you get complains from patients about their level of depression and anxiety?

Pearl
Yes, they do complain and usually the complaints on anxiety has to do with not knowing much about the treatment. Apart from this, some of them are illiterate, so explanations might have gone on by the doctors but by the time they get to the treatment, they may have forgotten everything. They may probably have misunderstood all what the doctors said and refused to asked questions because of the same anxiety. Again, just the fact that they have been diagnosed of cancer is enough to cause depression in them.
Depression has to do with in the lay man's term 'the person's spirit is really down' or one's spirit being dumping. But anxiety is worrying about the conditions and what is going to happen if I should explain further. So just seeing machines at the treatment unit is enough to scare them through their treatment trajectory.

Q.2. Interventions prescribed

Kofi
What forms of advice and interventions do you prescribe for these patients?

Pearl
Sometimes this anxiety and depression stems from not knowing what the treatment is all about. So some of the interventions are explaining exactly what the process is all about, and letting them know that, yes the machine is big, and scary but this is what it does to treatment. You also have to inform them that you will be monitoring them on the machine in the control room, when they talk we can hear them and see them so they cause for fear.
We also inform them that if they are in any form of distress, they should signal us and then we will come to their aid. We also assure them that they will get used to the treatment within a day or two, eventually they get used to it.
Apart from that, we advise them on their waiting, some complain about their waiting time, and the fact that this is affecting their work which gives them earning to enable them pay their treatment cost.
Aside these, the whole stress of moving up and down and coming to the hospital for like 30days continues is worrying to them and this is enough to cause anxiety and eventually depression.
We therefore tell them to get relief or excuse duty from work or even take some days off while's treatment is ongoing in order to get enough rest to cope with treatment.
We also advise them to do something they love doing in order to take their minds off all the stress they are going through.

Q.3. Feedback from patients

Kofi
Do you get any feedback as responses from patients after these interventions?

Pearl

Yes, we do see positive feedback, even from very difficult patients if I should put it that way. There was a one patients who came, when she told about the treatment, her response was, she will not do it, and that she needed to think about it with her pastor and family. She returned in a month to begin, after thorough explanations has been given.
Eventually, she calm down after a thorough discussion we had with her, because she was somebody who was always moody, but after the counselling, she became friendly. She was encouraged to do the treatment by the Therapist and that was very positive.

Q.4. Management

Kofi
In your opinion, what can be done to improve the management of the depression and anxiety of breast cancer patients?

Pearl
I believe we can improve on what we doing, especially from the Therapist point of view. Much more I think we need a psychologist who will counsel these patients right from the start of treatment. Apart from that, we the Oncology team have do to our best to explain into details to patients on their treatments. Their side effects and how to handle them. We also have to encourage to inform the team whatever will be bordering them in the course of treatment especially when they go for their reviews.

Q.5. Share your experience

Kofi
Can you share your experience with me, how you have used your method of interventions described to manage the anxiety and depression of patients undergoing treatment.

Pearl
Well, there are several angles that I can come from with the years of work experience. Some patients come in and because at home nobody is minding them, neglected because of the disease, come in with lots of complaints. But as you talk to them, you realize that they are in much distress.
I remember one patient, right from the start, she said she not going to do the treatment because of what she had heard, and I had to spend extra time to counsel her. She was afraid she was going to get heart attack because somebody told her that her heart is close to the area of treatment. She said so many things and I had to sit her down, explain the procedure and side effects of the treatment, though I believe the doctor had told her these things.
I advised her to pray and hope for better. She was better off after the discussions with her.

Appendix H: Interview with R2

Interview with RTT Osei on the 30th June 2017. Osei is a Radiation Therapist at the Oncology Department of the Korle-Bu Teaching Hospital. He lives in Accra Ghana and have practiced over Nine years

Q.1. Complaints from Patients

Kofi
In your daily treatment, do you get complains from patients about their level of depression and anxiety?

Osei
Oh Yes, severally and sometimes they don't really need to tell you, looking at them critically will inform you that this patients is in some kind of distress and they need some kind of comfort and reassurance. At times when they because of the mere fact of the breast cancer disease, you will see that they are depressed, even from their responses to the questions you ask them.
After the explanations of the side effects, patient become even worse and that is where we come in and give assurances and reassure of them of the treatment.
I feel that the informations we give them may be sufficient but the timing is where the problem comes. Diagnosis is done in the consulting room, not the treatment room, so I feel when patient at the treatment has no informations, then where the informations was given and the timing wasn't right. The mind is usually blogged at the consulting room to the news of the diagnosis. So in this state when counselling is ongoing, less information is picked up from. I feel they should be given time to soak this 'bad news' if I should put it that way, and then a different day is set for counselling for the treatment if the need be.

Q.2. Interventions prescribed

Kofi
What forms of interventions do you prescribe for these patients?

Osei
Most of the time, what I personally do is that when they starting the treatment I ask them whether they have any idea of the side effects of the treatment and some will boldly say NO.
Meanwhile, you know that these patients have signed consent and the moment that has been done, patients should have idea of the side effects. But, like I said the counseling doesn't go really well with them because of the news of cancer. So patients like these will have to go through counselling again from me. When I see that they are still not satisfied with the explanations, I refer them back to the doctor.

Kofi
Do you think the counseling should be a one-time thing or should be a daily basis?

Osei
Well, for me I think our weekly review is enough, and meanwhile we the therapist also counsel patients on daily basis as they go through their treatment, so I think that is fine. However, a trained counsellor will help in this.

Q.3. Feedback from patients

Kofi
Do you get any feedback as responses from patients after these interventions?

Osei

Yes, most of the time I will say its 90% positive. Those who do not put their minds to the reassurances we give them of course will have issues. Along the line of treatment, they come back to us and we explain further on their questions. Some of the patients by reason of listening to friends and other patients get themselves more confused. Because imagine a cervical patients telling a breast patients some of the side effects she is experiencing. This breast patient may feel she will experience same side effects. This is where some take further burden of depression and anxiety so if they do not come back to tell you their feedback, then they go through like this and suffer.

Q.4. Management

Kofi
In your opinion, what can be done to improve the management of the depression and anxiety of breast cancer patients?

Osei
I think we should get a psychologist or another different doctor to do the counselling, it should not be the same doctor who broke the bad news to them. I think that is the only thing we are missing out.

Q.5. Share your experience

Kofi
Can you share your experience with me, how you have used your method of interventions described to manage the anxiety and depression of patients undergoing treatment.

Osei
Most of the patients have been treated personally, I sometimes give my personal numbers to call in times of any distress and have had a good time with some of them. I sometimes even call to verify how they are doing, though I will not mention names, I think it's been cordial with them and the responses have been positive.

There was one patient that did not want to do the treatment but I advised her to go through the treatment and that her refusal to undergo treatment may progress the disease and she may get worse. Initially, this was difficult but she agreed and went through. Later after her treatment, she came to thank me and was so grateful to the team.

The other patients told me frankly that her pastor advised her not to undergo the treatment. This I also took it upon myself to explain to patients, it was not easy from the beginning, but she finally agreed and underwent the treatment. She was also grateful to me at the end.

Appendix I: Interview with N1

Interview with Nurse Reginald on the 29th June 2017. Reginald is an Oncology Nurse at the Oncology Department of the Korle-Bu Teaching Hospital. He lives in Accra Ghana and have practiced for Six years

Q.1. Complaints from Patients

Kofi
In your weekly reviews, do you get complains from patients about their level of depression and anxiety?

Reginald
For depression and anxiety, we've got a lot of complain from most if not all the patients undergoing chemo radiation. I think the first complain I will mention is the diagnosis of breast cancer in itself. That is a Killer if I should put it that way. This alone, will for the rest of the patient life lead to levels of anxiety and depression.
The second thing I will talk about is their financial commitment to the treatment. The chemotherapy drugs are very expensive and patients sometimes or most times go through that for six cycles, with a cycle not less than GH 1500 or USD 400. This is minus the laboratory investigation before and after each cycle. This is just for the chemo, so if you add radiation therapy and surgery, it's way too expensive for an average Ghanaian. Most of the breast cancer patients are low or middle income earners and are predominantly petty traders, hence this will be too hard for them to bear resulting in psychological depression and anxiety. Others also complain that cancer is a death sentence and that news they hear of friends and other people is an indication to this. This in effect increases their anxiety and depression as they are constantly afraid. Some of the patients when they undergo adjuvant chemotherapy where chemo is done before surgery, their worry always is whether their breast will be cut or not.

Q.2. Interventions prescribed

Kofi
What forms of interventions do you discuss with these patients?

Reginald
Our chemo suits has stages, and the first stage is the counselling for the patients and with this we dive through and discuss every possible side effect and their related interventions as and when they show up. Chemotherapy drugs are very strong and poses several side effect, one of which is the loss of hair. This is mind blowing and therefore I take my time to explain to patients and provide possible avenues through this. I personally also try to debunk any negative information they have heard from people concerning the treatment, like "you will die', 'they will cut your breast', 'your hair will be gone' and the likes. Rather, I explain the 'why' to every patients and the advantages they get if they consent to undergo.
We also try to inform them of cancer survival groups who have gone through similar treatment and are now doing well in life. We also try and introduce the first timers to the chemo suits to allay every anxiety and then inform them of the level of competence of the supporting staff group. Aside that we also give assistance in the form of introductory letters on request from patients to their work places for financial support and the feedback has been positive. Aside these we also provide letters on request for patients to churches and other societal organizations for help. Once a while, we do get philanthropist coming through to settle some bills for patients.
All these in one way or the other help patients cope with their anxiety and depression.

Q.3. Feedback from patients

Kofi
Do you get any feedback as responses from these patients?

Reginald

Oh, we have a positive feedback, for example those with financial burden by their next visit will be smiling and cheerful especially when they get support from people. Also, by their next chemo visit, if even they may have complaints, they will look more friendly, and open-up, because of the various interventions discussed.

Q.4. Management

Kofi

In your opinion, what can be done to improve the management of the depression and anxiety of breast cancer patients?

Reginald

I think I can only speak from my unit. One thing that I can think of is that you know in most companies or hospitals, they have Psychologists and Cognitive behavioral therapist who help in the counselling. So what I can say is that if the department can arrange with the hospital in getting at least one of these to be stationed in the Centre, it will do a lot of good to our patients.

Again, the oncology nurse could be sponsored to take extended programs or courses pertaining to psycho-oncology, so that they can help patients with their level of anxiety and depression. We could also have a training session with a trained specialist or a researcher who has done a research into these areas for the staff to help them manage patients well.

Q.5. Share your experience

Kofi

Can you share your experience with me, how you have used your method of interventions described to manage the anxiety and depression of patients undergoing treatment.

Reginald

This is a very good question, what I normally do is that when they come to the chemo suit for the first time, I interact with them, because I see that as relieve to patients and then they can open up. I personally talk to them about their spirituality because of what I believe. Off course we have variety of patients, some are Christians, Muslims, and other traditionalist, but I try to let them know that cancer diagnosis is not a death sentence and that is actually not the end of the world.

What I have seen is that when I start on that level, patients are able to open up to me, talk to me more, they feel more relaxed, and that reduces their anxiety and depression level.

They are so happy, I give them my contacts and chart with them as and when they call me

Appendix J: Interview with N2

Interview with Nurse Enam on the 30th June 2017. Enam is an Oncology Nurse at the Oncology Department of the Korle-Bu Teaching Hospital. She lives in Accra Ghana and has practiced for Seven years

Q.1. Complaints from Patients

Kofi
In your clinical reviews, do you get complains from patients about their level of depression and anxiety?

Enam
Yes, just severally, just recently I have had a patients ask a lot of questions about the chemotherapy, apparently she has gone to read about the condition and the management as well as the side effects and was worried about a whole lot of things that she feels may happen to him. She expressed concern, anxious and doesn't know how long she will live. The effects of the drugs. I have also come across patients who are so depressed of the effects of the chemotherapy on them. According to them, they have lost their hair, their finger nails are burnt, and they have several issues with the drug.

Q.2. Interventions prescribed

Kofi
What forms of advice and interventions do you prescribe for these patients?

Enam
This was a patient who felt she was not informed about the condition properly by all the doctors that she had met and as a result presented to the oncology late. Her stage was advanced and that means her survival was small. Upon coming to the Oncology department, she has to go through the treatment but the trauma of the whole issue is what is killing plus the fact that she has been told she has few months to live.
As a Nurse, have tried to talk to this patient lengthy and have spoken the doctors and my superiors about it. She is so anxious, though she has not asked anything about death, you can look at her and see so much distress.

Q.3. Feedback from patients

Kofi
Do you get any positive feedback as responses from patients during their next visit of follow-ups?

Enam
The chemotherapy unit of the department is a small and most times there is very little time you have with patients because of the number, space and time. However, the little time we get we do discuss the feedback of patients and usually, they complain of several side effects that makes them weaker and more apprehensive.

Q.4. Management

Kofi
In your opinion, what can be done to improve the management of the depression and anxiety of breast cancer patients?

Enam

There could be a section prior to chemotherapy for counseling where concerns of patients could be addressed. There could also be a talk for breast cancer patients at the outpatients department, may be if it is even 5minutes prior to their session for the chemotherapy, it can really help. This when done routinely, can allay anxiety because the information they read elsewhere, from friends, relatives, family, could affect them and make them more depressed and anxious. However, if they hear these from us, they know that well, it is from the right source.

Another thing that could be done, is to get a handout that contains informations on coping with treatment and other related issues with breast cancer and share them for these patients.

I also see pastors in the morning praying with some of the patients and I believe that also help with those who believe in these.

Q.5. Share your experience

Kofi
Can you share your experience with me, how you have used your method of interventions described to manage the anxiety and depression of patients undergoing treatment.

Enam
My experiences with some of the patients have been through counselling, predominantly because I am mostly in the chemo suit and usually hear patients and see their mood. As and when I get them I talk to them on coping principles and taking care of themselves after treatment.