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DEPARTMENT OF PSYCHOLOGY

FEAR OF CANCER ILLNESS AND ITS INFLUENCE ON SELF-DISCLOSURE AMONG ADULT PATIENTS AT KENYATTA NATIONAL HOSPITAL CANCER TREATMENT CENTER IN NAIROBI CITY COUNTY, KENYA.

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF HUMANITIES AND SOCIAL SCIENCES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS (COUNSELLING PSYCHOLOGY) OF KENYATTA UNIVERSITY

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DECLARATION

This project is my original work and has not been presented for a degree in any other University or for any other award.

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ABSTRACT

Despite the rapid increase in the number of cancer patients in Kenya, the immense physical and psychological challenges that this diagnosis brings both during and after treatment remain largely unaddressed. Literature shows that cancer illness is greatly feared. The fear may influence self-disclosure by patients regarding the effects of cancer illness to people they interact with in their day-to-day living. Self-disclosure involves expressing personal experiences on emotions, thoughts, and wishes as a result of cancer diagnosis, verbally to significant others. Although such self-disclosure has been shown to reap psychological benefits, the action can be hampered by stigma and fear around cancer. Self-disclosure is also required in order to enlist and secure support during and after treatment of cancer. The main objective of this study was to determine the influence of fear of cancer illness on self-disclosure among adult patients at Kenyatta National Hospital Cancer Treatment Center (KNH-CTC) in Nairobi City County, Kenya. The study whose target population was 3500 adult cancer patients who annually got treatment and review at KNH-CTC, was informed by the Social Cognitive Processing Model of Emotional Adjustment to Cancer and employed a descriptive survey research design. A sample size (n=347) was determined using the Cochran formula. Non-probability sampling, using purposive sampling method was used to select the study participants. Questionnaire and Focus Group Discussion were used to collect data. Both validity and reliability of the research instrument were established before conducting the study. In addition, all research ethical and authorization protocols were observed. Descriptive and inferential statistics were used for quantitative analysis of data while thematic analysis was used to analyze qualitative data. The findings revealed that: generally participants had moderate to high levels of fear (n=199; M=57.4; SD=12.072); there was a statistically significant association between levels of fear and levels of self-disclosure, ($\chi^2(4) = 11.722$, $p = .020$) and that the highest levels of fear were experienced upon diagnosis but reduced in the course of treatment and over time. Participants acknowledged the benefits of self-disclosure but were discouraged by fear of negative responses from the general population. Participants self-disclosed to family at the highest level (81.9%) and to health personnel at the lowest level (25.4%) for low to moderate levels of self-disclosure. It was therefore concluded that patients' perception of cancer as a fearful illness affected their levels of self-disclosure especially to health personnel. More self-disclosure was done to family members who have limited capability of attending to all the needs of the patient. This may mean that some needs remain unattended to, impacting negatively on quality of life and effectiveness of treatment towards recovery. The study recommended the need to involve mental health professionals in the cancer management team. It also recommended further studies to be carried out among patients and general population on awareness of cancer management so as to provide scientific evidence to address the stigma and fear of cancer.

DEDICATION

I dedicate this work to all people who have had a personal experience with cancer illness, either as patients or while taking care of your loved ones. For those who succumbed to the illness, some of you very dear to me, I make a special dedication. Your cherished memories have been my driving force to successfully complete this study. It is you who prompted me to seek guidance and put my thoughts into scientific words. The information from those of you who participated in the study is truly the backbone of this work. Indeed, you are my heroes.

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ABBREVIATIONS AND ACRONYMS

FGD:	Focus Group Discussion
GLOBOCAN:	Global Cancer Incidence, Mortality and Prevalence
HIV/AIDS:	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
KNH- CTC:	Kenyatta National Hospital-Cancer Treatment Center
KNH-UoN ERC:	Kenyatta National Hospital- University of Nairobi Ethics and Research Committee
NACOSTI:	National Commission for Science, Technology and Innovation
NCCS:	National Cancer Control Strategy
NCI:	National Cancer Institute
NIEHS:	National Institute for Environmental Health Sciences
PFL:	Patient Fear Levels
PSDL:	Patient Self-disclosure Levels
RIES:	Revised Impact of Events Scale
TB:	Tuberculosis
UK:	United Kingdom
U.S.A:	United States of America

OPERATIONAL DEFINITION OF TERMS

Cancer:	Medical conditions that are diagnosed through laboratory tests as abnormal multiplication of cells capable of infiltrating different parts of the body.
Cancer patient:	A person who has been medically diagnosed with cancer and is either awaiting, undergoing, or has completed cancer treatment.
Fear:	An emotional state in which one expects with alarm, apprehension or worry.
Forms of fear:	Refer to fear of death, lack of access to psychosocial support, loss of ability to carry out social roles, isolation, pain, and cancer recurrence.
Oncologist:	Medical doctor who is a cancer specialist.
Oncology:	The medical study of cancer.
Prognosis:	The prediction about how the illness may progress.
Psycho-oncologist:	Psychologist who is a cancer specialist.
Psycho-oncology:	The psychological study of cancer
Self-disclosure:	How a cancer patient verbalizes their emotions, thoughts, and wishes to the health personnel, immediate family and friends.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The word cancer comes from the Latin word ‘carcinoma’ which means crab. Cancer is not a single illness, but a collection of many diseases that have common features (Bower & Waxman, 2015). It is a dreaded disease and refers to all malignant tumors caused by the abnormal growth of a body cell or a group of cells (Bakhru, 2012). Globally, the most commonly occurring types of cancer are breast, lung, colorectal and prostate respectively (Bower & Waxman, 2015). According to Global Cancer Incidence, Mortality and Prevalence (GLOBOCAN), (2018), the order of prevalence by cancer type is; lung, breast, colorectal and prostate.

Over the last decade, global cancer prevalence has been on the rise. According to GLOBOCAN (2018), 18.1 million new cancer cases and 9.6 million cancer–related deaths occurred in the year 2018, compared to 14.1 million and 8.2 million, respectively in 2012. The prevalence estimates for 2018 also show that 43.8 million people were living with a cancer diagnosis that was made in the previous five years. Statistics along the sex line showed that over their lifespan, one out of every five men and six women will develop cancer, while out of eight men and eleven women, one will die due to the illness (GLOBOCAN, 2018). The statistics are worse for the less developed world which accounts for over 54.2% of all cancer incidences and over 64.6% of all cancer deaths (GLOBOCAN, 2018; GLOBOCAN, 2013). Kenya is part of the less developed world and therefore has a greater need to urgently address the escalating cancer prevalence.

In Kenya, cancer is ranked third among the leading causes of death. It comprises 7% of total annual national mortality. There is no population-based data; therefore these statistics are based on estimates (National Cancer Control Strategy [NCCS], 2011-2016). The NCCS was developed with an aim to reduce the incidence of cancer and improve the quality of life for patients and survivors in Kenya.

Oncology is the medical study of cancer while psycho-oncology is the psychological aspect of the illness. Both aspects are important in management of patients. Research in both areas is vital (Gotze, Geue, Buttstadt, Singer, & Schwarz, 2009). An international study on definition, healthcare structures, and therapeutic approaches by Wattson and Dunn (2016), showed that psycho-oncology is a relatively new discipline which is understood to be an integral part of oncology care. Despite the acknowledgement of its importance in cancer care, psycho-oncology has only been fully integrated in a few countries (Wattson & Dunn, 2016). Moreover cancer's psychological aspect, although well covered in the developed countries, does not match the medical research on the topic (Mehnert, et al., 2012). Psycho-oncological research dwells on psychological aspects of the disease which include fear, anxiety, depression, denial and anger. All these aspects influence behavior such as self-disclosure of cancer illness.

Cancer research in developed regions is extensive and is mainly medical (Parson, Daley, Begh, & Aveyard, 2010; Jayne et al., 2010). In less developed regions, cancer research is less extensive but is still focused more on medical rather than psychological aspects (Sloan & Gelband, 2007; Kerslake, 2013). Stepping up research in psychological aspects of cancer for both developed and developing regions is of necessity if the world's cancer burden is to be effectively addressed.

An adult cancer diagnosis ranks high among other life experiences as a source of fear. The fear of cancer illness is caused by the existential threats that require multiple decisions regarding treatment and other up-coming challenges following the diagnosis (Hoffman, Lent, & Raque-

Bogdan, 2013). Fear can cause a person to experience alarm, apprehension, worry or a combination of these emotions. The fear of cancer illness and its prognosis is experienced by many patients (Bakhru, 2012; Kerslake, 2013). Fear is likely to impact negatively on the management of cancer, especially if the patient withholds information required to aid in their service delivery. The dread or fear of cancer is widely shown by reaction to the news of the disease once revealed by the doctor, whether regarding one-self or another person. This fear is likely to impact on behavior of the patient, including their verbal communication with those they interact with following the diagnosis.

Intense fear towards cancer illness may influence people’s self-disclosure when diagnosed with the disease, and may in turn affect how patients deal with both the physical and psychological aspects of cancer illness. According to Kerslake (2013) and Major (2002), more self-disclosure creates more cancer awareness, decreases fear towards cancer and encourages seeking of knowledge regarding the illness. If people think more clearly and calmly about fear of cancer, it would be more likely to articulate the origins of the fear and eventually free the individual and society to seek screening, treatment and self-disclose regarding the illness (Stanton, Ganz, Meyerowitz, Krupnick, & Sears, 2005). Reduction of fear of cancer is likely to increase self-disclosure and empower the patient to seek relevant knowledge which helps to dispel misconceptions regarding the illness.

Self-disclosure is the verbalization of emotions, thoughts, and wishes by a cancer patient to the people they interact with in their day-to-day lives (Barak & Gluck-Ofri, 2007). In terms of levels, it can range from very low where it is limited to health personnel only, to high where open discussion or as close to full self-disclosure as possible is done voluntarily. For one to get maximum benefit from cancer management, self-disclosure is essential (Kerslake, 2013). Faced with a diagnosis of cancer, acknowledging the fact that there are limits to personal control may be helpful for patients as it creates awareness of aspects of the illness that require seeking assistance (Hoffman et al., 2013). The importance of self-disclosure for the benefit of cancer management is highly regarded but there is need to create awareness among patients, as it has been found to be neither automatic nor easy to self-disclose.

Patient self-disclosure is recognized as important but insufficiently promoted by health professionals. A study done in Europe by Hartman & Ravesteijn (2008) showed that doctors require specific training in use of facilitative behaviors (for example, in detection and response to more indirect forms of communication such as patients' cues) to encourage patient disclosure of significant information. Before training, doctors were found to use discouraging behaviors 2-3 times more which resulted in low self-disclosure. This study shows that the creation of awareness to encourage self-disclosure is not only necessary among patients, but among health personnel too, and possibly the general population as well.

In view of the need to urgently address the rapidly rising cancer burden in Kenya versus the apparent apathy in psychological aspects of cancer (Morgan et al., 2017), the current study on influence of fear of cancer illness on patient self-disclosure is one of the numerous similar studies that are long overdue in Kenya and other developing countries. The current study was therefore aimed at informing various stake-holders on the need to address fear of cancer illness and possibly to increase self- disclosure, which may improve the quality of life for cancer patients (Morgan et al., 2017). In addition, the current research was aimed at prompting psychologists and others who qualify to carry out research in the area of psycho-oncology to recognize the dire need and get devoted to this course, with a high intensity.

1.2 Statement of the Problem

The rapid increase of cancer all over the world with figures of people newly diagnosed rising tremendously from 14.1 million in 2012 to 18.1 million in 2018 (GLOBOCAN, 2018) has serious physical, emotional and psychosocial aftermath. In Kenya, cancer is ranked third as a cause of death. It comprises 7% of total annual national mortality. According to the NCCS (2017- 2022), the cancer burden persists and there is need to involve various stakeholders in the development plan as well as its management implementation. Psychologists, psychotherapists and counselors are vital stakeholders in this course.

Increase in the prevalence of cancer incidences and the psychological distress attached to it mean that psycho-oncological support is very important. Studies have shown that self-disclosure by patients is vital in the provision of appropriate management of the disease (Hoffman et al., 2013). Self-disclosure however may be hindered by fear of cancer.

The current study sought to investigate the influence of fear of cancer illness on self-disclosure among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, with an aim to provide scientific evidence that may be utilized in psycho-oncological caregiving.

1.3 Purpose of the Study

The purpose of the study was to investigate the fear of cancer illness and its influence on self-disclosure among adult patients at KNH-CTC in Nairobi City County, Kenya.

1.4 Objectives of the Study

(i) To establish the levels of fear of cancer illness among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya.

(ii) To establish the levels of self-disclosure regarding the effects of cancer illness among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya.

(iii) To determine the influence of fear of cancer illness on self-disclosure among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya.

1.5 Research Questions

(i) What are the levels of fear of cancer illness among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya?

(ii) What are the levels of self-disclosure regarding the effects of cancer illness among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya?

(iii) To what extent does fear of cancer illness influence self-disclosure among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya?

1.6 Research Hypothesis

H_{01}: There is no significant difference in the levels of fear of cancer illness among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya.

H_{02}: There is no significant difference in the levels of self-disclosure of cancer illness among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya.

H_{03}: Fear of Cancer illness has no significant influence on self-disclosure among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya.

1.7 Justification and Significance of the Study

The importance of studying fear of cancer illness and its influence on self-disclosure among adult patients at KNH- CTC in Nairobi City County, Kenya was informed by the need to give necessary support to cancer patients whose numbers have increased significantly in the recent past. Self-disclosure helps in identification of the optimum support according to the unique needs of the individual. Fear of cancer illness by the patients can influence their self-disclosure. The findings of this study may provide useful information on the need to incorporate psychological health in cancer management. The information may be utilized for awareness creation amongst the stakeholders (such as health practitioners, patients and the general population) with the aim of addressing stigma attached to cancer. This may help patients in increasing their level of self-disclosure of cancer illness and hence may enable relevant support to be facilitated by family, friends, health personnel and other people that they interact with.

1.8 Scope and Limitations of the Study

The study took place at KNH-CTC where most people in the Country diagnosed with cancer are referred to for further treatment. The study sampled all adult male and female cancer patients accessing treatment and review at KNH- CTC. All patients below 18 years were excluded from the study. Only those patients who were considered physically and mentally able to participate in the study were sampled. Participation in the study was voluntary and therefore only willing patients were sampled. The study used self-rating instruments to collect data which were subject to participants' individual perceptions. The study was limited to forms of fear of cancer which included, death, lack of access to psychosocial support, loss of ability to carry out social roles, isolation, pain and recurrence of cancer. Fear of cancer illness and its influence on self-disclosure among patients were covered by the study. Counseling skills such as empathy were used when interacting with the patients. Participants were patients who had come specifically for medical services and the researcher affirmed their choice of priority, giving reassurance of no interference with their health care services during their participation in the research.

1.9 Assumptions of the Study

The study was based on the following assumptions;

(i) That fear of cancer illness had influence on self-disclosure among patients.

(ii) That the participants would be willing to volunteer the information that the research was seeking.

(iii) That fear of cancer illness and levels of self-disclosure would be accurately assessed using self-rating scales.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains a review of literature on the study: fear of cancer illness and its influence on self-disclosure among adult cancer patients in Nairobi City County, Kenya. The Chapter begins with a theoretical framework followed by review of related studies. It ends with a summary of the literature review and a conceptual framework.

2.2 Theoretical Framework

In this section, the Social Cognitive Processing (SCP) Model of Emotional Adjustment to Cancer is discussed to provide a theoretical basis for explaining the occurrence of high levels of fear of cancer and low levels of self–disclosure during and after treatment of the illness.

2.2.1 SCP Model of Emotional Adjustment to Cancer

The SCP model was developed by Lepore in 2001 who described how characteristics of the social environment contribute to an individual's perception of cancer. According to Lepore (2001) these characteristics may alter how cancer patients talk, think, and feel about their illness, self, and relationships. The SCP model expanded cognitive processing theory by adding a social element. The SCP model provides direction for understanding how different kinds of social contexts and experiences might affect the cancer treatment process.

The model has three key tenets. These are: an attempt to make meaning of the new experience; an attempt to gain control over the illness in particular and to regain control over life in general; an effort to restore self-esteem through positive self-evaluation.

An individual's perception of cancer may turn fearful if the social environment portrays cancer as dreadful. Lepore (2001) argued that a patient's possibility of benefiting from talking about their day-to-day emotions, thoughts and feelings are dependent on the social response of those they interact with. Supportive social responses from others may validate the patient's experiences and affirm others' concerns for them. Consequently, unsupportive social responses by others deny possible benefits to the patient. Supportive social responses help the patient to maintain or re-establish their pre-cancer emotional equilibrium.

Talking about their experience may increase opportunities for a patient to form non-threatening associations with the illness. Failure by the patient to talk about their experience may lead to an endless search for meaning due to inability to understand the illness and lack of control over negative emotions. Negative social responses lead to avoidance of talking about cancer or monitoring for its recurrence.

Brandao, Schulz, & Matos (2017), argued that succesful adjustment following a cancer diagnosis to a large extent depends on the ability to sustain and modify expectations that relate to treatment success and future set-backs such as recurrence of the illness.

Understanding this adjustment process is a key primary goal of psychologists and health care providers who conduct psychosocial interventions for cancer patients. By examining the predictors of adjustment in cancer patients, clues to design effective interventions can be obtained.

The study on fear of cancer illness and its influence on self-disclosure was thus an attempt in understanding the process for a patient to readjust to their pre-cancer emotional equilibrium through verbalizing their experiences to those they interact with. The SCP model was therefore suitable in this study of establishing fear of cancer illness as a predictor on self-disclosure for adjustment in cancer patients.

2.3 Review of Related Studies

In this section, a review of studies relating to cancer illness and its psychosocial effects, prevalence of fear and self-disclosure among patients are discussed.

2.3.1 Cancer Illness and its Psychosocial Effects

Cancer is a collection of many diseases that have common features (Bower & Waxman, 2015). According to Lepore & Revenson (2007), cancer is often life-threatening, disfiguring and unpredictable. It is a greatly feared disease and refers to all malignant tumors caused by the abnormal growth of a body cell or a group of cells (Bakhru, 2012). From the definition, cancer may be perceived as a complicated illness as it was originally associated with the crab, viewed as deadly and presenting as a collection of many diseases. This perception may cause fear or worry towards cancer which may influence how patients verbalize the effects of the illness and its treatment.

A cancer diagnosis can drastically affect numerous aspects of the patient’s life including physical, vocational, psychological, interpersonal and spiritual (Aziz, 2013; Kerslake, 2013). Patients may show “no evidence of disease” after treatment on medical tests but continue to live as though they have long-term concerns in terms of their health and well-being (Maher & Fenlon, 2010). These patients may have concerns that are more of a psychological in nature, for which health personnel may lack a solution. However, patients may benefit a lot from self-disclosing to the health personnel for relevant referral.

A study by Wolff (2007) which analyzed data from a large scale survey by Lance Armstrong Foundation was carried out on self-identified cancer patients (n=1020). The findings revealed that: 73% were two or more years post-treatment; 70% had experienced depression since their diagnosis with cancer; 60% had relational problems; while 83% had decreased income. More than 25% reported insufficient resources for meeting their emotional and practical needs such as work-related issues. Over 50% were of the opinion that meeting the emotional and practical needs of cancer was more difficult than medical needs. The research indicates that a cancer diagnosis has multiple effects on the patient's life, and further confirms that the nature of psychological effects require attention for the benefit of the patient. Probably, those who felt that medical effects were easier to meet were influenced by the fact that the health personnel supported them in meeting their medical needs, while they met or attempted to meet their psychological needs on their own.

A semi-structured individual interview study was carried out among 19 Omani women diagnosed with breast cancer at Sultan Qaboos University Hospital in Muscat to explore the psychosocial impact of the illness on their personal and social life (Al-Azri et al., 2014). Four main themes emerged from the study. The first theme was psychological distress and uncertainty related factors such as death worry, work and family role disruption and challenges experienced while seeking treatment. The second theme was family members' reactions such as shock, sadness, unity and traditional treatment suggestion. The third theme was societal views such as sympathy, isolation and reluctance to disclose information, while the fourth theme was worries and threats about the future such as chemotherapy effects, disease spread and effect on their children. The study concluded that there was need for Health Professionals working with Omani women diagnosed with breast cancer to be aware of the devastating psychosocial impacts revealed by the study. The study also recommended that decision makers put in place appropriate measures, including enforcing positive views and support of Oman's society towards women with breast cancer. A study on fear of cancer illness and its influence on self-disclosure may bring out the need for Policy makers in Kenya to reach decisions that may enforce positive views and support from society towards cancer patients.

According to literature, a cancer diagnosis is therefore accompanied by overwhelming psychosocial needs which if unattended are likely to compromise success of the medical procedures in treatment and quality of life of the patient. There is critical need therefore to have laid down procedures to address the psychosocial needs of patients diagnosed with cancer

2.3.2 Prevalence of fear of cancer illness among patients

Fear of cancer is a commonly occurring phenomenon (Vrinten, Vanjaarsveld, Waller, Wagner, & Wardle, 2014; cancer research UK, 2011). Many studies have been done to determine the prevalence of fear regarding cancer screening at global, regional and even local levels. Being diagnosed with cancer was found to be one source of fear of cancer screening by a research done on fear, anxiety and worry among breast cancer patients in U.S.A (Consedine, Magai, Krivoshekova, Ryzewicz, & Neugut, 2004). The current study therefore sought to investigate persistence of fear after a cancer diagnosis among adult patients.

In a meta-analysis of studies on fear of screening for breast, cervical and colorectal cancer, where 102 studies from 26 countries were thematically analyzed, it emerged that fear of cancer was as a result of its view as unpredictable and indestructible (Vrinten et al., 2016). Cancer was also viewed as an enemy in close proximity that cannot be kept at bay, engraved with social implications of succumbing and as a cause of death. In conclusion the study questioned the media’s ‘war on cancer’ theme and suggested that it may affect the acceptance of screening among the general population for early detection. The cancer patients’ population is drawn from the general population, which further affirms the likelihood of one becoming a cancer patient without having dealt with their fear. The current study was influenced by the possibility that through investigating the fear of patients, the general population as well as the patients may learn from the outcome.

In addition, the fear of cancer goes beyond treatment. Mellon, Kershaw, Northouse, & Freeman-Gibb (2007) carried out a study using the family-based model to predict fear of recurrence for cancer patients and their caregivers in the United States. The sample comprised 373 cancer patients that were identified from the registry who met the eligibility criteria. The study found that each person’s own perceptions rather than their partner’s perceptions exerted more influence on the individual’s levels of fear of recurrence. The study also associated a high number of stressors to high levels of fear of recurrence. Another finding in the study was that patients and family caregivers who reported more positive meaning associated with cancer had significantly less fear of recurrence. The study did not link fear of recurrence among patients with their psychosocial support-seeking behavior. This influenced the current study on the investigation of fear of cancer and its influence on self-disclosure.

A two-year retrospective research done in Nigeria comprising 65 participants showed that despite adequate counseling, only 26.67% accepted the invasive procedure of undergoing a prostate biopsy which is necessary for diagnosing cancer of the prostate. Consequently, the management of prostate cancer was limited by this behavior (Akhator & Essiet, 2010). According to systematic review by Buckley, Hay, & Ostroff (2004), high levels of cancer worry may impede the screening behavior of high-risk persons. It is likely that the fear of cancer continues to influence the patients in many ways, including how much they self-disclose regarding the effects of the illness on their lives which the current study sought to investigate.

An exploratory research to find out reasons for delayed cancer diagnosis was done in South Africa among 15 women with advanced cervical cancer. The research found that lack of knowledge and awareness among health care professionals resulted in low suspicion of cancer leading to misdiagnosis (Van-Schalkwyk, Maree, & Dreyer, 2008). Lack of cancer-related knowledge and awareness among health care professionals is likely to imply a worse off situation of awareness and knowledge among patients. These findings informed the current study on the need for research on patients' fear of cancer illness and its influence on self-disclosure, which may help in creating a level of awareness among participants and others encouraging more self-disclosure and less fear.

A study was done by Shay, Carpentier, & Vernon (2016) to assess prevalence of fear of recurrence among cancer survivors who were diagnosed as young adults aged 15-39 compared to those diagnosed at 40 years and above, and to identify factors associated with each group's fear of recurrence among survivors responding to the 2010 LIVESTRONG survey. The findings showed that fear of recurrence was significantly higher among those diagnosed as adolescents and young adult (85.2%) than older (79.7%) age-group survivors. This study established high levels of fear of recurrence among both groups and further recommended need for tailor-made interventions that put age at diagnosis into consideration.

2.3.3 Prevalence of self-disclosure among cancer patients

Self-disclosure of cancer illness among patients is neither automatic nor easy. When an individual is diagnosed with cancer, higher levels of self-disclosure may aid a better prognosis

(Kerslake, 2013). For the majority of people with cancer to come to terms psychologically with the illness and somehow accept its reality, self-disclosure helps in coping with the disease (Lepore, 2001). The dilemma of whether to disclose a diagnosis of cancer is a subject of worldwide interest. Physicians and family-members fear that the patient will be shocked upon learning their diagnosis and lose hope (Akabayashi, Fetters, & Elwyn, 1999). It is possible that the dilemma of whether to disclose is not confined to the physician and relatives but extends to the patient once they know their diagnosis.

The difficulty of self-disclosure among cancer patients is reiterated in a study by (Yoo G. , Aviv, Levin, Ewing, & Au, 2010) conducted in the USA among 176 participants consisting of an ethnically diverse population of women diagnosed with cancer, with a focus on the emotion work involved in self-disclosing a breast cancer diagnosis. The study found that participants self-disclosed when faced with a need to make important decisions about their treatment. The disclosure process involved emotion work that included: managing other people’s worry; protecting and soothing other people; educating and instructing other people. For many participants, self-disclosure without calculating emotional management led to opening up to others which meant support and a booster in emotional resources. The study recommended that women with breast cancer need to be involved in honest self-disclosure and less emotional management of other people’s feelings. A need for education on the nature of cancer experience among the general population according to their need was also recommended by the study. The need may be even more critical among Kenyan cancer patients and general population. The findings of the study influenced the current research to investigate on levels of self-disclosure among adult cancer patients at KNH-CTC.

According to Yoo et al. (2010), patients fear burdening their family and friends with their illness. McPherson, Wilson, & Murray, 2007), carried out an interpretative phenomenological study with an aim to get a better understanding of self-perceived burden from patients' perspective amongst 15 patients receiving palliative care for advanced cancer. Using qualitative analysis, participants' experiences of self-perceived burden emerged in three categories. These were; "Concern for others" (physical, social and emotional hardships participants believed they were creating for others) and concerns about the future (including likely effect of own death) on those around them; "Implications for Self" reflected feelings of responsibility for causing hardships to others resulting in psychological distress and a diminished sense of self; and "Minimizing burden" which described coping strategies used by participants to alleviate the burden on others and to reduce the negative impact on themselves. These findings imply that it is plausible that to minimize the self-perceived burden, patients may avoid self-disclosure. The study therefore informed the need for the current research to investigate on the levels at which patients at KNH-CTC self-disclose to various groups of people that they interact with in their day-to-day life.

The intense fear attitude towards cancer illness may influence people's self-disclosure when diagnosed with the disease and may in turn affect how patients deal with both the physical and psychological aspects of cancer illness. According to Kerslake (2013), more self-disclosure creates more cancer awareness, decreases the fear towards cancer and encourages seeking of knowledge regarding cancer illness.

Studies on disclosure of cancer diagnosis by the physician or family to the patient are more widely done as compared to studies on self-disclosure by patients. The studies have found that an overwhelming majority (over 80%) of participants prefer full disclosure of their cancer diagnosis (Miyata, Takahishi, Saito, Tachimori, & Kai, 2005). A study done in Turkey on persons accompanying patients on chemotherapy found that 48.2 % were of the opinion that the patient should be informed correctly of the cancer diagnosis (Öksüzoğlu, Abali, Bakar, Yildirim, & Zengin, 2006). It may be important for a patient to be informed of their cancer diagnosis, but if their self-disclosure is low, they can be overwhelmed by the emotional effects. The current study sought to investigate on patients other than caregivers.

In a study to determine whether self-disclosure in couples coping with cancer associated with improvement in depressive symptoms in Netherlands, 64 newly diagnosed patients and their partners participated in a longitudinal study. The findings were that patients who reported more depressive symptoms at the baseline showed more self-disclosure. The study also found that mutual self-disclosure was not associated with lower levels of depressive symptoms in patients as compared with one-sided self-disclosure or low self-disclosure in both patients and partners. Depressive symptoms over time showed least decrease in couples that had a partner who disclosed a lot, whereas the patient disclosed little (Baas et al., 2011). This study confirms that patient high level self-disclosure is important in reduction of depressive symptoms. The study does not deal with self-disclosure at interactions beyond patients' partners', neither does it deal with other symptoms beyond the depressive ones. The current study therefore dealt with self-disclosure beyond patients' partners.

Levels of self-disclosure were influenced by demographics such as sex and age. Owen, Klapow, Roth, & Tucker (2004), found that breast cancer patients were more likely to make more emotional disclosure and cognitive processing than prostate cancer patients. This was done in a study on use of internet for information regarding self-disclosure among persons with breast and prostate cancer carried out in the U.S.A. The study examined the feasibility of evaluating online communication of cancer patients using an automated content analysis program modified for application to cancer-related communication. Similarly, an on-line survey study on counseling preferences of young adults with cancer in United States by Taylor & Kashubeck-West (2017) found that young adults with cancer indicated individual counseling as their first choice, followed by group counseling, while family counseling was the least preferred counseling modality. The young adult participants therefore may have had low self-disclosure on other interactions other than on individual counseling. The current study therefore sought to establish whether age influenced the level of self-disclosure amongst adult male and female patients.

A cross-sectional study by Derlega et al. (2014) to examine self-disclosure by sickle cell disease (a hereditary blood disease marked with painful episodes) patients and the association between talking to others about sickle cell pain episodes and patients' psychological adjustment and coping strategies in managing the disease was carried out among 73 African American patients with Sickle Cell Disease (30 men and 43 women). Participants were asked to whom, how fully, and how helpful it was to talk to significant others about Sickle Cell Disease pain episodes experienced in the last 12 months. Participants also completed measures of their psychological adjustment as well as how they would manage future sickle cell pain episodes. Self-report ratings were made on Likert-type scales.

Based on paired samples *t*-tests, participants talked significantly more fully about their thoughts and feelings concerning pain episodes to God and to their primary medical providers than to either their parents, siblings, or an intimate partner/close friend. Bivariate correlations indicated that amount and helpfulness of talking about pain episodes to God and to parents were significantly associated with better psychological adjustment on selected measures. Also, bivariate correlations indicated that helpfulness in talking with siblings, intimate partner/close friend, and primary medical providers was positively related with willingness to go to a physician in the event of a future pain episode. According to the researchers, the results document to whom and how helpful it is to talk with others about Sickle Cell Disease pain episodes and how Sickle Cell Disease pain disclosure is related to strategies for managing this disease (Derlega et al., 2014).

Although Sickle Cell Disease is not a type of cancer, both have similarities in their chronic and pain nature. From the study's findings, self-disclosure has been shown to be beneficial in encouraging patients to seek medical assistance when need in form of a pain episode arises. Factors that may have influenced self-disclosure were not covered by the study. This study, pointed out the link between self-disclosure and psychological adjustment in chronic illnesses. The current study therefore sought to establish the influences of fear of cancer on self-disclosure.

2.4 Summary of Literature Review

Literature reveals that cancer is often life-threatening, disfiguring and unpredictable. This can drastically affect numerous aspects of the patient's life including physical, vocational, psychological, interpersonal and spiritual (Aziz, 2013; Kerslake, 2013; Lepore & Revenson, 2007). Review of literature indicated that many people fear cancer more compared to their fear of other illnesses. Fear of cancer persists before its diagnosis and impacts negatively on screening behavior among the general population including high risk individuals (Schalkwyk et al., 2008; Vrinten et al., 2014; cancer research UK, 2011). According to Kerslake (2013), after diagnosis, fear of cancer persists and impacts negatively on patients' level of self-disclosure and quality of life. In addition, literature shows that fear levels among cancer patients may depend on other factors such as age at which the diagnosis was made (Shay et al., 2016).

According to Yoo et al. (2010), patients fear burdening their family and friends with their illness. This makes self-disclosure among patients neither automatic nor easy despite the likelihood of higher levels of self-disclosure aiding a better prognosis (Kerslake, 2013).

Despite the above mentioned fact, research on how fear of cancer influences self-disclosure is scanty. According the Social Cognitive Processing model, individuals having difficulties accepting or cognitively processing their cancer may have a particularly acute need to self-disclose (Lepore, 2001). High levels of fear may lead to low levels of self-disclosure. Levels of fear of cancer and self-disclosure among patients therefore have a key role in the prevention, treatment and management of cancer. A study on the influence of fear of cancer on self-disclosure among cancer patients was needful in this light.

When an individual is diagnosed with cancer, higher levels of self-disclosure may aid a better prognosis (Kerslake, 2013). For the majority of people with cancer, to come to terms psychologically with the illness and somehow accept its reality, self-disclosure helps in coping with the disease (Lepore, 2001). Moreover literature shows that self-disclosure more often than not involves emotional management of others which may be psychologically draining for the patients (Yoo et al., 2010).

2.5 Conceptual Framework

A demonstration of how fear of cancer was conceptualized to influence self-disclosure is shown in Figure 2.1.

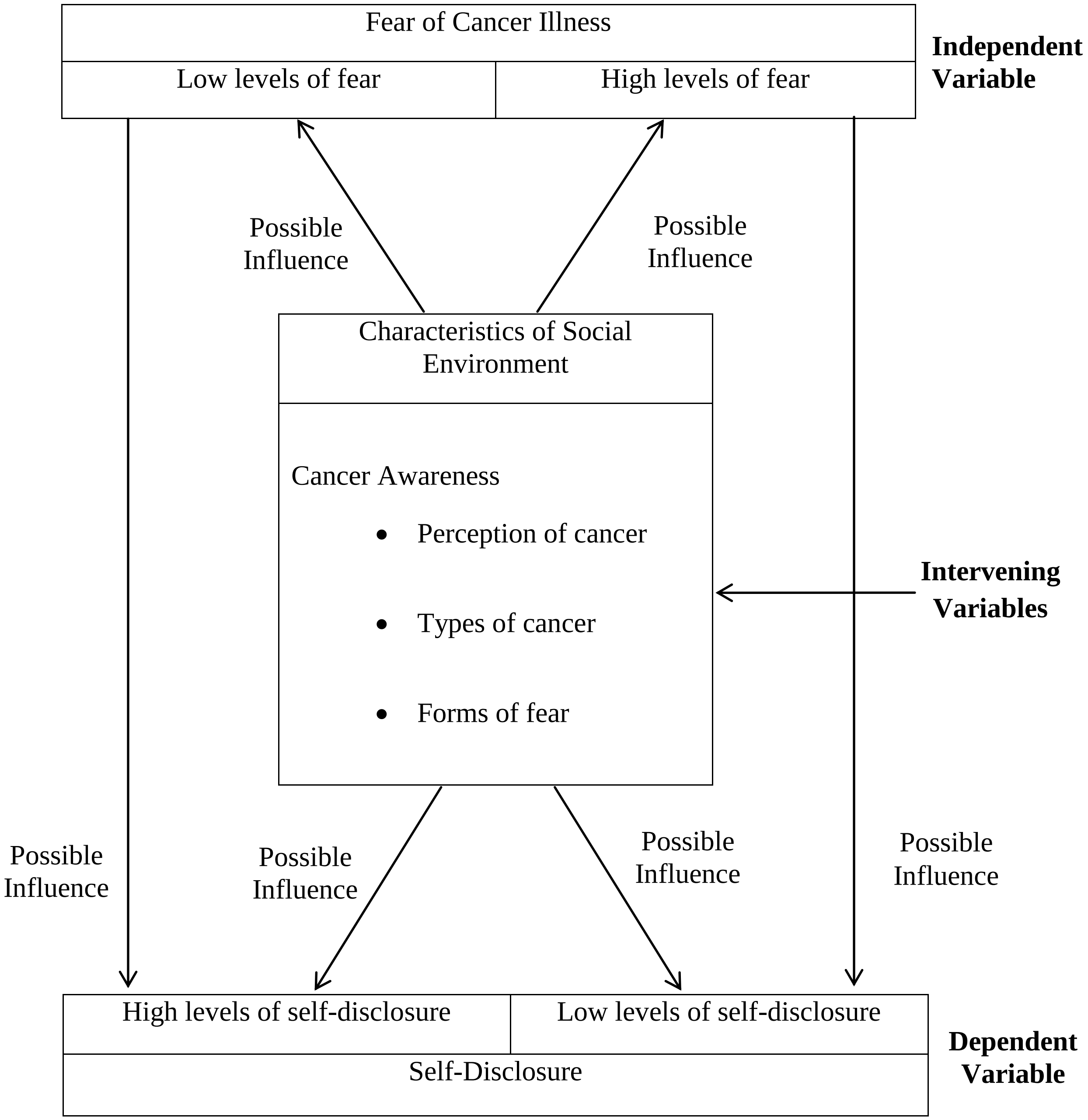

Figure 2.1 Influence of fear of cancer on self-disclosure among cancer patients

Source: Author, 2019.

As is indicated in the Figure 2.1, it was hypothesized that the Independent Variable which is fear of cancer illness has possible influence on the dependent variable which is self- disclosure. Low levels of fear were hypothesized to result in high levels of self-disclosure, and high levels of fear to result in low levels of self-disclosure. The moderating variables which are characteristics of the social environment regarding cancer awareness on, perception as either fearful or non-fearful, types of cancer and forms of fear (death, inadequate psychosocial support, inability to carry out social roles, isolation, pain, and cancer recurrence) have possible influence on both the Independent and Dependent Variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of the study was to establish the influence of fear of cancer illness on self-disclosure among adult patients in Nairobi City County, Kenya. This chapter details the research design, study variables, target population, sampling and data collection as well as analysis procedures.

3.2 Research Design

A descriptive survey research design was used. The descriptive survey research enables measurement of the occurrence without intervening and provides for collected information to be statistically inferred on the population of study. The descriptive survey research design also enables measurement of the significance of the results of the study on the overall population being studied (Hart, 2005). In the current study, use of the descriptive survey design enabled the researcher to measure Levels of Fear and Self-disclosure without intervening.

3.3 Study Variables

The Independent Variable in the study was fear of cancer illness among patients. The Dependent Variable was self-disclosure among patients. Fear of cancer illness was measured in terms of levels (ranging from low to high) of an emotional state in which one expects with alarm, apprehension or worry concerning cancer. Self-disclosure in this study was measured in terms of levels (ranging from low to high) of verbalization of emotions, thoughts, and wishes regarding effects of the illness on personal day to day life by cancer patients to health personnel, immediate family and friends.

3.4 Site of the Study

The study was carried out in Nairobi City County, Kenya. Nairobi City County receives the majority of cancer patients who seek treatment following diagnosis. Kenyatta National Hospital Cancer Treatment Center (KNH-CTC) is the only National referral hospital in Kenya that offers advanced comprehensive treatment for cancer illness in the country. Hence the researcher found it the most appropriate location to carry out the study. KNH is located along hospital Road, Upper Hill in Nairobi City County.

3.5 Population of the Study

KNH receives referrals from all parts of the country for advanced treatment of cancer (Munyi, 2014). The study population comprised of 3500 patients treated annually at KNH-CTC which is the largest number seen in any hospital in Kenya. After completion of cancer treatment patients attend follow-up clinic at the hospital. The participants of the study included adults who had been diagnosed with any type of cancer and having either completed or were undergoing treatment at the time of study.

3.6 Sampling Techniques and Sample size

Stratified purposive sampling was used to obtain the study sample that was representative in terms of type of cancer and sex. The sampling frame of booked patients for the day was used to stratify the patients into type of cancer and sex. Participants were purposively selected from the waiting bay based on the criteria of the defined strata, their health status, availability and willingness to participate in the research. Table 3.1 shows the sampling frame showing the strata that were considered to obtain the sample.

Table 3.1 Sampling Frame

Sex	Type of Cancer	Frequency	Percent
Male	Breast Cancer	3	0.5
	Prostate Cancer	197	31.6
	Others	423	67.9
	Total	**623**	**100.0**
Female	Breast Cancer	422	37.8
	Cervical Cancer	215	19.3
	Others	478	42.9
	Total	**1115**	**100.0**

The optimum sample size was calculated to ensure that the research question of the study was answered and to precisely detect important effects or associations. To determine the sample size, the Cochran formula was used. The formula states that: $n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$ (Singh, & Masuku, 2014) where n is the sample size and N is the population size. The study population size was 3500 cancer patients. The accessible population was 1738.

This formula was found suitable for the current study since it allowed the researcher to calculate an ideal sample size given a desired level of precision, confidence level and variability. The study assumed maximum variability for an unknown large proportion, p = 0.5 and with a 95% desired confidence level and ± 5% precision.

The study sample size was therefore $n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}} = \frac{385}{1 + \frac{(385 - 1)}{3500}} = \frac{385}{1.11} = 346.8$ hence a sample of 347 participants was taken.

3.7 Research Instruments

The researcher used Questionnaire and Focus Group Discussion methods to collect data from the participants.

3.7.1 The Questionnaire for participants

The researcher used self-developed Likert Scale type of questions for assessment of fear and self-disclosure levels. The questionnaire contained the socio-demographic information, fear levels and self-disclosure levels sections.

3.7.1.1 Patient Fear Levels Instrument

The researcher used a self-developed Fear scale that was concerned with worry among patients. The measurements were restricted across the domains of treatment, recurrence, and death. To measure the levels of fear, participants were presented with 17 items that assessed their fear levels towards cancer illness, on a five point Likert scale (1-Not at all, 2-Rarely, 3-Some of the time, 4-Much of the time, 5-Most of the time). Composite scores were then derived from the scale.

Since there were 17 items, the highest possible score was 85 (17x5) and the lowest possible score was 17 (17x1). An individual’s total score was derived from the addition of the total 17 items. The scores were then categorized into 3 levels, where scores ranging from 17 to 42 represented low levels of fear, scores between 43 and 59 represented moderate levels of fear, and scores ranging from 60 to 85 represented high levels of fear.

3.7.1.2 Patient Self-disclosure Levels Instrument

The self-disclosure instrument consisted of 65 items that assessed the participants’ levels of self-disclosure on cancer illness to the health personnel, family, close friends, workmates and social groups, on a four point Likert scale (1-Always, 2-Sometimes, 3-Rarely, 4-Never). The Self-disclosure scale was concerned with the patients' verbalization to health personnel, family, friends, and social groups across the various domains.

The Self-disclosure instrument was scored ranging from low to high levels according to the total score of all the items in the instrument for each participant. The scale was reverse-coded during data analysis. Positive responses would have higher scores to indicate high self-disclosure levels, and negative responses would have lower scores to indicate low self-disclosure levels. Composite scores were derived from the scale. Since there were 65 items, the highest possible score was 260 (65x4) and the lowest possible score was 65 (65x1). An individual's total score was derived from the addition of the total 65 items. The scores were then categorized into 3 levels, where scores ranging from 65 to 130 represented low levels of self-disclosure, scores between 131 and 195 represented moderate levels of self-disclosure and scores ranging 196 to 260 represented high levels of self-disclosure.

3.7.2 The Focus Group Discussion

One Focus Group Discussion was held. Participants were selected from the bottom quarter sampling frame of booked patients on the day of discussion, as they were likely to have ample waiting time before their turn to receive medical services. The patients in the bottom quarter were stratified according to types of cancer and sex, followed by purposive sampling (as is explained in section 3.6.1) to choose possible participants. The Focus Group Discussion consisted of a brief demographic questionnaire answered by thirteen (13) participants who gave both verbal and written consent to participate in the audio recorded discussion. The discussion was guided by the Focus Group Discussion guide composed of four items. This ensured that the discussion was focused on influence of fear of cancer on self-disclosure among adult cancer patients dwelling on their perception of cancer, levels of fear of cancer, forms of fear of cancer and fear by types of cancer.

The data generated from the discussion was quantitative in nature. For analysis, the recorded data was transcribed, processed and categorized into five themes which were: Fear of cancer illness; Fear by type of cancer; Fear of death; other fears and Self-disclosure.

3.8 Validity and Reliability of Research Instruments

Validity is the ability of an instrument to accurately measure the study variables (Mugenda & Mugenda, 2003). In developing the questionnaire, the researcher worked with the supervisors to ensure there was construct validity. This was achieved by ensuring that the elements in the questionnaire were relevant and representative of the constructs fear and self-disclosure. Effort was made to ensure there was face validity by constructing sufficient number of items for testing each construct, and a limit to the length of the instrument to avoid exhausting the participants.

A pre-test was also carried out and necessary corrections were done before conducting the study to enhance validity and reliability of the instrument.

Reliability is the ability of an instrument to repeatedly generate consistent data (Mugenda & Mugenda, 2003). Internal consistency technique using Cronbach's Coefficient Alpha was used for assessing reliability of the instrument. According to Mugenda & Mugenda (2003), a reliability coefficient of 0.8 or more indicates a high degree of reliability. A reliability coefficient of 0.922 was determined for the Fear Level Instrument and 0.897 for the Self-disclosure Level Instrument were determined in the pre-test.

3.9 Pre-test

To check the appropriateness of the instruments, a pre-test was conducted among a sample of twenty (20) cancer patients. After seeking permission to carry out the pre-test from the institution's management, participants were drawn from Cancer Care Kenya, which is a private institution that offers comprehensive cancer care to both those who can afford the services and those who cannot but are sponsored by well-wishers.

The researcher took note of whether the questions were measuring what they were intended to measure, whether the participants found the wording clear and any presence of research bias through detecting the response provoked from participants.

The data collected in pre-test sample was used to test the questionnaire to enhance validity and reliability of the instrument. Cronbach's Coefficient Alpha was computed to determine how items correlate among themselves. In case the correlation coefficient fell below 0.8, the questionnaire would be modified appropriately to increase its reliability to the acceptable threshold of 0.8. The correlation coefficient for the pilot data was acceptable at 0.922 and 0.897 for the Fear and Self-disclosure Level Instruments respectively. The pre-test data was not used in the actual study.

3.10 Data Collection Procedures

An approval letter from Kenyatta University Graduate School, and a permit from National Commission for Science, Technology and Innovation (NACOSTI) were obtained. Authorization was requested from Kenyatta National Hospital- University of Nairobi Ethics and Research Committee (KNH- UoN ERC). The researcher gave a self-introduction and a brief explanation on the study to the potential participant. Data was collected following written consent by the participants who filled in the questionnaires either on their own or by assistance of the researcher, according to each participant's need. All the questionnaires were collected upon completion by the researcher. Participants were allowed sufficient time to complete the questionnaire. In the Focus Group Discussion, data was collected using an audio recorder (Model ICD-UX 533 SONY CORP) after the participants had given both verbal and written informed consent according to the requirement by the hospital's administration.

3.11 Data Analysis and Presentation

The data collected from the study included quantitative and qualitative data. The questionnaire for participants generated quantitative data except for the open-ended questions. The Focus Group Discussion generated qualitative data.

Descriptive statistics were used to summarize quantitative data. According to Mugenda and Mugenda (2003), the purpose of descriptive statistics is to make it possible for the researcher to describe a set of scores in a meaningful way using statistics. The measures of central tendency, the mean and standard deviation were used to obtain the typical score from the data obtained in the study. Chi-square of association was used to assess the influence of fear of cancer illness on self-disclosure. T-test analyses were carried out to compare means of scores between different categories of respondents' responses. SPSS software was used to facilitate analysis of data.

Thematic analysis was utilized on qualitative data using some of the five stages of Framework Analysis (Kruger, 1994) which are distinct but highly interconnected. These stages are, Familiarization, Identifying a thematic framework, Indexing, Charting and lastly Mapping and interpretation (Ritchie & Spencer, 1994). Framework analysis was found suitable for this research as it allowed the researcher to ask specific questions with time limits to the participants.

In the analysis of the qualitative data, the following steps were carried out: transcription of the data from the tape-recorded form; familiarization which involved listening and re-listening to the recordings and charting the data based on the emerging themes.

Data was presented in tables which give a record of how often a score occurs (Kombo & Tromp, 2006). Each was followed by a brief text description of the findings. Graphic representation of the data was also utilized in data presentation such as histograms.

3.12 Data Management and Ethical Considerations

The potential participants were informed of the nature and purpose of the study by the researcher. After a potential participant verbally accepted to participate in the research and was ready to fill in the questionnaire, they were requested to read and understand the information sheet. The potential participant would then opt to withdraw or voluntarily sign the consent form with assistance according to their personal need. Confidentiality was ensured by omitting name of participants on the questionnaire and limiting access to the information for the study purposes only. Participants were informed of their freedom to withdraw from the research willfully and unconditionally.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Introduction

The purpose of this study was to establish the influence of fear of cancer illness on self-disclosure among adult patients at Kenyatta National Hospital Cancer Treatment Center in Nairobi City County, Kenya. This chapter first presents the demographic characteristics of the participants, followed by the analysis of findings in line with the research objectives.

4.2 Demographic Characteristics of Participants

The sample size comprised 347 respondents who participated by completing questionnaires. Data was collected on the following demographic characteristics: sex, age, marital status, highest level of education and employment status. The results are presented in the subsequent tables.

Table 4.1 Distribution of Participants by Sex

Sex	Frequency	Percent
Male	126	36.3
Female	221	63.7
Total	**347**	**100.0**

As shown in table 4.1, 63.7% of the participants were female, while 36.3% were male.

Table 4.2 presents the distribution of participants by age.

Table 4.2 Distribution of Participants by Age Category

Age category	Frequency	Percent
No response	2	0.6
18-35	39	11.2
36-60	207	59.7
61-89	99	28.5
Total	**347**	**100.0**

From table 4.2, more than half of the participants (59.7%) were aged between 36 and 60; 28.5% were of ages 61 to 89, while 11.2% were aged between 18 and 35 years.

Table 4.3 presents the distribution of participants by marital status.

Table 4.3 Distribution of Participants by Marital Status

Marital Status	Frequency	Percent
Single	32	9.2
Married	243	70.0
Divorced	8	2.3
Widowed	45	13.0
Separated	19	5.5
Total	**347**	**100.0**

As shown in table 4.3, 70% of the participants were married, 13% were widowed, while 9.2% were single.

Table 4.4 presents the distribution of participants by the highest level of education attained.

Table 4.4 Distribution of Participants by Level of Education

Level of Education	Frequency	Percent
No formal education	23	6.6
Primary	171	49.3
Secondary	121	34.9
College	27	7.8
University	5	1.4
Total	**347**	**100.0**

From table 4.4, 55.9% of the participants had only up to primary level of education; 34.9% and 9.2% had attained secondary and college or beyond levels of education respectively.

Figure 4.1 presents the distribution of participants by type of cancer.

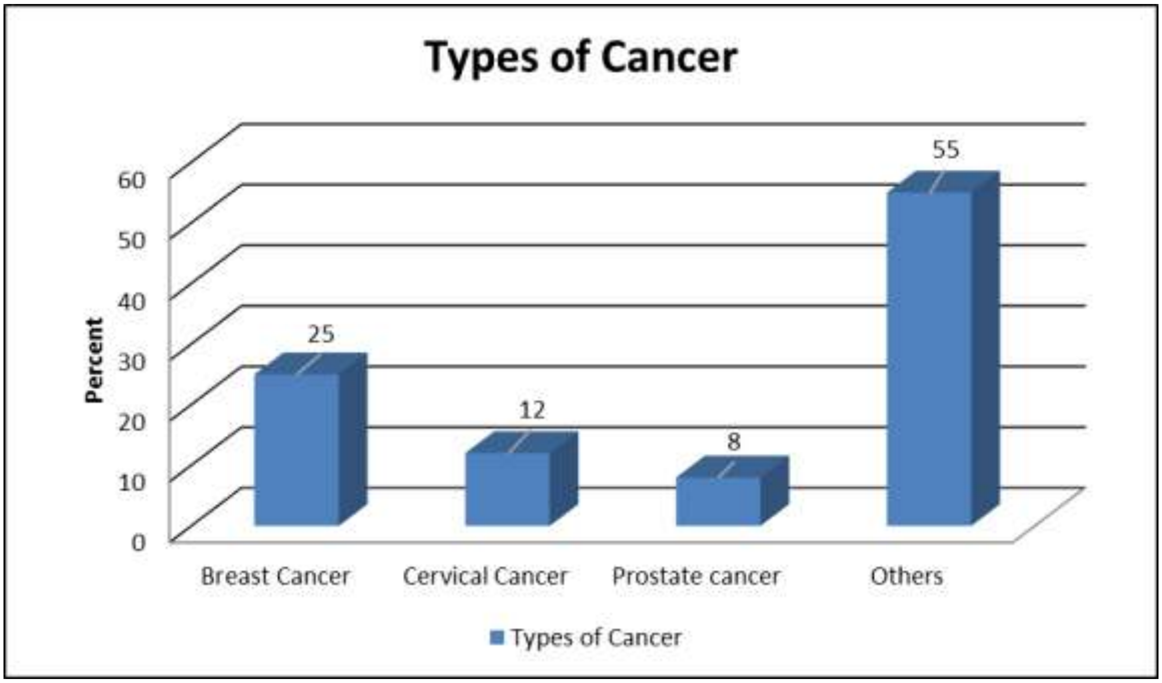

Figure 4.1 Distribution of Participants by type of Cancer

As shown in figure 4.1, 25% of the participants had breast cancer, 12% had cervical cancer and 8% had prostate cancer, while 55% of the participants had other (including: throat, uterine, lung, stomach, colorectal, bone in declining order of prevalence amongst others) types of cancer.

Table 4.5 presents the type of cancer illness by sex cross-tabulation

Table 4.5 Type of Cancer Illness by Sex Cross-tabulation

Sex	Type of Cancer	Frequency	Percent
Male	Breast Cancer	1	0.8
	Prostate Cancer	29	23.0
	Others	96	76.2
	Total	**126**	**100.0**
Female	Breast Cancer	84	38.0
	Cervical Cancer	43	19.5
	Others	94	42.5
	Total	**221**	**100.0**

As shown in table 4.5, 23% of male participants had prostate cancer, while 76.2% had other types of cancer. 38% of females had breast cancer, 19.5% had cervical cancer and 42.5% had other types of cancer.

Table 4.6 presents type of cancer illness by sex and age cross-tabulation

Table 4.6 Type of Cancer Illness by Sex and Age Cross-tabulation

Sex	**Age**		**Frequency**	**Percent**
Male	18-35 years	Breast Cancer	0	0.0
		Prostate Cancer	0	0.0
		Others	12	100.0
	36-60 years	Breast Cancer	1	1.6
		Prostate Cancer	7	11.1
		Others	55	87.3
		Total	**63**	**100.0**
	61-89 years	Breast	0	0.0
		Prostate Cancer	22	43.1
		Others	29	56.9
		Total	**51**	**100.0**
Female	18-35 years	Breast Cancer	12	44.4
		Cervical Cancer	4	14.8
		Others	11	40.7
		Total	**27**	**100.0**
	36-60 years	Breast Cancer	51	35.4
		Cervical Cancer	33	22.9
		Others	60	41.7
		Total	**144**	**100.0**
	61-89 years	Breast Cancer	21	43.8
		Cervical Cancer	4	8.3
		Others	23	47.9
		Total	**48**	**100.0**

As shown in table 4.6, 43.1% of male participants aged from 61 to 89 years had prostate cancer, while 44.8% and 43.8% of females of ages 18 to 35 years and 61 to 89 years respectively had breast cancer. For males the frequency of the most common (prostate) type of cancer rose with increase in age; 0 (18-35 years), 11.1 (36-60 years), 43.1 (61-89 years). The frequencies for female participants for breast cancer were highest (44.4) and was 35.4 (36-60 years), 43.8 (61-89 years). For cancer of the cervix, the frequency distribution was 14.8 (18-35 years), 22.9 (36-60 years), 8.3 (61-89 years).

Table 4.7 presents type of cancer illness by marital status cross-tabulation

Table 4.7 Type of Cancer Illness by Marital Status Cross-tabulation

Marital Status	**Type of Cancer**	**Frequency**	**Percent**
Single	Breast Cancer	10	31.3
	Cervical Cancer	2	6.3
	Prostate	0	0.0
	Others	20	62.5
	Total	**32**	**100.0**
Married	Breast Cancer	53	21.8
	Cervical Cancer	31	12.8
	Prostate Cancer	26	10.7
	Others	133	54.7
	Total	**243**	**100.0**
Divorced	Breast Cancer	3	37.5
	Cervical Cancer	1	12.5
	Prostate	0	0.0
	Others	4	50.0
	Total	**8**	**100.0**
Widowed	Breast Cancer	13	28.9
	Cervical Cancer	8	17.8
	Prostate Cancer	3	6.7
	Others	21	46.7
	Total	**45**	**100.0**
Separated	Breast Cancer	6	31.6
	Cervical Cancer	1	5.3
	Prostate	0	0.0
	Others	12	63.2
	Total	**19**	**100.0**

From table 4.7, 31.6% of the participants who were separated had breast cancer, 17.8% of those widowed had cervical cancer, while 10.7% of married men had prostate cancer. None of the divorced or separated participants had cancer of the prostate.

4.3 Quantitative Findings on the Study Objectives

The quantitative findings on the study objectives are presented in the sub-sections 4.3.1 to 4.3.5 that follow.

4.3.1 Levels of Fear of Cancer Illness among Adult Patients

Objective one sought to establish the levels of fear of cancer illness among adult patients at Kenyatta National Hospital Cancer Treatment Center. To measure the levels of fear, participants were presented with 17 items that assessed their fear of cancer illness in day to day life, on a five point Likert scale (1-Not at all, 2-Rarely, 3-Some of the time, 4-Much of the time, 5-Most of the time). Composite scores were then derived from the scale. Since there were 17 items, the highest possible score was 85 (17x5) and the lowest possible score was 17 (17x1). An individual's total score was derived from the addition of the total 17 items. The scores were then categorized into 3 levels, where scores ranging from 17 to 42 represented low levels of fear, scores between 43 and 59 represented moderate levels of fear and scores ranging 60 to 85 represented high levels of fear.

Table 4.8 presents the frequencies for levels of fear of cancer.

Table 4.8 Levels of Fear of Cancer Illness

Level of Fear	Frequency	Percent
Low	148	42.7
Moderate	154	44.4
High	45	13.0
Total	**347**	**100.0**

From the findings in table 4.8, 42.7% of the participants had low levels of fear, 44.4% had moderate levels of fear, while 13.0% had high levels of fear.

Data on levels of fear of cancer was further analyzed descriptively in terms of means and standard deviation. The findings are presented on Table 4.9

Table 4.9 Descriptive Statistics for Levels of Fear of Cancer Illness

	N	Minimum	Maximum	Mean	Std. Deviation
Fear of Cancer	347	17	78	45.27	12.072
Valid N (listwise)	347				

As shown in table 4.9, the lowest level of fear of cancer score attained by the participants was 17, while the highest score was 78. The mean score was 45.27 (SD=12.072), signifying that on average, the participants had moderate levels of fear of cancer.

Data was then further analyzed to establish the sex differences in levels of fear of cancer. The findings are as shown on Tables 4.10 and 4.11.

Table 4.10 Levels of Fear of Cancer Illness by Sex

Sex	Levels of Fear	Frequency	Percent
Male	Low	51	40.5
	Moderate	62	49.2
	High	13	10.3
	Total	**126**	**100.0**
Female	Low	97	43.9
	Moderate	92	41.6
	High	32	14.5
	Total	**221**	**100.0**

As shown on Table 4.10, majority of the male participants (59.5%) had moderate to high levels of fear, while 56.1% of female participants had moderate to high levels of fear.

Table 4.11 presents the descriptive statistics on the levels of fear of cancer by Sex.

Table 4.11 Descriptive Statistics for Levels of Fear of Cancer Illness by Sex

Sex		**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Male	Fear scores	126	17	76	45.09	11.176
	Valid N (listwise)	126				
Female	Fear scores	221	17	78	45.37	12.577
	Valid N (listwise)	221				

From Table 4.11, the lowest score attained by both male and female participants was 17, while the highest scores were 76 and 78 for males and females respectively. The mean score for male participants was 45.09 (SD=11.176), whereas the mean score for the female participants was 45.37 (SD=12.577) indicating that the participants had a moderate level of fear of cancer.

The researcher further sought to establish whether there was a statistically significant mean difference in the levels of fear of cancer by sex. The findings are presented on Tables 4.12 and 4.13.

Table 4.12 Descriptive Statistics on Sex and Levels of fear

	Sex	N	Mean	Std. Deviation	Std. Error Mean
Fear scores	Male	126	45.06	11.238	1.001
	Female	221	45.37	12.577	.846

There were 126 male and 221 female participants. Females had higher scores on fear of cancer (*M* = 45.37, *SD* = 12.577) than males (*M* = 45.06, *SD* = 11.238).

Table 4.13 Independent Samples T-Test Results

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Fear scores	Equal variances assumed	4.512	.034	-.224	345	.823	-.303	1.352	-2.962	2.356
	Equal variances not assumed			-.231	284.772	.817	-.303	1.311	-2.883	2.277

An independent-samples t-test was run to determine if there were differences in levels of fear between males and females. Homogeneity of variances was not assumed, as assessed by Levene's test for equality of variances (*p* = .034). Females had higher scores on fear of cancer (*M* = 45.37, *SD* = 12.577) than males (*M* =45.06, *SD* =11.238), a difference that was not statistically significant, *M* = 0.31, 95% CI [-2.88, 2.28], *t*(284.772) = -2.31, *p*>0.05. From the findings, the null hypothesis that there is no significant difference in the levels of fear of cancer illness across sex was thus accepted.

Data was further analyzed for sex and age differences in the levels of fear of cancer. Findings are presented on Table 4.14.

Table 4.14 Levels of Fear of Cancer by Sex and Age

Sex	Age	Levels of Fear	Frequency	Percent
Male	18-35	Low	9	37.5
		Moderate	13	54.2
		High	2	8.3
		Total	**24**	**100.0**
	36-60	Low	19	31.7
		Moderate	32	53.3
		High	9	15.0
		Total	**60**	**100.0**
	61-89	Low	23	54.8
		Moderate	17	40.5
		High	2	4.8
		Total	**42**	**100.0**
Female	18-35	Low	15	30.0
		Moderate	27	54.0
		High	8	16.0
		Total	**50**	**100.0**
	36-60	Low	60	46.5
		Moderate	49	38.0
		High	20	15.5
		Total	**129**	**100.0**
	61 - 89	Low	21	52.5
		Moderate	15	37.5
		High	4	10.0
		Total	**40**	**100.0**

As indicated on Table 4.14, for male participants, those aged 36-60 had the highest score (68.3%) for moderate to high levels of fear, followed by those aged 18-35 at 62.5% whereas those aged 61-89 had the lowest scores at 45.5%. Among the female participants, those aged 18-35 had the highest score (70.0%) for moderate to high levels of fear, followed by those aged 36-60 at 53.5% whereas those aged 61-89 had the lowest scores at 47.5%.

Table 4.15 presents the levels of fear of cancer by marital status.

Table 4.15 Levels of Fear of Cancer by Marital Status

Marital Status	Levels of Fear	Frequency	Percent
Single	Low	10	31.3
	Moderate	20	62.5
	High	2	6.3
	Total	**32**	**100.0**
Married	Low	101	41.6
	Moderate	108	44.4
	High	34	14.0
	Total	**243**	**100.0**
Divorced	Low	4	50.0
	Moderate	3	37.5
	High	1	12.5
	Total	**8**	**100.0**
Widowed	Low	26	57.8
	Moderate	16	35.6
	High	3	6.7
	Total	**45**	**100.0**
Separated	Low	7	36.8
	Moderate	7	36.8
	High	5	26.3
	Total	**19**	**100.0**

From table 4.15, 68.8% of participants who were single had moderate to high levels of fear, 57.8% of widowed participants had low levels of fear, 50 % of those divorced had low levels of fear while 58.4% of participants who were married had moderate to high levels of fear.

Table 4.16 presents the levels of fear of cancer by type of cancer.

Table 4.16 Levels of Fear of Cancer Illness by type of Cancer

Type of Cancer	Levels of Fear	Frequency	Percent
Breast Cancer	Low	35	41.2
	Moderate	36	42.4
	High	14	16.5
	Total	**85**	**100.0**
Cervical Cancer	Low	16	37.2
	Moderate	24	55.8
	High	3	7.0
	Total	**43**	**100.0**
Prostate Cancer	Low	9	31.0
	Moderate	14	48.3
	High	6	20.7
	Total	**29**	**100.0**
Others	Low	88	46.3
	Moderate	80	42.1
	High	22	11.6
	Total	**190**	**100.0**

As shown on Table 4.16, participants with cancer of the prostate, cervix, breast and other types scored 69.0%, 62.8%, 58.9% and 53.7% respectively for moderate to high levels of fear.

4.3.2 Levels of Self-Disclosure among Cancer Patients

Objective two sought to establish the levels of self-disclosure on the effects of cancer illness among adult patients at Kenyatta National Hospital Cancer Treatment Center. To measure the levels of self-disclosure, participants were presented with 65 items that assessed the frequency of self-disclosure of issues related to cancer illness to the health personnel, family, close friends and social groups, on a four point Likert scale (1-Always, 2-Sometimes, 3-Rarely, 4-Never). The scale was reverse-coded before data analysis, whereby positive responses on self-disclosure would have higher scores to indicate high self-disclosure, and negative responses would indicate low self-disclosure. Composite scores were then derived from the scale. Since there were 65 items, the highest possible score was 260 (65x4) and the lowest possible score was 65 (65x1). An individual's total score was derived from the addition of the total 65 items. The scores were then categorized into 3 levels, where scores ranging from 65 to 130 represented low levels of self-disclosure, scores between 131 and 195 represented moderate levels of self-disclosure and scores ranging from 196 to 260 represented high levels of self-disclosure.

Table 4.17 presents frequencies for levels of self-disclosure.

Table 4.17 Levels of Self-Disclosure on Cancer Illness

Levels of Self-disclosure	**Frequency**	**Percent**
Low	86	25.2
Moderate	172	50.4
High	83	24.3
Total	**341**	**100.0**

From the findings on Table 4.17, 74.7% of the participants had moderate to high levels of self-disclosure, while 25.2% had low levels.

Table 4.18 presents the descriptive statistics on the levels of self-disclosure on cancer illness.

Table 4.18 Descriptive Statistics for Levels of Self-Disclosure on Cancer Illness

	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Self-disclosure scores	341	65	260	162.84	45.181
Valid N (listwise)	341				

As shown on Table 4.18, the lowest self-disclosure score attained by the participants was 65, while the highest score was 260. The mean score was 162.84 (SD=45.181), signifying that on average, the participants had moderate levels of self-disclosure on cancer illness.

Data was further analyzed to establish the sex differences in levels of self-disclosure on cancer illness. The findings are as shown on Table 4.19 and 4.20.

Table 4.19 Levels of Self-Disclosure among Cancer Patients by Sex

Sex	Levels of self-disclosure	Frequency	Percent
Male	Low	29	23.2
	Moderate	57	45.6
	High	39	31.2
	Total	**125**	**100.0**
Female	Low	57	26.4
	Moderate	115	53.2
	High	44	20.4
	Total	**216**	**100.0**

As shown in Table 4.19, majority of participants, both male and female (76.8% and 73.6% respectively) had moderate to high levels of self-disclosure.

Table 4.20 presents the descriptive statistics on the levels of self-disclosure on cancer illness by sex.

Table 4.20 Descriptive Statistics for Levels of Self-Disclosure on Cancer Illness by Sex

Sex		N	Minimum	Maximum	Mean	Std. Deviation
Male	Self-disclosure scores	125	65	260	169.10	49.928
	Valid N (listwise)	125				
Female	Self-disclosure scores	216	67	256	159.21	41.885
	Valid N (listwise)	216				

From Table 4.20, the lowest score attained by male participants was 65, while the highest score was 260. The mean score for male participants was 169.10 (SD=49.928), indicating that on average the male participants had a moderate level of self-disclosure on cancer illness. For female participants, the lowest score was 67, while the highest score was 256. The mean score for the female participants was 159.21 (SD=41.885), indicating that on average the female participants also had moderate levels of self-disclosure on cancer illness.

The researcher further sought to establish whether there was a statistically significant mean difference in the levels of disclosure of cancer by sex. The findings are presented on Table 4.21 and 4.22

Table 4.21 Descriptive Statistics on Sex and Self-disclosure

	Sex	N	Mean	Std. Deviation	Std. Error Mean
Self-disclosure	Male	126	168.17	50.810	4.527
	Female	221	156.84	44.261	2.977

There were 126 male and 221 female participants. Males had higher levels of self-disclosure (*M* = 168.17, *SD* = 50.810) than females (*M* = 156.84, *S D* = 44.261).

Table 4.22 Independent Samples T-Test Results

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Self-disclosure	Equal variances assumed	4.468	.035	2.172	345	.031	11.333	5.218	1.071	21.595
	Equal variances not assumed			2.092	231.892	.038	11.333	5.418	.658	22.008

An independent-samples t-test was run to determine if there were differences in levels of disclosure of cancer illness between males and females. Homogeneity of variances was not assumed, as assessed by Levene's test for equality of variances (p = .035). Males had higher levels of self-disclosure (M = 168.17, SD = 50.810) than females (M = 156.84, $S D$ = 44.261), a difference that was statistically significant, M = 11.33, 95% CI [0.658, 22.008], $t(231.892) = 2.092$, $p<0.05$. From the findings, the null hypothesis that there is no significant difference in the levels of self-disclosure of cancer illness across sex was thus rejected.

Data was further analyzed for sex and age differences on the levels of self-disclosure on cancer illness. Findings are presented on Table 4.23.

Table 4.23 Levels of Self-Disclosure on Cancer Illness by Sex and Age

Sex	Age	Levels of Self-disclosure	Frequency	Percent
Male	18-35 years	Low	9	37.5
		Moderate	4	16.7
		High	11	45.8
		Total	**24**	**100.0**
	36-60 years	Low	11	18.3
		Moderate	31	51.7
		High	18	30.0
		Total	**60**	**100.0**
	61-89 years	Low	9	22.0
		Moderate	22	53.7
		High	10	24.4
		Total	**41**	**100.0**
Female	18-35 years	Low	11	22.4
		Moderate	29	59.2
		High	9	18.4
		Total	**49**	**100.0**
	36-60 years	Low	36	28.3
		Moderate	67	52.8
		High	24	18.9
		Total	**127**	**100.0**
	61-89 years	Low	9	23.1
		Moderate	19	48.7
		High	11	28.2
		Total	**39**	**100.0**

As indicated on Table 4.23, for male participants, those aged 61-89 had the highest score (75.7%) for low to moderate levels of self-disclosure, followed by those aged 36-60 at 70.0% whereas those aged 18-35 had the lowest scores at 54.2%. Among the female participants, those aged 18-35 had the highest score (81.6%) for low to moderate levels of self-disclosure, followed by those aged 36-69 at 81.1%, whereas those aged 61-89 had the lowest scores at 71.8%.

Table 4.24 presents the levels of self-disclosure of cancer illness by marital status.

Table 4.24 Levels of Self-Disclosure by Marital status

Marital Status	Levels of Self-disclosure	Frequency	Percent
Single	Low	7	21.9
	Moderate	18	56.3
	High	7	21.9
	Total	**32**	**100.0**
Married	Low	59	24.7
	Moderate	125	52.3
	High	55	23.0
	Total	**239**	**100.0**
Divorced	Low	2	25.0
	Moderate	4	50.0
	High	2	25.0
	Total	**8**	**100.0**
Widowed	Low	14	32.6
	Moderate	18	41.9
	High	11	25.6
	Total	**43**	**100.0**
Separated	Low	4	21.1
	Moderate	7	36.8
	High	8	42.1
	Total	**19**	**100.0**

From Table 4.24, 78.2% of participants who were single had low to moderate levels of self-disclosure, 77.0% of married participants had low to moderate levels of self-disclosure, while 57.9% of those separated having low to moderate levels of self-disclosure on cancer illness.

Table 4.25 presents the levels of self-disclosure of cancer illness by type of cancer.

Table 4.25 Levels of Self-Disclosure by type of Cancer

Type of cancer	Levels of self-disclosure	Frequency	Percent
Breast Cancer	Low	24	28.2
	Moderate	45	52.9
	High	16	18.8
	Total	**85**	**100.0**
Cervical Cancer	Low	12	27.9
	Moderate	19	44.2
	High	12	27.9
	Total	**43**	**100.0**
Prostate Cancer	Low	7	24.1
	Moderate	18	62.1
	High	4	13.8
	Total	**29**	**100.0**
Others	Low	49	25.8
	Moderate	90	47.4
	High	51	26.8
	Total	**190**	**100.0**

From Table 4.25, 86.2 % of participants with prostate cancer had low to moderate levels of self-disclosure, 81.1% of participants with breast cancer also had low to moderate levels of self-disclosure, while 27.9% of those with cervical cancer had high levels of self-disclosure.

Table 4.26 presents the levels of self-disclosure of cancer illness to family members

Table 4.26 Levels of Self-disclosure to family members

Levels of self-disclosure	Frequency	Percent
Low	63	18.2
Moderate	148	42.7
High	136	39.2
Total	**347**	**100.0**

From Table 4.26, 60.9% of participants had low to moderate levels of self-disclosure to family members, while 39.2% had high levels of self-disclosure.

Table 4.27 presents the levels of self-disclosure of cancer illness to health personnel.

Table 4.27 Levels of Self-disclosure to health personnel

Levels of self-disclosure	Frequency	Percent
Low	259	74.6
Moderate	79	22.8
High	9	2.6
Total	**347**	**100.0**

As shown on Table 4.27, 97.4% of participants had low to moderate levels of self-disclosure to health personnel, while 2.6% had high levels of self-disclosure.

4.3.3 Influence of Fear of Cancer Illness on Self-disclosure

Objective three sought to determine the influence of fear of cancer illness on self-disclosure among adult patients at Kenyatta National Hospital Cancer Treatment Center. To test this objective, the researcher conducted a chi-square test of association. Chi-square test was chosen because the two variables were measured in ordinal scale. The findings are shown on Tables 4.28 and 4.29.

Table 4.28 Cross-tabulation between Levels of Fear and Levels of Self-Disclosure

			Levels of Self-Disclosure			
			Low	Moderate	High	Total
Levels of Fear	Low	Count	38	75	33	146
		Expected Count	36.8	73.6	35.5	146.0
		% within updated fear levels	26.0%	51.4%	22.6%	100.0%
		% within self-disclosure	44.2%	43.6%	39.8%	
		% of Total	11.1%	22.0%	9.7%	42.8%
	Moderate	Count	29	82	41	152
		Expected Count	38.3	76.7	37.0	152.0
		% within updated fear levels	19.1%	53.9%	27.0%	100.0%
		% within self-disclosure	33.7%	47.7%	49.4%	
		% of Total	8.5%	24.0%	12.0%	44.5%
	High	Count	19	15	9	43
		Expected Count	10.8	21.7	10.5	43.0
		% within updated fear levels	44.2%	34.9%	20.9%	100.0%
		% within self-disclosure	22.1%	8.7%	10.8%	
		% of Total	5.6%	4.4%	2.6%	12.6%
Total		Count	86	172	83	341
		Expected Count	86.0	172.0	83.0	341.0
		% within updated fear levels	25.2%	50.4%	24.3%	100.0%
		% within self-disclosure	100.0%	100.0%	100.0%	
		% of Total	25.2%	50.4%	24.3%	100.0%

As shown on Table 4.28, for low levels of fear, participants with low levels of self-disclosure had an observed count that was more than the expected count, while for high levels of self-disclosure the expected count was more than the observed count. For high levels of fear of cancer, the observed count for low levels of self-disclosure was higher than the expected count, and for high levels of self-disclosure, the expected count was more than the actual count. This implies that as level of fear increases, the level of self-disclosure decreases.

Table 4.29 presents findings on whether there is a significant association between levels of fear and levels of self-disclosure.

Table 4.29 Chi-Square Tests Results

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.722[a]	4	.020
Likelihood Ratio	11.042	4	.026
Linear-by-Linear Association	.445	1	.505
N of Valid Cases	341		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.47.

A chi-square test for association was conducted between levels of fear and levels of self-disclosure. All expected cell frequencies were greater than five. There was a statistically significant association between levels of fear and levels of self-disclosure, $\chi^2(4) = 11.722$, $p = .020$. The level of significance (p value) was measured at 0.05 level. From this finding, the null hypothesis, which stated that fear of cancer illness has no significant influence on self-disclosure among adult patients at KNH-CTC was thus rejected.

Chi-square of analysis exploratory data analysis was further conducted to establish whether there was a significant relationship between fear of cancer illness and self-disclosure by sex, age, marital status and self-disclosure to family members and health personnel. The findings are shown in the subsequent tables.

Table 4.30 Chi-Square Tests Results by Sex

Sex		Value	Df	Asymptotic Significance (2-sided)
Male	Pearson Chi-Square	6.267[a]	4	.180
	Likelihood Ratio	5.740	4	.219
	Linear-by-Linear Association	.032	1	.857
	N of Valid Cases	125		
Female	Pearson Chi-Square	7.327[b]	4	.120
	Likelihood Ratio	7.090	4	.131
	Linear-by-Linear Association	.491	1	.484
	N of Valid Cases	216		

a. 2 cells (22.2%) have expected count less than 5. The minimum expected count is 3.02.

b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.11.

A chi-square test for association was conducted between levels of fear and levels of self-disclosure by sex. 2 cells had expected cell frequencies of less than five. The association between levels of fear and levels of self-disclosure by sex was not statistically significant, $p>0.05$. The level of significance was measured at 0.05. This implies that sex was not a significant factor in the relationship between the level of fear and level of self-disclosure.

Table 4.31 presents the findings on the relationship between fear of cancer illness and self-disclosure by age.

Table 4.31 Chi-Square Tests Results by Age

Age		Value	Df	Asymptotic Significance (2-sided)
18-35	Pearson Chi-Square	3.042[b]	4	.551
	Likelihood Ratio	3.043	4	.551
	Linear-by-Linear Association	.541	1	.462
	N of Valid Cases	73		
36-60	Pearson Chi-Square	12.291[c]	4	.015
	Likelihood Ratio	11.756	4	.019
	Linear-by-Linear Association	.252	1	.616
	N of Valid Cases	187		
61-89	Pearson Chi-Square	4.715[d]	4	.318
	Likelihood Ratio	4.736	4	.315
	Linear-by-Linear Association	1.331	1	.249
	N of Valid Cases	80		

b. 3 cells (33.3%) have expected count less than 5. The minimum expected count is 2.47.
c. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.29.
d. 3 cells (33.3%) have expected count less than 5. The minimum expected count is 1.35.

A chi-square test for association was conducted between levels of fear and levels of self-disclosure by age. The association between levels of fear and levels of self-disclosure by age for participants aged 36-60 was statistically significant, p=0.015. The level of significance was measured at 0.05. For the other age categories, there was no statistical significance association between levels of fear and levels of self-disclosure.

Table 4.32 presents the findings on the relationship between fear of cancer illness and self-disclosure by marital status.

Table 4.32 Chi-Square Tests Results by Marital Status

Marital Status		Value	Df	Asymptotic Significance (2-sided)
Single	Pearson Chi-Square	5.740[a]	4	.219
	Likelihood Ratio	5.965	4	.202
	Linear-by-Linear Association	.886	1	.347
	N of Valid Cases	32		
Married	Pearson Chi-Square	3.560[b]	4	.009
	Likelihood Ratio	12.176	4	.016
	Linear-by-Linear Association	2.264	1	.132
	N of Valid Cases	239		
Divorced	Pearson Chi-Square	6.000[c]	4	.199
	Likelihood Ratio	7.271	4	.122
	Linear-by-Linear Association	4.065	1	.044
	N of Valid Cases	8		
Widowed	Pearson Chi-Square	8.264[d]	4	.082
	Likelihood Ratio	7.953	4	.093
	Linear-by-Linear Association	4.642	1	.031
	N of Valid Cases	43		
Separated	Pearson Chi-Square	2.327[e]	4	.676
	Likelihood Ratio	2.296	4	.681
	Linear-by-Linear Association	1.753	1	.186
	N of Valid Cases	19		

a. 7 cells (77.8%) have expected count less than 5. The minimum expected count is .44.

b. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.59.

c. 9 cells (100.0%) have expected count less than 5. The minimum expected count is .25.

d. 5 cells (55.6%) have expected count less than 5. The minimum expected count is .51.

e. 9 cells (100.0%) have expected count less than 5. The minimum expected count is 1.05.

A chi-square test for association was conducted between levels of fear and levels of self-disclosure by marital status. The association between levels of fear and levels of self-disclosure by marital status for the participants who were married was statistically significant, p<0.009. The level of significance was measured at 0.05. The study did not establish a significant association between levels of fear and levels of self-disclosure for the other marital status.

Table 4.33 presents the findings on the relationship between fear of cancer illness and self-disclosure to family members.

Table 4.33 Chi-Square Tests Results by Self-disclosure to Family Members

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	27.979[a]	4	.000
Likelihood Ratio	22.472	4	.000
Linear-by-Linear Association	13.780	1	.000
N of Valid Cases	341		

a. 1 cells (11.1%) have expected count less than 5. The minimum expected count is 4.54.

A chi-square test for association was conducted between levels of fear and levels of self-disclosure. 1 cell frequency had expected a count of less than five. There was a statistically significant association between levels of fear of cancer and levels of self-disclosure to family members, $\chi^2(4) = 27.979$, $p < 0.05$.

Table 4.34 presents the findings on the relationship between fear of cancer illness and self-disclosure to health personnel.

Table 4.34 Chi-Square Tests Results by Self-disclosure to Health personnel

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.037[a]	4	.552
Likelihood Ratio	3.337	4	.503
Linear-by-Linear Association	.014	1	.906
N of Valid Cases	341		

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is .38.

A chi-square test for association was conducted between levels of fear and levels of self-disclosure. 3 cell frequencies had expected a count of less than five. The association between levels of fear and levels of self-disclosure to health personnel was not statistically significant, $\chi^2(4) = 3.037$, $p > 0.05$

4.4 Qualitative Data Analysis

Qualitative data was put into five themes which were assigned codes as follows;

Code 1- Fear of cancer illness, **Code 2-** Fear by type of cancer, **Code 3-** Fear of death,

Code 4- Other fears and **Code 5-** Self-disclosure. The results are presented on Table 4.35.

Table 4.35 Qualitative Data Findings

Code	Transcription and analysis
1	On fear of cancer illness, seven participants responded. All talked of having had a lot of fear about "…hearing the word cancer...better to have HIV… surgery…. radiotherapy…" upon being told their diagnosis. Six of the participants said their fear eventually reduced because, "we are very many who have been diagnosed with cancer…information and working as health volunteer".
2	On fear by type of cancer, out of five participants who responded, three said there is "no better type of cancer as any part of the body affects the whole body…my problem was with feeding and acidity the head was affecting the stomach… wished…better … uterine…than the cervical…used to bleed heavily…so that the doctor would remove it but I saw another patient whose uterus was removed but her problems increased…". Two participants said,"…cancer of breast was the worst…once the breast is removed…my hand became paralyzed and could not do most of the things…it is better …that can be operated…the pain stops and healing is faster…mine …of cervix…only given chemotherapy and now the swelling is back …cancer is coming back". All participants said that all types of cancer are "…very expensive…"
3	On fear of death, seven participants responded. All said upon diagnosis, they feared cancer would cause their death. "I...saw death…was very afraid…cried a lot and wondered…life has just ended…have lived for 60 years and now…knew my life was coming to an end…just felt…wouldn't last another two months…could have died"
4	On other fears, seven participants responded. Their fears were "that others including close friends will talk…a lot of bad things…about someone when they learn of their cancer diagnosis,…my kids especially when the doctor asked "how old is your last born?",…no treatment for cancer…the money required,…often hearing about deaths of friends (*patients*) made at the hospital in the course of their treatment"
5	On self-disclosure seven participants responded. Two participants said they self-disclosed, "…everyone knew from the beginning...they know my breast was removed… were praying for me…I got well and went back to work … because you have to ask for financial assistance…when…silent problems can kill you…I talk about it when necessary…like it most when I talk with other cancer patients because they understand everything…" Reasons for not self-disclosing by five participants were "...people talk…especially after chemotherapy when your hair starts falling off… is HIV-positive…just waiting for death…very bad disease…'ugonjwa wa saratani'(*Kiswahili name for cancer*)…named after Satan/ Devil… emotional pain…told my children only…only talk with the doctor… two people… recently died of cancer… friends who know…talking about how cancer has no cure in my presence …when we were referred to this hospital…people…discouraged us that we would be wasting our time and money. One of my husband's friends…" I dreamt that you had gone to Nairobi and you came back home alone".(*all participants laughed*)…people…say that cancer is due to inheritance or curse…customers…will be seeing me as a person who…is going to die soon…no one knows…even the people I work with…I do not want them to laugh at me…thought…better…cancer than HIV but…people say that it is better to have HIV… so I remain silent").

As shown in Table 4.35 all participants who responded on fear of cancer and death had these fears.

4.5 Summary of Findings

The following are the key findings that emerged from the data analysis.

The study sample population was composed of 36.3% males and 63.7% females, with the majority of the participants aged between 36 to 60 years (59.7%), while 70% of the participants were married. The leading types of cancer among the participants were breast, cervical and prostate. The leading type of cancer in males was prostate cancer (23%) and in females was breast cancer (38%).

On assessment of fear of cancer illness, 44.4% of the participants had moderate levels of fear. On average, the participants also had moderate levels of fear (M=45.27, SD=12.072). Nearly half of the male participants had moderate levels of fear (49.2%), while 43.9% of the female participants had low levels of fear. For males aged between 36 to 60 years, 53.3% had moderate levels of fear of cancer, while 46.5% of female participants of the same age group had low levels of fear. More than half of the participants who were single had moderate levels of fear (62.5%), while 44.4% of married participants had moderate levels of fear of cancer. More than half (55.8%) of the participants with cervical cancer had moderate levels of fear, followed by 48.3% of participants with prostate cancer who also had moderate levels of fear.

On assessment of Patient Self-disclosure Levels (PSDL) it was established that 50.4% of the participants had moderate levels of self-disclosure, while 24.3% had high self-disclosure levels. However, on average the participants had moderate levels of self-disclosure regarding their cancer illness (M=162.84, SD=45.181). It was established that, 45.6% of males had moderate levels of self-disclosure on cancer illness, while 53.2% of females also had moderate levels of self-disclosure. For both males and females, more than half of the participants aged between 36 to 60 years had moderate levels of self-disclosure 51.7% and 52.8% respectively. More than half of those who were single (56.3%) or married (52.3%) had moderate levels of self-disclosure on cancer illness. Participants with prostate cancer self-disclosed more (62.1%) compared to those with other types of cancer. 42.7% and 39.2% of participants moderately and highly self-disclosed to their family members, compared to 74.6% of the participants who had low self-disclosure to health personnel.

On assessment of influence of fear of cancer illness on self-disclosure, the chi-square cross tabulation established that as the fear of cancer increased, the disclosure levels decreased. The chi-square of association test established a statistically significant association between fear of cancer illness and self-disclosure of cancer illness $\chi^2(4) = 11.722$, $p = 0.02$. The significance was measured at the 0.05 level. The association between levels fear of cancer illness and levels of self-disclosure by sex was not statistically significant, $p > 0.05$. The chi-square of association findings further established statistically significant relationship between levels of fear of cancer and levels of self-disclosure for participants aged between 36 to 60 and those who were married, $p < 0.05$. A statistical significant relationship was also established between levels of fear of cancer and levels of self-disclosure to family members. However, there was no significant association between level of fear of cancer and level of self-disclosure to health personnel.

From the qualitative data analysis, all the seven participants who responded on the Theme of Fear of Cancer Illness (Code 1) said they had a lot of fear of cancer illness upon learning their diagnosis. On Theme Code 2 which was Fear by Type of Cancer, three out of five who responded said there was no better type of cancer, while two said the type of cancer each of them had was worse. On Fear of death (Theme Code 3), all the seven participants who responded said they had been afraid that cancer would bring about their death. On Other Fears (Theme Code 4), the seven participants who responded said they feared; what “bad things” others would say about cancer, for their children, for lack of cure, finances and frequent death news of patient friends they had made in the course of hospital appointments. On Theme Code 5 (Self-disclosure), two of the seven participants who responded said they self-disclosed freely while five restricted their self-disclosure.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to establish the influence of fear of cancer illness on self-disclosure among adult patients in Nairobi City County, Kenya. In this chapter, discussions, conclusions and recommendations of the study are made. The chapter begins with the discussion of the findings, followed by conclusions drawn from the discussions, and lastly the recommendations arising from the study.

5.2 Discussion

This section contains discussion of the study findings. First is the discussion of the findings from the analysis of demographics followed by the discussion of findings as per the research objectives.

5.2.1 Demographic Information of Patients at Kenyatta National Hospital Cancer Treatment Centre in Nairobi City County, Kenya

Several observations were made based on the demographic analysis of the study sample. Regarding the age of the participants, the youngest of the participants was 18 years old which was the lower age-limit in the study. The oldest participant was 89 years old. The age distribution showed that 88.7% of the participants were 36 years and above. Half (50%) of the participants were aged 36 -60 years. All the Focus Group Discussion participants were also aged 37 years and above. This supported the expectation that the possibility of a cancer diagnosis for an individual adult rises with age (Hoffman et al., 2013).

The demographic analysis of the participants in the survey revealed that females (63.7%) far exceeded males (36.3%). In the Focus Group Discussion, the females (11) by far exceeded the males (2). This could be as a result of poor healthcare-seeking behavior among men with cancer in Kenya. Most cultures in Kenya promote stoicism in men and part of that requires braving symptoms of ill health. This could explain the difference in the number. This observation was also noted by Voeten et al. (2004). Who pointed to poor health seeking behaviours among men.

Additionally, although the ratio of males to females in the Kenyan general population is approximately 1:1 (KNBS, 2018), the composition of cancer patients at KNH-CTC by sex was dominated by females. These findings were also contrary to GLOBOCAN (2018) which states that in every 5 men and 6 women, one will develop cancer in their life-time. Similar findings were also reported by Thompson et al, (2016) who noted that females sought more heathcare in response to both physical and mental health concerns as compared to males.

The current study found that the three leading types of cancer were breast (25.0%), cervical (12.0%) and prostate (8%). It is worth noting that 37.0% of all the leading cancers were female related. The findings for breast and prostate cancer were closely in line with GLOBOCAN (2018) findings that stated that 25.4% and 7.1% of all global cancer diagnoses in 2018 were breast and prostate cancer respectively. On the contrary, findings on cervical cancer differed from those of GLOBOCAN (2018) which indicated that cervical cancer was not among the top five most prevalent cancers globally.

The current study also found variations in participants' marital status. Almost three quarters of the participants (70.0%) were married. This is because the study was carried out among adult population and studies have shown that in Sub-Saharan Africa, marriage occurs mostly at the ages ranging from 17-35 years. This may explain the higher percentage of married participants. Additionally the latter percentage may have implied that for the married participants, their spouses could have been the main caregivers. Hence participants' self-disclosure to their spouses may have been important.

In term of levels of education, the results showed that more than half (55.9 %) of the participants had primary level of education or no formal education with only 9.2% having attained post-secondary education. Education levels have been associated with economic status, with studies showing that people with lower levels of education tend to be on the lower end of economic empowerment. KNH-CTC which is a public, low-cost facility, making it the better or only option for people who lack financial ability to pay for medical care in private facilities that are beyond their means. These findings are in concurrence with the study by Thompson et al (2016) who pointed out that education level and economic empowerment were better predictors of healthcare-seeking behaviors for both mental and physical health concerns. Perhaps a similar study carried out in a private facility may yield a different outcome in relation to levels of education.

5.2.2 Levels of Fear of Cancer Illness among the Participants

Analysis of data on Patient Fear Levels (PFL) revealed that majority of the participants (57.4%) had either moderate or high levels of fear of cancer illness. Findings from the qualitative analysis in the current study (Code 1) revealed that the causes of patients' fear were mainly fueled by how society negatively perceived the disease. According to the theory of Social-Cognitive processing (SCP) Model of Emotional Adjustment to Cancer by Lepore (2001) which was used to conceptualize the current study's variables, an individual's perception of cancer may turn fearful if the social environment portrays it as dreadful. Fear of cancer illness before a cancer diagnosis among the general population therefore persists within individual patients. These findings concurred with literature that cancer is a fearful disease (Sung et al., 2019), which found that emotional difficulties are common among cancer patients and negatively affect their quality of life. The meta-analysis carried out by Vrinten et al. (2016) also noted that population based studies have consistently shown that about 50% of the population in the USA and UK worry to some extent about getting cancer. This fear of cancer originates from a view of the illness as a brutal, unpredictable and indestructible enemy that causes fear.

The fear levels were higher among male participants (59.5%) than among female participants (56.1%). During the focus group discussion participants noted that they found comfort in numbers from the realization that cancer patients were numerous, and they could provide support for each other. Females tend seek support more easily probably due to socialization. This ease of getting support could be the reason why females had lower levels of fear compared to males.

The differences between the sexes could also be attributed to the fact that more awareness on breast cancer has been created than on any other types of cancer, as noted by Mulcahy (2008), who reported that cancer awareness has led to profound changes in social attitudes and destigmatization of cancer among women in general. According to Thompson et al. (2016), women show more interest in health than men. Moreover, women have reason to frequently interact with healthcare professionals during pregnancy, childcare and hormone replacement therapy (Brotherstone, Miles, & Wardle, 2005). Women therefore may have advantage over men in gaining more facts on various illnesses, including cancer. This may lead to less fear among females. A female participant in the Focus Group Discussion supported this possibility by saying that her fear levels were reduced through acquiring knowledge and volunteering to work in health care services. According to Lariviere and Lariviere (2015), carrying out volunteer work among cancer patients after cancer treatment raises confidence of the individual.

In the Focus Group Discussion, participants agreed that cancer is indeed fearful upon diagnosis, expensive to treat and there is no better type of cancer. These were coded under the theme of fear of cancer illness (Theme Code 1) and fear by type of cancer (Theme Code 2). Experience with cancer illness and its treatment as well as observation of other patients with similar and different types of cancer brought these participants to the latter conclusion. These findings are similar to those of Lariviere and Lariviere (2015) who noted that all cancer patients gain emotionally from fellowship with others that are undergoing like experiences, needs and challenges.

According to the findings of the current study, levels of fear of cancer decreases with age for female participants with scores of 70%, 53.5% and 47.5% for ages 18-35, 36-60 and 61-89 respectively. The younger female participants may have had more concerns such as the welfare of their children (likely to be minors) and careers (likely to be of great value to them). These concerns may increase their emotional distress hence the higher levels of fear. This is in line with the findings of Shay et al. (2016) that prevalence of fear was significantly higher among adolescents and young adults (85.2%), as compared to older adults (79.7%) diagnosed with cancer. Similar findings were recorded among male participants aged between 61-89 years who recorded a score of 45.3%. However, males aged between 18 -35 years and 36-60 years showed increasing prevalences of fear levels at 62.5% and 68.3% respectively. In line with African cultural expectations, males tend to start up families at a later age than females. Males of ages 36-60 years are therefore likely to have higher concerns than their counterparts of ages 18-35 and 61-89 years. At this age, the concerns for their young families and highly valued careers among others may cause them high levels of fear regarding their cancer diagnosis.

According to the World Health Organization (2018), as people advance in age, in addition to biological changes, they develop increased chances of ill-health and other life transitions such as retirement, relocation to more appropriate housing, and death of friends and partners; these are likely to become common occurrences. At the age of 36-60 years, according to Aziz (2013), individuals are faced with the task of going beyond self and family to add value to the next generation. A cancer diagnosis for the male participants of middle age may have been experienced as a disruption to their ambitions, which may cause psychological stagnation and hence the elevated fear levels for this age group.

The current research also established that the single and widowed participants depicted lower percentages of high fear levels than those who were married, divorced or separated. Possibly, the spouses were more afraid than the patients, which may have increased the fear for married participants. One participant in the Focus Group Discussion said that she later (in the course of treatment) learnt that her husband had been more afraid than herself. According to Hagedoorn, et al. (2011), high fear levels may be caused by mismatch in self-disclosure levels between spouses. The level of fear of cancer illness of people who participants interacted with in their day-to-day life may have raised their fears. It was beyond the scope of the study to find whether the cause of divorce or separation was related to the cancer diagnosis either directly or indirectly.

5.2.3 Levels of Self-disclosure among the Participants

Analysis of data on assessment of Patient Self-disclosure Levels (PSDL) revealed that majority (75.2%) of the participants had low to moderate levels of self-disclosure. Descriptive statistics further established that on average, the participants had moderate levels of self-disclosure (M=162.84, SD=45.181). According to the theory of SCP Model of Emotional Adjustment to Cancer by Lepore (2001), patients make an attempt to gain control over the illness. Cognitive integration can occur through reappraisal of events to fit preconceptions (assimilation) or through change of mental models to fit information from a traumatic event (accommodation) (Lepore, 2001). In his theory Lepore, (2001) points out that social support or constraints may account for the variance in the extent of cognitive- processing achievement. The findings concur with those of Yoo et al. (2010) who noted that difficulty in self-disclosure was influenced by various elements of emotion work in the disclosure process such as managing other people's worry, protecting others and instructing others. They further noted that respondents were willing to self-disclose particularly if there was increased support and emotional resources from those they interact with. According to Brandao et al. (2017), successful adjustment following a cancer diagnosis to a large extent depends on one's ability to sustain and modify expectations that relate to the illness. According to Lepore (2001) positive, supportive social responses from others may validate the patient's experience and affirm other's concern for them. This will enable patients to contemplate and self-disclose their cancer-related emotions, thoughts and wishes to others they interact with.

Analysis by sex revealed that males had higher level of self-disclosure (M= 168.17, SD= 50.81) than females (M= 156.84, SD= 44.26). This difference was statistically significant, M=11.33, 95% CI [0.658, 22.008], t(231.89) =2.092, $p<0.05$, meaning that sex had an influence on the levels of self-disclosure. The lower level of self-disclosure among women could be as a result of their higher concern for emotion work as noted by Yoo et al. (2010). Najmabadi, et al. (2014) also pointed out that self-disclosure among women sometimes had less positive effects which included, altering other people's perception of the patient, difficulties with work and family and diminished sense of closeness with the people who they disclosed to. In turn, this may explain the lower levels of self-disclosure recorded among females in the current study.

As regards self-disclosure by marital status, majority of those who were single (78.2%) and those who were married (77.0%) had low to moderate levels of self-disclosure compared to those who were divorced (75.0%), widowed (74.5%) or separated (57.5%). Majority of the single participant were in the lowest age category. People at the category of ages 18-35 are likely to have had less experience with major challenges (such as loss and grief) which would make participants at this age-group reluctant to introduce an unfamiliar topic to their peers. Moreover, divorce, separation and widowhood may lower self-disclosure where it involves emotional withdrawal for the individual.

As for the married study participants, they may have relied upon their spouses for decision-making since the latter were likely to have had even more first-hand information than the patient from the health personnel. Although past studies have shown that self-disclosure is helpful among couples (Baas et al., 2011), the current study's participants may have missed out on this benefit.

The current study found that majority of participants (81.9%) self-disclosed to family members while the lowest percentage (25.4%) self-disclosed to the health-personnel. This was also confirmed by participants in the Focus Group Discussion on the Theme of Self- disclosure (Theme Code 5) when they expressed that they self-disclosed to close family members only. The participants gave the reason for the latter restriction as to avoid discouragement from the rest of society who are quick to point out that cancer has no cure. In addition the FGD participants summarized that the benefits of self-disclosure outweigh the disadvantages. The high level of self-disclosure to family is supported by literature which shows that patients found it easier to self-disclose to family members since they received more support from them (Najmabadi, et al., 2014 & Hoffman et al., 2013). The latter studies noted that when one is diagnosed with cancer, acknowledging the fact that there are limits to personal control may help patients in creating awareness of aspects of the illness that require seeking assistance. Families of cancer patients may therefore be overwhelmed with meeting the needs of their ailing kin. An increase in levels of self-disclosure by patients to other individuals and groups may draw support and offer some relief to the family.

5.2.4 Influence of Fear on Self- disclosure among the Participants

Analysis of data on influence of fear of cancer illness on self-disclosure established a statistically significant association between fear of cancer and self-disclosure of cancer illness $\chi^2(4) = 11.722$, $p < 0.05$. The chi-square test established that as the fear of cancer increased, the self-disclosure levels decreased. This was also the finding in the Focus Group Discussion (FGD) where participants expressed fear of discouragement upon self-disclosure from groups of interaction, except for close family members. This finding is in agreement with literature which showed fear as a negative emotion that is likely to cause apprehension, alarm or worry (Hoffman et al., 2013; Kerslake, 2013). Kerslake (2013) noted that fear of cancer is likely to have influence on cancer patients' behavior including their self-disclosure on how the illness affects their day to day living. Kerslake further pointed out that the levels of self-disclosure affect the patients' access to essential psychosocial support. Hoffman et al., (2013) pointed out that a cancer patient who has high levels of fear regarding the illness is likely not to self-disclose of their worries such as impending pain, financial implications or thoughts of death in their mind. Since the respondents in the current study scored high on levels of fear, this may imply that they had inadequate access to support that would aid in their wellbeing.

The current study found an inverse association between levels of fear and levels of self-disclosure. These findings support the above argument by Lepore (2001) that when the social environment, perceived or real, is not positive then patients' levels of self-disclosure will be low.

According to Lepore (2001), therefore, characteristics of the social environment contribute to the individual's levels of fear of cancer and influence their self-disclosure levels. If the social environment is perceived as pleasant and supportive (alleviating fear), levels of self-disclosure rise and may draw the necessary support and a positive effect on recovery. If the social environment is perceived as aversive and hindering (creating fear), levels of self-disclosure fall and may lead to unattended needs and a negative effect on the recovery. The current study's findings confirmed that low levels of fear would lead to high levels of self-disclosure and vice versa.

Findings of the current study showed that the association between fear of cancer and levels of self-disclosure varied with demographics of participants. On the influence of cancer illness on self-disclosure by sex, the Chi-square test established that the association between levels of fear of cancer and levels of self-disclosure was higher for female participants than for male participants. However, the association between levels fear of cancer illness and levels of self-disclosure by sex was not statistically significant, $p > 0.05$. However, a significant association between levels of fear of cancer and levels of self-disclosure for participants who were aged from 36 to 60 years was established. Similar statistical significance was established for marital status and self-disclosure to family members. These findings on age, marital status and disclosure to family members were in agreement with those of Baas et al. (2011) who confirmed that patients' high level of self-disclosure was important in the reduction of emotional distress.

These findings further emphasized the importance of family support in enhancing self-disclosure among the cancer patients as noted by Derlega et al. (2014).

5.3 Conclusions

From this study, the following conclusions were drawn;

1. The study established that majority of participants had moderate to high levels of fear of cancer illness. This fear may be attributed to how the social environment portrays cancer as a dreadful illness. The levels of fear were significantly different across sex with females having a higher score than males. Previous studies have attributed similar findings to disruption of their expectations, which may cause psychological stagnation and hence the elevated levels of fear.

2. Majority of the participants recorded low to moderate levels of self-disclosure. There was a statistically significant difference in the levels of self-disclosure across sex, with males having a higher score than females, despite this finding not agreeing with most studies. One study that concurred with the current study's findings pointed out that low self-disclosure among women could be as a result of higher concern for emotion work involved.

3. The study also found that the majority of participants self-disclosed to family. Patients found it easier to disclose to family members since they expected to receive support from them. On the other hand, self-disclosure by participants was lowest to the health personnel. Family members of cancer patients may therefore be overwhelmed or lack some of the resources necessary to meet their needs, while health personnel miss out on vital information to meet patients' needs. This may have a negative impact on the

effectiveness of medical care and recovery of the patient, hence lowering their quality of life.

4. The findings established a statistically significant negative association between fear of cancer illness and self-disclosure of cancer illness, indicating that as the fear of cancer increased, the disclosure levels decreased. These findings were in line with literature which noted that fear of cancer is likely to have influence on patients' behavior, including their self-disclosure on how the illness affects their day-to-day living.

5.4 Recommendations

The following are recommendations based on the findings of the current study:

Recommendations to policy makers

The study recommends a regular update of the registry both at County and National levels to clarify the prevalence trends of the disease. This would enable better intervention planning and implementation.

In line with Pillar 1 of NCCS, 2017-2022 there is need to invest in cancer awareness creation, frequently and consistently among the patients and general population to demystify cancer, reduce the stigma for people diagnosed with cancer and to encourage screening for early diagnosis. This may help reduce the levels of perception of cancer as a fearful illness and increase the levels of self-disclosure.

The study found that the lowest levels of self-disclosure by patients were to health personnel. This could deny vital information to the health personnel required to deliver quality care that is specific for each patient. There is need for policy makers to invest in health personnel training in facilitative behavior to encourage patient self-disclosure.

Cancer management requires a multi- dimensional approach which includes medical, psychological, social and spiritual aspects. The findings of the study however indicate that the psychological aspect was not given sufficient attention. The study would recommend therefore that policy makers as well as implementers factor in the psychological aspect at every stage- from screening, through diagnosis, treatment and aftercare.

The current study found that fear of cancer as an emotional distress was common among patients. However, the cancer management team did not include a mental health practitioner. The comprehensive cancer care team needs to include counselors, psychologists and psycho-oncologists in their practice so that they attend to the psychological needs of patients.

Mental health practitioners need to be actively involved in cancer awareness creation campaigns to make their fair contribution in cancer control through advocating for necessary behavior change, regular screening and early detection to address pre-diagnosis fear of cancer.

5.5 Recommendations for further studies

1. There is need for similar studies among the general population to establish whether there is influence of perception of cancer as a fearful illness on possibility of self-disclosure in the event of a cancer diagnosis. Such research would provide evidence to be used for awareness creation.

2. There is need for a study among the health personnel on evaluation of their facilitative behavior to encourage patient self-disclosure with an intervention of training for the same and re-evaluation.

3. This study was limited to fear as it relates to self-disclosure. However other psychological stressors could influence self-disclosure. There is therefore need for studies on other psychological factors affecting self-disclosure such as anxiety, anger, denial and depression among patients diagnosed with cancer.

4. The current study did not seek to investigate the quantity and quality of self-disclosure by patients which may also influence levels of fear. There is need for further studies to establish this.

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APPENDICES

A 1: Informed consent for Participants

Part 1: Information Sheet

My name is Hellen Waithaka, a student at Kenyatta University undertaking a Masters degree in Counseling Psychology. I invite you to volunteer to participate in this research on fear of cancer and how it affects talking about cancer, its treatment and how this has affected you since you knew that you had cancer. Your participation in this research is entirely voluntary and has no material benefits. The study is funded by the researcher for academic purposes and will be carried out among patients at the Kenyatta National Hospital Cancer Treatment Center (CTC) who will be there on medical appointment to avoid making participants incur expenses for the purpose of this research.

If you accept to participate in the research, you will be asked to fill out a questionnaire that will be provided to you and collected by the researcher. You may answer the questionnaire yourself, or it can be read to you and you can say out loud the answer you want written down for you.

Confidentiality

Please do not write your name on the questionnaire. Privacy will be provided when you are filling in the questionnaire. All information you give will remain confidential and will only be used for the purposes of the study. No one else except intended persons will access the information.

Withdrawal

You may withdraw from participation in this study at any time without giving reason and with no consequences whatsoever as a result of doing so.

Benefits

Your participation in the study may help you raise your awareness on your personal levels of fear of cancer and self-disclosure. This may help you to determine if there is need for you to address these issues. Your participation in the study will be vital contribution in the scientific documentation which may assist the health personnel in determining the need for putting in place the procedure of reducing fear of cancer among patients to increase their level of self-disclosure and improve management of the illness.

Kindly answer all questions included in this questionnaire. If there is a question you wish not to answer, you may skip it and move on to the next question.

Thank you for having accepted to be a participant in this research.

For queries related to this study kindly contact the following;

Hellen Njeri Waithaka

P.O. BOX 35134-00200, Nairobi.

E-mail: hellenwaithaka1@gmail.com Cell phone No. 0720320201

Or

Kenyatta National Hospital- University of Nairobi Ethical Research Committee (KNH-UoN ERC) Secretary.

Email: uonknh_erc@uonbi.ac.ke Website: http://www.erc.uonbi.ac.ke

Facebook:https://www.facebook.co/uonknh.erc

Twitter: @UoNKNH_ERC https://twitter.com/UoNKNH_ERC

PART 11: Informed Consent

I have fully understood part I of this consent and I voluntarily accept to be a participant in this study

Signature or initials of participant ___________________________________

Date ___________________________________

If cannot sign,

I confirm that the individual has given consent to participate in this research freely.

Relationship with participant __________________________________

Signature or initials of witness ___________________________________

Date ___________________________________

Name of administrator ___________________________________

A 2: 1 Fear of cancer and self-disclosure scales

KENYATTA UNIVERSITY

DEPARTMENT OF PSYCHOLOGY

P.O. BOX 43844

NAIROBI

Sno. ___________________

Date ___________________

NB: There are no wrong answers.

Please tick the most appropriate choice that applies to you or fill in the blanks with accurate information that you feel free to put down.

SECTION 1 (Bio-Data)

1. **Sex** **1** Male ☐ **2** Female ☐
2. **Age** What is your age? ____ years
3. **Marital status** **1** Single ☐ **2** Married ☐ **3** Divorced ☐ **4** Widowed ☐ **5** Separated ☐
4. **Highest level of education attained**
   1 No formal education ☐ **2** Primary ☐ **3** Secondary ☐ **4** College ☐ **5** University ☐
5. **Employment Status** **1** Employed by other ☐ **2** Self- Employed ☐ **3** Not Employed ☐
6. **Duration of cancer illness** In which year and month was your cancer diagnosed? _________

7. **Type of cancer** What type of cancer have you been diagnosed with ___________________

SECTION 2

Assessment of influence of Perception (AIP)

Please complete the following sentences by circling the number representing your feelings/opinion.

I think the following about cancer	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
8. Cancer is a fearful disease	**1**	**2**	**3**	**4**	**5**
9. Cancer is a contagious disease	**1**	**2**	**3**	**4**	**5**
10. Cancer is curable	**1**	**2**	**3**	**4**	**5**
11. Cancer is preventable	**1**	**2**	**3**	**4**	**5**
12. Cancer is inherited from parents	**1**	**2**	**3**	**4**	**5**
13. Cancer disrupts a person’s life	**1**	**2**	**3**	**4**	**5**
14. Cancer is like other diseases	**1**	**2**	**3**	**4**	**5**
15. Cancer treatment is very expensive	**1**	**2**	**3**	**4**	**5**
16. Cancer is a result of being bewitched	**1**	**2**	**3**	**4**	**5**
17. Cancer is a punishment from God	**1**	**2**	**3**	**4**	**5**
18. Cancer has to do with the devil	**1**	**2**	**3**	**4**	**5**

SECTION 3

Assessment of Patient Fear Levels (PFL)

The following set of questions seeks to gather information about the things you feared/fear during cancer treatment. Please answer the following by circling the number representing your feelings.

As a result of cancer I feared/fear	**Not at all**	**Rarely**	**Some of the Time**	**Much of the Time**	**Most of the Time**
19. Experiencing pain due to cancer and its treatment	**1**	**2**	**3**	**4**	**5**
20. Future diagnostic tests and treatment	**1**	**2**	**3**	**4**	**5**
21. Financial demands and effects on myself and my family	**1**	**2**	**3**	**4**	**5**
22. Cancer causing my death	**1**	**2**	**3**	**4**	**5**
23. Thinking about cancer all the time	**1**	**2**	**3**	**4**	**5**
24. Cancer recurring/ possible signs of recurrence	**1**	**2**	**3**	**4**	**5**
25. My children also having inherited cancer	**1**	**2**	**3**	**4**	**5**

26. Not being involved in decision making in my social roles	**1**	**2**	**3**	**4**	**5**
27. Being a burden to my family	**1**	**2**	**3**	**4**	**5**
28. My family being too involved in my cancer care	**1**	**2**	**3**	**4**	**5**
29. My friends being too involved in my cancer care	**1**	**2**	**3**	**4**	**5**
30. My employer not supporting me in my cancer care	**1**	**2**	**3**	**4**	**5**
31. My workmates being too involved in my cancer care	**1**	**2**	**3**	**4**	**5**
32. My sexual functioning being affected	**1**	**2**	**3**	**4**	**5**
33. Being not able to regain my full working capacity	**1**	**2**	**3**	**4**	**5**
34. Having less independence	**1**	**2**	**3**	**4**	**5**
35. Making less social contribution	**1**	**2**	**3**	**4**	**5**

SECTION 4

Assessment of Patient Self- disclosure Levels (PSDL)

The following set of questions seeks to gather information on who you talk to about your day today experience of cancer illness and how often you talk to them. Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of sadness in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
36. (a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**
(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of loneliness in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
37.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**

(c) Close friends	**1**	**2**	**3**	**4**
(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of anger in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
38.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**
(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of relief in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
39.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**

(c) Close friends	**1**	**2**	**3**	**4**
(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of joy in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
40.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**
(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of hope in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
41.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**

(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of disbelief in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
42.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**
(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of confusion in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
43.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**

(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of optimism in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
44.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**
(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and its effects of gratitude in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
45.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**

(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and your wish that complete cure is possible in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
46.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**
(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and your wish that treatment is more affordable in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
47.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**

(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

Please answer the following by circling the number representing your answer.

How often did/do you talk to/with the following people about cancer and your wish that treatment was/is not so demanding in your day-to-day life;	**Always**	**Sometimes**	**Rarely**	**Never**
48.(a) Health personnel	**1**	**2**	**3**	**4**
(b) Family	**1**	**2**	**3**	**4**
(c) Close friends	**1**	**2**	**3**	**4**
(d) Workmates	**1**	**2**	**3**	**4**
(e) Social groups	**1**	**2**	**3**	**4**

A 3: Focus group discussion guidelines

Introduction and Instructions to the Participants

-Welcoming and thanking participants for volunteering to take part in the focus group. Pointing it out to them that their views are important hence their invitation.

- Purpose of the focus group is to find out the nature of cancer fears among the participants and how they influence their self-disclosure

- Assurance of anonymity of who says what in the focus group discussion. Confidentiality of all information to be observed and access only given to those it is intended for. Encouragement for every member to feel free to participate but not compelled to where they wish not to.

- Ground rules of only one person speaking at a time, there are no wrong answers, freedom to speak in any order, participating always when one feels they have something to say, failing to agree with view of others is acceptable, ask any questions that you have and if alright the FGD begins.

- warm up by self-introduction by all participants

- Introduction Question

Give this question a thought, 'Has my being diagnosed with cancer increased or decreased my fear of cancer? '

FOCUS GROUP DISCUSSION ITEMS

(i) In your opinion, does type of cancer which a person is diagnosed with influence their amount of fear?

(ii) Many people say that upon receiving the news of their cancer diagnosis they fear that they are going to die soon. Were/are you afraid that your cancer illness may result into death?

(iii) Apart from fear of death, have/did you experience other forms of fear regarding cancer illness such as lack of access to psychosocial support, loss of ability to carry out social roles, isolation, pain, and cancer recurrence?

(iv) When you have a need to talk about how cancer illness affects you, what encourages or discourages you to do so?

-Concluding question. “Following all the things we have discussed, what would you say about fear of cancer and talking about how cancer affects you in your day to day life?”

Conclusion

Thanking participants for their valuable time and participation. Hoping they too found discussion interesting.

A 4: The study work plan

ACTIVITY	DURATION	TIME FRAME	PROGRESS REPORTING
Proposal development and defense	Six months	January 2014- June 2014	Achieved late
Post defense corrections and Graduate School permission for data collection	4 months	July 2014-October 2015	Achieved late
Seeking authorization to carry out the Study	3 months	November 2015-January-2016	Achieved late
Data collection	1 month	February 2016	Achieved late
Data analysis, report writing and submission of final copy	3 months	March 2016- May 2016	Achieved late

A 5: The study budget

ITEM	DETAILS	TOTAL
Consolidating literature	Internet access, journal articles subscription, purchase of books	20,000
Designing and developing research instruments	Transport, communication, print and photocopy	45,000
Pre-test instruments and refining the research instrument	Transport, print and photocopy	10,000
Data collection	Recorder, transport, communication, photocopy	105,000
Data analysis and presentation	Transport, photocopy, internet access, expertise charges	100,000
Finalizing the project	Typesetting, formatting and binding	30,000
Miscellaneous	Arising cost	50,000
Grand Total		360,000