CLOTHING CHALLENGES FACED BY BREAST CANCER SURVIVORS: A CASE OF SELECTED HOSPITALS IN NAIROBI COUNTY, KENYA

BY

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN APPAREL AND FASHION DESIGN IN THE DEPARTMENT OF FAMILY AND CONSUMER SCIENCES, SCHOOL OF AGRICULTURE AND BIOTECHNOLOGY

UNIVERSITY OF ELDORET

SEPTEMBER, 2018

DECLARATION

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DEDICATION

To my loving family led by my husband, Mr. Samuel Mwaura, son Victor Mwaura and my beautiful baby Vivian Nyambura.

ABSTRACT

Breast cancer is the second most common cancer found among women and is second to skin cancer. It is the leading type of cancer affecting women in Kenya. The most common surgical treatments for the disease are mastectomy and lumpectomy, which leads to changes in breast size, shape of the chest wall and overall torso symmetry. Breast Cancer Survivors desire clothes that are comfortable, fashionable and that can camouflage all outward evidence of breast cancer. The objectives of this study were to; determine the physical challenges faced by Breast cancer survivors, examine the challenges posed by the breast cancer treatment path with regard to clothing procurement of Breast Cancer Survivors, determine the challenges posed by fitting room settings, and to assess Breast cancer survivors' awareness of their clothing needs. The target population was Breast Cancer Survivors discharged from four cancer management hospitals in Nairobi namely Kenyatta National, MP Shah, Nairobi and Aga Khan University Hospitals. The study adopted a descriptive survey design, and used purposive sampling to select the four hospitals. Individual respondents were captured from their respective hospitals and at the hospices. A sample of 273 respondents participated in this study. Questionnaires were used to collect data. Descriptive statistics was used to analyse quantitative data using the Statistical Package for Social Sciences. Qualitative data was analysed through content analysis and discussion. This study found that the nature of the treatment path taken, fitting room setting and provision of clothing awareness were all significant challenges to Breast Cancer Survivors at $p = 0.000$. Sixty one percent (61.3%) respondents experienced numbness of the arm, above 54% of the respondents would like to but cannot use the clothes they used before the surgery, majority 81% respondents became very sensitive to the fabric texture while 79.4% of the respondents became very concerned about their privacy. The survivors were never prepared for the clothing challenges to expect after surgery. From the results it is evident that Breast Cancer Survivors faced many clothing related challenges. The study recommended that Clothes designed for Breast Cancer Survivors should be fabricate such that they meet their physical and psychological needs, easily accessible, and that clothes stores should have fitting rooms with maximum privacy. In addition right information should be given before survivors are discharged.

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LIST OF ACRONYMS

AKUH	Aga Khan University Hospital
BCSs	Breast Cancer Survivors
ERC	Ethics and Research Committee
IBM	International Business Machines
KNH	Kenyatta National Hospital
NACOSTI	National Commission for Science, Technology & Innovation
NHIF	National Hospital Insurance Fund
NSSF	National Social Security Fund
PMP	Post-Mastectomy Pain
SPSS	Statistical Package for Social Sciences
USA	United States of America
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Aesthetics refers to the external appearance of something, especially when

considered in terms of how pleasant it is

Breast cancer is a malignant tumour or growth in the breast, caused when cells

multiply uncontrollably, destroying healthy tissues

Clothing is a collective term for garments, items worn on the body.

Clothing style is a distinctive characteristic in any tangible object that is connected to the

human body such as hair weave, jewellery, clothes, handbags and shoes

that distinguishes one form or shape from another like round neck sweater

and v-neck sweater.

Covering apparel is another word for what you wear to cover our self.

Fitting room is a specially designed room in which the correct measurements of

clients can be taken or fitted with minimal exposure to the rest of the

public, such as other shoppers

Cancer treatment path is the line of treatment adopted for the specific cancer patient,

such as Radiotherapy, Chemotherapy, Mastectomy and Lumpectomy. **Clothing**

awareness refers to the knowledge about the kind of clothing a breast cancer

survivor requires after surgery.

Lumpectomy is the surgical operation for breast cancer in which the surgery is

limited to the removal of the visible and palpable tumour only.

Lymphedema is an accumulation of fluids and protein in the tissue that develops as a

result of malfunction of the lymphatic system causing swelling of the

soft tissues.

Mastectomy refers to the surgical removal of a breast, usually as a treatment for

    breast cancer

Post-mastectomy is the period following surgical operation in which breast has been

    removed as a treatment for cancer.

Post-surgery is the period following the medical procedure that involves operation or

    manipulation of a patient's body that includes cutting the body open.

Breast prosthesis is an artificial breast form that replaces a missing breast, which is

    lost through mastectomy.

ACKNOWLEDGEMENT

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter present the study's background, statement of the problem, purpose, objectives, research questions, scope, significance, limitations, assumptions and conceptual framework of the study.

1.2 Background to the Study

Breast cancer is the second most common cancer found among women, second only to skin cancer (Cancer Facts & Figures, 2011). It is the second leading cause of cancer deaths among women in the United States, and accounts for 25% of diagnosed cancers (Cancer Facts & Figures, 2011). Breast cancer is the most recurrent malignancy in women and the second most leading cause of death after lung cancer in the United States (U.S. Breast Cancer Statistics, 2012). In 2006, there were approximately 2.5 million women living with a history of breast cancer (Cancer Facts & Figures, 2011).

Breast cancer is the leading cause of mortality among the different kinds of cancer, and was responsible for about 63,100 deaths in Africa in 2012 (Parkin, Bray, Ferlay and Jemal, 2012). It is the second most common type of cancer among women in most countries in Africa. It comes second after cervical cancer (Vanderpuye, Olopade and Huo, 2016). According to the world health organization, the incidences of breast cancer are on the rise in the continent. In 2012, 522,000 cancer related deaths were recorded,

with majority of them coming from Sub Saharan Africa (WHO, 2013). According to the WHO report, the 5-year survival rate of breast cancer in Sub Saharan Africa is less than 40%, while the same rates in developed countries like the USA is 86%. Mutebi and Edge (2014) noted that much of the cancer ailments in Africa are usually in advanced stages at the time of discovery. Evidence from Cameron, Malawi, Central African Republic, South Africa and Tanzania show that most cases of breast cancer are detected late in most African countries (Kohler, Gopal and Miller, 2016).

According to Trimble (2016), several factors account for the late presentation of cancer patients for diagnosis. Some of these factors include poverty, lack healthcare facilities, low staffing and limited number of community healthcare workers. Pace and Shulman (2016) calls for awareness programmes and preventive measures to reduce late diagnosis due to late presentation by the patients. Radiology services for cancer management including the various diagnostic and therapeutic instruments for cancer management are also limited in Sub-Sahara Africa.

The highest prevalence rates of breast cancer are noted in East, North and West Africa. According to Enow, Ndom and Doh (2012), there is little available information from sub-Sahara Africa regarding the prevalence of breast cancer among women. Some of the countries lack cancer registries and have limited data on breast cancer.

Omaka-Amari, Ilo and Nwimo (2015) assert that 30 out of every 100,000 women suffering from breast cancer in Sub-Sahara Africa have HIV associated with it, and South

Africa tops the list. A study conducted by Reddy, Ebrahim and Singh (2017) in South Africa showed that HIV positive patients have higher risks of developing breast cancer. This could be as a result of the weakened immune system that becomes vulnerable to breast cancer.

Kenya has not been left out in breast cancer prevalence cases. About 40,000 new cases and 28,000 cancer deaths occur each year (Ferlay, Soerjomataram and Ervik, 2012). Cancer is the third most common causes of death after infectious diseases and cardiovascular diseases. Like other cases in Africa, Kenya Medical Research Institute contends that over 80% of the cases reported in the country are diagnosed at advanced stages (Republic of Kenya, 2011). This situation, coupled with shortage and uneven distribution of cancer diagnosis and treatment facilities, equipment and personnel implies that cancer management becomes a real problem in the country.

Based on 2002 data from the Nairobi Cancer Registry (2006), of all the cancers registered breast cancer accounted for 23.3%, cervical cancer for 20% and prostate cancer for 9.4%. This therefore implies that breast cancer is the single most prevalent of the different kinds of cancer cases in Kenya. According to the regional cancer registry at Kenya Medical Research Institute, about 80% of reported cases of cancer are diagnosed at advanced stages, when very little can be achieved in terms of curative treatment (Republic of Kenya, 2011). This is largely due to the low awareness of cancer signs and symptoms, inadequate screening services, inadequate diagnostic facilities and poorly structured referral facilities. The country has few cancer specialists who are concentrated in a few

health facilities in Nairobi. This makes it difficult for a great bulk of the population to access cancer treatment services resulting in long waiting causing some previously curable tumours to progress to incurable stages.

The most common surgical treatments for the disease are mastectomy and lumpectomy (Moorey, 2007). Surgery and accompanying radiation can result in scarring and tenderness, as well as changes to breast size, shape of the chest wall and overall torso symmetry (Piot-Ziegler, Sassi, Raffoul and Delaloye, 2010). These changes would definitely imply that BCSs may no longer use the clothes they had before undergoing the surgery, and may therefore require an entirely new outfit that suits the new changes in body shape and size. The BCSs may therefore need to have special clothes to accommodate their new posture without revealing too much that they may be lacking.

Women who have had a mastectomy feel they do not match societal notions of idealized female figures (Beckjord and Campus, 2007). Consequently, most of them opt to wear breast prosthesis and alter their clothing choices accordingly. Some wear high necklines to cover cleavage in order to present a traditional female aesthetic. In either case, it is easier for women that have undergone a mastectomy to achieve a positive attitude towards their appearance through daywear than with sleepwear, and traditional nightgowns may negatively impact self-esteem, body image and sexual quality of life because they cannot easily disguise missing or asymmetrical breasts (Emilee, Ussher and Perz, 2010).

Clothing can generate social approval and psychological satisfaction (Chowdhary, 2008). Clothing attributes play an important function for the post-mastectomy woman as fit, fabrication and comfort play important roles in appearance management (Chowdhary & Ryan, 2003). The consideration of a clothing item's fit begins when the garment style is selected. The elements of design that include line and color can be combined to create suitable visual and structural fit of the garment. Line can lengthen (vertical), shorten (horizontal), or shorten and widen (diagonal) and thus work with figure variations to disguise irregularities and lead the eye up to focus attention on facial features rather than the area of breast amputation (Rasband & Liechty, 2006).

Breast Cancer Survivors are faced with a number of clothing related issues as they attempt to live normal lives. Most of these challenges affect their external appearance as they may need specialized clothing styles, fabrics and other needs. This study therefore aimed at determining the clothing challenges faced by the BCSs in their bid to cope with their daily chores.

1.3 Statement of the Problem

The treatment of breast cancer has major physical impacts on the patient with the first physical concern being surgical procedures, followed by adjuvant therapies and radiation therapy. The BCSs experience physical, psychological, behavioural, and biological changes that make them become more sensitive about their bodies and image. This is due to the traumatic and dramatic body changes experienced during the process which to some extent trigger negative thoughts and feelings in many BCSs. Scars from breast

cancer surgery and reconstructive breast surgery impact on clothing selection for subsequent concealment of scars. The entire recovery process poses major challenges to the recovering patient as the BCSs may not fit into their existing clothes previously worn before the onset of cancer. They may need specially made clothes to conceal some of the aftermaths of the surgery. While these may be immediately observable post-surgical challenges, due to the fact that breast cancer disease is not selective and affects any member of the society irrespective of their socio-economic status, the disease may pose other more challenges to the recovering BCSs. This study therefore aimed to determine the challenges related to clothing and general body covering apparels faced by breast cancer survivors, in their endeavour to resume their normal life following surgery.

1.4 Purpose of the Study

The purpose of this study was to assess the clothing challenges faced by BCSs from selected hospitals namely Kenyatta National Hospital, MP Shah, Nairobi and Aga Khan University Hospitals in Nairobi County, Kenya.

1.5 Objectives of the Study

This study was guided by the following objectives:

1. To determine the physical challenges faced by breast cancer survivors.

2. To examine the challenges posed by breast cancer treatment path with regard to clothing procurement for breast cancer survivors.

3. To establish the challenges posed by fitting room setting where breast cancer survivors try out and select clothes to conceal surgical scars

4. To assess breast cancer survivors' awareness of their clothing needs.

1.6 Research Questions

This study was guided by the following research questions:

1. What are the physical challenges faced by breast cancer survivors?

2. What are the challenges posed by breast cancer treatment path with regard to clothing procurement issues of breast cancer survivors?

3. What are the challenges posed by fitting room setting in the selection of retail establishments where breast cancer survivors shop for clothing?

4. Are the breast cancer survivors aware of their clothing needs?

1.7 Scope of the study

This study focused on BCSs from selected hospitals in Nairobi, who had been discharged at least three months prior to the study. Only four hospitals offered fully fledged cancer treatment in Kenya, namely Kenyatta National Hospital, Nairobi Hospital, Aga Khan Hospital and MP Shah Hospital.

Other hospitals that offer some aspects of cancer management include Coast Province General Hospital, Beacon Health Services, Cancer Care Centre, Kijabe Mission Hospital, Mater Hospital, Moi Teaching and Referral Hospital, Tenwek Mission Hospital,Nairobi Women's Hospital and Texas Cancer Centre which offers cancer screening and treatment services. These hospitals do not provide all services necessary for cancer treatment and were therefore not considered. The study was concerned with the BCSs and not

necessarily the kind of hospital from which the patient was treated. As such, there was no attempt to classify cancer survivors in terms of hospital of treatment.

1.8 Significance of the Study

In general, this study identified challenges faced by BCSs with respect to their clothing needs following the alteration of their body shapes due to treatment procedures. This knowledge will be useful to BCSs themselves, family members of the BCSs, clothing stores and cancer management hospitals to improve the sense of wellbeing of the BCSs.

The BCSs would know in advance the challenges they are bound to face regarding their clothing requirements, and would therefore be better prepared to face them. They may use the study recommendations to make plans on the kind of clothing to purchase and the styling modifications necessary to suit their new shapes. Families of BCSs would benefit from the study by getting the right information that can guide them in the purchase of the right kind of clothes for the survivors. Family members of BCSs would know the clothing needs of the survivors considering that the specialized clothes needed by the survivors may be more expensive than the ordinary clothes of the same quality. Breast cancer treatment hospitals will also benefit from the study's findings through getting information that would help to educate, and implement clinical interventions to support the survivors as they struggle with the physical, psychological and appearance-related aspects of breast cancer treatment. The Ministry of Health is expected to benefit from this study as it may come up with a policy to create awareness programmes that would educate BCSs about their clothing needs and where to get them. The Ministry will also be

able to create subsidies for BCSs so that they can acquire prostheses and mastectomy brassieres cheaply in government hospitals.

Fashion designers and tailors are expected to get useful information that can help them develop designs that would fit the requirements of BCSs with minimal adjustment. Results from this study are also expected to inform the apparel industry in meeting needs of BCSs and assist retail shops in providing an environment conducive for clothing selection specifically in the fitting room. Psychological counsellors who counsel cancer patients are expected to get the necessary information needed when counselling BCSs on their clothing needs before their discharge from hospital.

Finally, results from this study will form a basis for further research and also act as a source of reference for other researchers, besides adding new knowledge to academicians who may wish to advance this knowledge to a higher level.

1.9 Limitations of the Study

This study was limited to BCSs that have been discharged at least three months prior to the study from the targeted hospitals only and therefore a generalization to those treated in other facilities can only be treated with caution as they may not necessarily be similar. Further, it was limited to BCSs only and therefore a generalization to other types of cancer survivors can only be done with caution, as the findings may not necessarily represent them.

1.10 Research Assumptions

This study assumed that, after at least three months of discharge, the BCSs had recovered enough and spoke about their challenges without fear, and were bound to provide accurate information to the researcher.

1.11 The Conceptual Framework

The conceptual framework of this study reiterated that a number of issues arise when BCSs try to find clothing to suit their bodies after surgery as they resume their lives after undergoing cancer treatment. These include; physical factors, clothing awareness requirements, cancer treatment path and fitting room setting. Beard's framework (2011) stipulated four steps namely identifying that there is a special need that includes concealment of scars, information acquisition that includes discharge instructions that are inclusive of garment apparel needs, identification of necessary clothing features and the actual garment acquisition that would involve garment creation, garment selection in special catalogues or buying from ready-to-wear shops and adapting the garment as needed. Beard's framework in this study has been modified to include four steps; fit, comfort and aesthetic concerns, fitting room setting, clothing awareness and the cancer treatment path as it affects the final body shape of the BCSs, which eventually affects the survivor's sense of self-esteem and areas of social functioning. Breast conserving treatment includes lumpectomy, an operation in which the breast lump, along with a portion of the normal tissue around it, is removed. Non-breast conserving surgical treatment includes simple mastectomy, in which the total breast is removed but does not

include the lymph nodes under the arm or the muscle tissue beneath the breast itself. The

interrelationship between the variables is depicted in Figure 1.1.
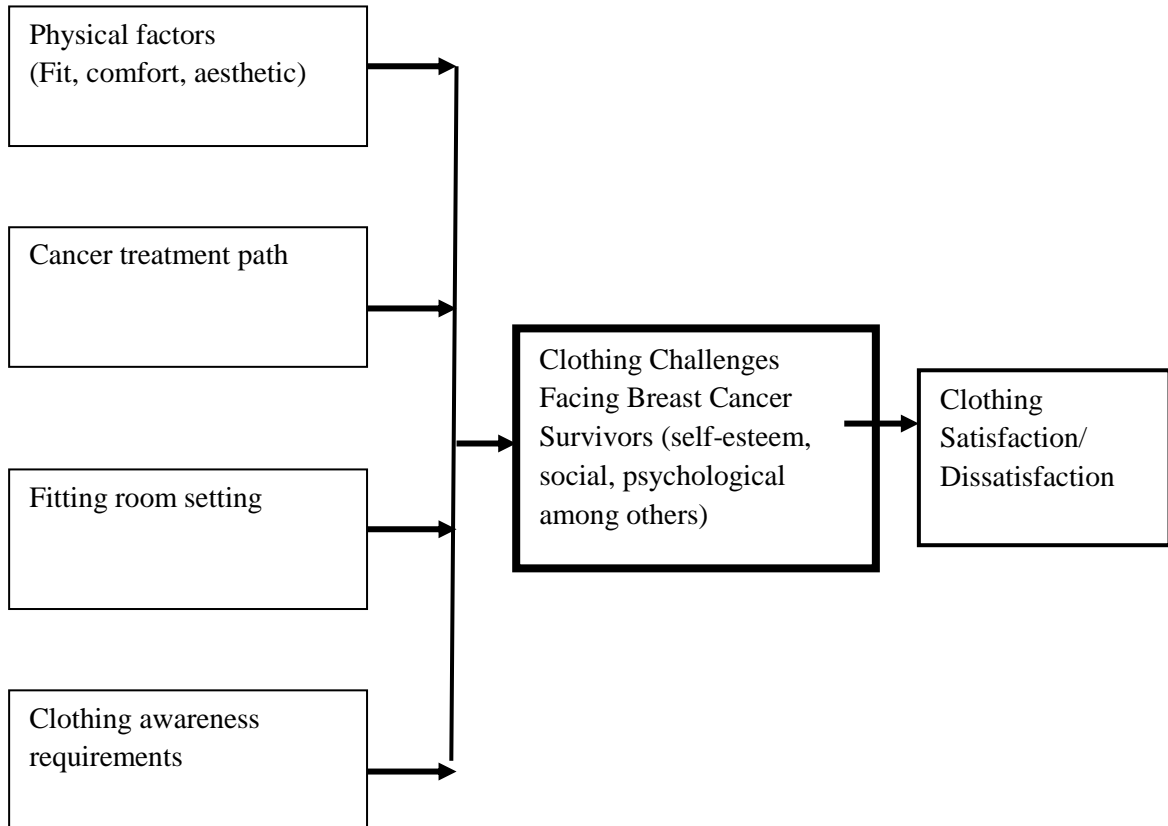
Figure 1.1: Conceptual Framework Showing Clothing challenges facing BCSs

Source: Modified from Beard (2011)

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing information related to the study. The review is organised into sections guided by the study objectives.

2.2 Aesthetic, Style and Fabric Selection Concerns of Breast Cancer Survivors

2.2.1 Aesthetic Concerns

Research has revealed that fashion psychology enhances relationships between self-esteem, looking good and feeling better. The development of one's personal style or appearance is linked with the desire to achieve society's cultural beauty ideal (Rudd and Lennon, 1994). Clothing specially designed for and worn by breast cancer patients can improve body image and result in a more positive attitude towards body and self (Baxter, Goodwin, McLeod, Dion, Devins and Bombardier, 2006). For example, investigations into post-mastectomy clothing preferences indicate that women with mastectomies were more satisfied with their bodies when clothed than when unclothed (Chiweshe, Boll, Lambert, Cardinale and Wong, 2005). Paek (2001) and Jackson (2004) found that after medical issues, the most critical issue after surgery was clothing, followed by social issues.

Although early detection of breast cancer contributes to less invasive surgical procedures and less invasive treatment, Breast cancer survivors (BCSs) must still deal with many

changes on the way their body looks and functions. Treatment for breast cancer creates a struggle with fit, comfort and aesthetic concerns related to apparel post-surgery (Jackson, 2004). Although there are many common concerns with post-mastectomy women, the different psychosocial stages are uniquely experienced by post-mastectomy women. This unique path influences the clothing needs and desires of BCSs as they cope with lifestyle demands and try to find some sense of control to take a more active role in what is impacting their lives.

2.2.2 Style Concerns

Clothing attributes play an important function for the post-mastectomy woman as fit, fabrication, and comfort play important roles in appearance management (Chowdhary & Ryan, 2003). The consideration of a clothing item's fit begins when the garment style is selected. The elements of design that include line and colour combine to create the visual and structural fit of the garment. Line can lengthen (vertical), shorten (horizontal), or shorten and widen (diagonal) and thus work with figure variations to disguise irregularities and lead the eye up to focus attention on facial features rather than the area of breast amputation (Rasband & Liechty, 2006).

Garment design may be based on a close or an easy fit. A close fit may be too restrictive for the early post-mastectomy woman who has a new surgical scar, or one who is experiencing Post-Mastectomy Pain (PMP) as well as concerns for lymphedema. A close fit that is very form-fitting may never be a satisfactory garment. Waist details, darts and curved seams, and shaped insets may all create an undesired constrictive figure. An easy

fit can also camouflage the figure beneath. Controlling fullness by using soft gathers, shirring, release tucks, or pleating rather than darts or fitting control seam may be design details for consideration (Kadolph, 2007).

2.2.3 Fabric Selection Concerns

According to Beard (2011), clothing needs to move with the body and care needs to be taken not to constrain the chest wall where surgery has occurred or the arm on the surgical side with oedema concerns. Thus, the selection of fit, style and bodices are important considerations. The garment profile and type of fabric control the amount of ease that is allowed for movement and overall fit.

While fabric selection is not critical to the fit of a garment, the addition of a stretch fiber such as Lycra can alter the amount of ease offered by the garment and influence how closely it clings to the body. Early post-mastectomy women may need to protect surgical incisions, contend with skin irritations from radiation, and counter PMP discomfort (Jackson, 2004).

A clinging type fabric tends to define the shape of the body even if the overall silhouette is loose. General principles of design would dictate that heavy or short figures would look best in solid colours, vertical lines, curving lines and random design motifs (Beard, 2011). Larger prints, plaids, or horizontal type designs work better on the slender well-proportioned figure. Indefinite outlines can break up space and direct where the eye goes. Careful fabric and print selection can visually move the eye away from breast amputation and swelling issues (Jackson, 2004).

Texture in fabrics (heavy, bulky, fuzzy fabrics) can be used to create optical illusion, absorb light to make figure areas less noticeable, and add emphasis to areas of the figure (Rasband & Liechty, 2006). If texture is used carefully, it can hide figure imperfection and enhance favourable figure variations. Careful selection in relation to roughness or smoothness, and hardness or softness will be important considerations in the immediate post-operative period. This careful selection will protect skin from potential irritations or increase of discomfort from post-mastectomy pain (Kadolph, 2007). While there are many common concerns with post-mastectomy women, the unique path that different psychosocial stages of post-mastectomy women are on will influence their clothing needs and desires as they cope with lifestyle demands (Sammarco, 2001).

2.2.4 Clothing Awareness Requirements for Breast Cancer Survivors

Having appropriate foundational information regarding clothing and prostheses may help women with their psychological well-being post-surgery as it relates to their physical and psychological rehabilitation. Appearance is a major issue and appearance adjustment starts with what is worn in the hospital post-surgery. Appearance issues continue with immediate post-hospital needs while receiving postoperative care and then long-range needs for managing issues with scarring, use of prosthesis, and intimate wear. Addressing the apparel informational needs is an important segment of rehabilitation for women who are post-mastectomy to successfully cope with the experience of breast cancer.

According to Gregor (2001), patient education has been seen as a nursing function from the earliest days of the profession. For the last 35 years in nursing, patient teaching has been the subject of substantial discourse in the nursing profession with usage of descriptive terms such as systematic, rational, well planned, and nursing controlled. Patient education is considered an important aspect of patient care and is related to patient satisfaction, healthcare provider performance, and clinical outcomes (Shuilain, Stuenkel, & Rodriguez, 2009; Zavala & Shaffer, 2011). Patients today are discharged from the hospital quickly as hospitals strive to have efficient utilization of their services with the shortest length of stay, which challenges healthcare professionals to provide consistent high-quality care.

The reality of the healthcare system in the United States is that patients are often discharged before they have made a full recovery (Wyatt, Donze, & Beckrow, 2004). This means that there is essential knowledge and skill that the family and patient must have to resume care and prepare them for challenges faced in the home setting after discharge (Johansson *et al*., 2004). For the breast cancer patient, regardless of what type or phase the treatment is in, the expected outcome is optimal physical and psychosocial function. There are not only physical concerns for patients with breast cancer, but psychosocial issues that they will face that relate to body image and appearance management (Wyatt *et al*., 2004). Discharge instructions should provide effective strategies to patients that enhance their physical and psychological post-operative recovery (Lo, Stuenkel, & Rodriguez, 2009).

Effectual patient education at discharge that is holistic in nature is a challenge. Nurses must assess, care for and prepare patients for discharge, all within a very compressed period of time (Ben-Morderchai, Herman, Kerzman, & Irony, 2010). Strategies that are used to prepare and teach discharge information are required to assure the quality and expediency of the information for patients after they leave the acute care setting (Rhudy, Holland, & Bowles, 2010). Discharge preparation literature reveals a consensus that the continuum of care from the acute care setting to the home is not always easy and is often a challenge to patients (Santo, Purden, & Ranguay, 2008). To meet such a challenge, it is crucial that nurses be effective in patient teaching.

Since clothing technology is such a crucial process to the woman who is post-mastectomy, importance should be given to the special clothing needs of this population. The strategy for looking at clothing for special needs was addressed by Chowdhary (2002) in her four-pronged education model. This model outlined the process for providing needed information and the path to garment acquisition when addressing special needs clothing. In this education model, Chowdhary (2002) defined four steps as outlined below:

Identify that there is a special need. For post-mastectomy women this would include clothing for scar concealment, lymphedema, and appearance management. Information acquisition, which would include printed material, audio-visual material and live interaction. For post-mastectomy women, this would include discharge instructions that are inclusive of garment apparel needs. Crystallize the process, which would include

identifying necessary clothing features needed. For post-mastectomy women this would include clothing relevant to the treatment process and for ongoing appearance management as well as assisting in conceptualizing the dress and body interaction. The actual garment acquisition process. For the post mastectomy woman, this would include either garment creation, garment selection in special catalogues, or buying from ready-to-wear and adapting the garment as needed (Chowdhary, 2011).

These four steps in the education model involve the assembling of relevant apparel information to meet the needs of BCSs who otherwise struggle to find necessary information to meet their clothing engineering needs (Jackson, 2004).

Information has an empowering effect and helps cancer patients to take control of their recovery process when requisite information is made available. However, healthcare professionals' perception of the informational needs of patients is not always accurate. Eyles, Skelly, and Schmuck (2003) found that it was essential when developing patient education materials to involve patients in the process. Written information given at discharge can have a major impact on the patients for whom it was created. Involving patients in the discharge process, including the development of teaching materials, was found to improve satisfaction, decrease anxiety, improve coping, and ease the adaptation of patients (Driscoll, 2000). Discharge information guides the patient through all of the transitions that occur after leaving the acute care setting (Santo *et al*., 2008). Women who are post mastectomy need to be included in the process of developing discharge instructions that meet their contemporary apparel education needs. This ensures that all of

the clothing challenges that are faced by women as they go through the treatment process are included and adequately addressed.

The following areas of clothing concerns were cited by one or more participants in Jackson's (2004) study: information on bras for prosthesis; clothing issues to expect throughout the treatment process; fabric selection; style selection; tips on alteration; training on clothing adjustments; less known sources for purchasing garments to accommodate post-surgery needs and specific categories of clothing that include swimwear, eveningwear and nightwear. Information relating to the mentioned issues therefore needs to be transmitted to BCSs before they are discharged from hospital to recover from her home setting.

2.2.5 Clothing and Breast Cancer Treatment Path

According to Beard (2011), surgical treatment for breast cancer includes both breast conserving and non-breast conserving modalities. Breast conserving treatment includes lumpectomy, an operation in which the breast lump, along with a portion of the normal tissue around it, is removed. This type of surgery is often followed by radiation treatment and/or chemotherapy with its accompanying hair loss. Another operation that is breast conserving is partial (segmental) mastectomy (quadrantectomy), in which more of the breast tissue is removed and again possibly followed by radiation therapy and chemotherapy.

Non-breast conserving surgical treatment includes simple mastectomy, in which the total breast is removed but does not include the lymph nodes under the arm or the muscle tissue beneath the breast itself. One or both breasts may be removed. Modified radical mastectomy is an operation in which the entire breast is removed along with some of the lymph nodes under the arm. This is the most common when the whole breast is being removed. Radical mastectomy occurs when the removal is extensive and includes the entire breast, lymph nodes and the chest wall muscles under the breast (American Cancer Society, 2009). Non-breast conserving surgeries may be followed by radiation therapy and chemotherapy.

While radical mastectomy was the surgical treatment of choice initially, this surgery is rarely the operation of choice today because the less-invasive modified radical mastectomy has been proven equally successful. As a result, every effort is being made by surgeons to use breast conserving surgeries whenever a less invasive approach is indicated from the diagnostic testing (American Cancer Society, 2009).

The nature of the treatment path taken for the individual breast cancer patient determines the final appearance of the patient after recovery. The skin incisions for a mastectomy vary and are chosen based on the type of tumour, quadrant location of the tumour, facilitation of incision closure, and cosmetic implications. The remaining body configuration will vary by the type of surgery and the closure technique that was used (Jeziorski *et al*., 2007).

The mode of treatment path adopted for breast cancer has direct effect on the clothing challenges of the surviving patient. The kind of clothes purchased depends on the nature of treatment. For instant, patients who undergo lumpectomy will require less covering clothes compared to those who undergo mastectomy.

Post mastectomy women who have experienced non-breast conserving treatment may elect to continue with breast reconstruction surgery to rebuild the breast from body tissue. The breast mound is created to be approximately the same size and shape as it was prior to surgery. The surgery entails transplanting tissue from either the abdomen or upper back. The remaining body configuration will vary by the type of surgery and closure technique that is used (American Cancer Society, 2009). Accordingly, the garment fitting issues will vary according to the incision performed and extent of surgery.

In addition to surgical treatment for breast cancer, adjuvant therapies include chemotherapy, hormone treatments and radiation therapy. These procedures used to treat breast cancer leave perceptible, if not conspicuous, changes within the body, including lymphedema with resultant swelling of the arm, loss of body heat regulation, reduced mobility of upper limbs and torso, skin sensitivities and early onset of menopause (Golshan & Smith, 2006). Clothing fabrics must therefore be selected that can accommodate the swelling, retention of body heat and with little chances of skin irritation.

2.3 Challenges of Fitting Room Setting for Breast Cancer Survivors

In order for retailers to maintain good market performance, the customer should be served in a manner to attain customer loyalty. In order to attract and retain BCSs as customers, the retailing environment should be suitable for one of their newly acquired basic needs: the need to privacy that enables concealment of scars resulting from the effects of breast cancer surgery. According to Ghosh, Tripathi, & Kumar (2010), it is very important that, for retailers to continue to garner customer loyalty, the retailers should continually respond to the demands of the consumers. With continued improvement in breast cancer survival rates, more women are living longer with a variety of post-treatment sexuality and intimacy issues, which also affects their quality of life (Huber, Ramnarace and McCaffrey, 2006). This increased number of BCSs forms a large target group that clothing entrepreneurs can reap heavily from. But this is only possible if the entrepreneurs can provide them with the services they need – a suitable fitting room setting that allows for accurate dimension measurements while at the same time, does not allow for exposure of their surgical scars to the rest of the public.

2.3.1 Fitting Room Atmospherics

Fitting room atmospherics can affect time and money that a consumer spends in a store. A pleasant environment in the fitting room increases the time the consumers are likely to spend in that area, which results to more money spent for more time used. The decision to purchase most often occurs in the fitting room (Wilson, 2007). The fitting environment can be used as a tool for market differentiation and can be an important marketing

strategy to the large target market of women who have survived breast cancer (Turley & Milliman, 2000).

2.3.2 Age Appropriateness

The fashion retail industry has a history of being youth-focused but is seeing the need to expand focus to generational markets (Retail Clothing Business Plan, 2011). Clothing retailers address different segments of the population through targeting a younger demographic and the middle-aged woman. However, there is a growing population of patrons who are older and this segment of shoppers is expected to grow significantly. Among this group of women targeted by the apparel industry are the breast cancer survivors. According to Cornforth (2009), there are a total of 2.5 million women who are post-mastectomy, with 70% of the women over 50 years of age, approximately 23% between 40 and 50 years of age, and the remaining 7% younger than 40 years of age as at January 2006 in the United States of America. These 2.5 million women have specific needs for clothing procurement (Jackson, 2004). From the foregoing, it is evident that majority of post-mastectomy women are over 50 years of age. Clothes designed for post-mastectomy women should therefore consider that majority of the demand would come from this elderly women category of women and therefore design clothes to suit their taste. The younger post-mastectomy women should not, however, be ignored as their population is also significant, though lower than that of the elderly women.

2.3.3 Floor Space

One particular important retail concern of women who are post-mastectomy is fitting room features that allow for selection of appropriate clothing for scar concealment and

image enhancement. To fully comprehend the significance of clothing procurement issues for women who are post-mastectomy, it is vital to understand which attributes of the fitting room setting these women feel directly affect the selection of retail enterprises from which to purchase their clothing. Some of the fitting room settings include space that accommodates limited range of post-surgery motion, subdued lighting that dulls altered skin surfaces, mirror placement for adequate viewing of clothing from all angles, room temperature that meets thermo-comfort needs, privacy, and assistance from knowledgeable and sensitive staff (Beard, 2011).

Underhill (2009) sees the fitting room space as more important than the floor space of the store, and that it is not a convenience for any consumer, but rather is a selling tool that exceeds the impact of displays, windows or advertising. According to Holmes & Smith (2011), customers who try on garments have a conversion-to-purchase rate of 67% as opposed to 10% for customers who do not use the fitting rooms to try on garments prior to purchase. Further, a third of shopping time in an apparel store is spent in the fitting room (Holmes & Smith, 2011). It is in the dressing room that consumers assess their appearance along with the clothing item in relation to design colour and texture, finally deciding whether or not they will make the purchase (Baumstarck & Park, 2010). Thus, it is very important that apparel merchants have a convenient fitting room suitable for the BCSs who, besides the general human preferences for ambience, have salient requirements for privacy.

According to Sharma & Stafford, (2000), the environment created by a store can influence a consumer's decision to visit that store, and can guide the assumptions about the quality of merchandise from these environmental cues (Lam, 2001). The atmospherics of the store, such as the background decoration can trigger a judgment by the consumer about quality of merchandise the store carries as well as the perceived fairness of the price of the merchandise (Babin, Chebat, & Michon, 2004). An environment that creates a positive halo of trying on clothing at home would be considered suitable by many shoppers (Holmes & Smith, 2011). A pleasant retail environment can be a pertinent marketing goal and tool since negative feelings that are experienced during shopping can curtail the trip and ultimately result in leaving the store without making a purchase (d'Astous, 2000). The attributes relevant to the store selection process include the merchandise mix, the services offered and the atmospherics of the store. Meeting the expectations of the shoppers will motivate them toward decisions relating to store patronage (Ghosh *et al*., 2010).

Poor atmospherics can result in lost sales due to its negative impact on the shopping experience (Baumstarck & Park, 2010). Literature revealed that many fitting rooms are small and ill kept with a dreary look caused from discarded clothing; dirty, stained carpet; poor lighting and ill-placed mirrors. In addition, the temperature is often uncomfortably chilly, making it difficult for BCSs to try on intimate apparel (Wilson, 2007a). As studies have noted the time and money that a consumer spends in a store is related to the emotional response that is induced by the environment of the store, and that includes the

environment of the fitting rooms. If there is a positive response to the environment, then more time and money is spent in the store (Vieira, 2010).

From the foregoing, it is clear that the atmospherics of a clothes store plays major roles in determining a customer's decision to make a purchase. It is therefore vital that, apart from the fashion of clothes stored, the atmosphere should be kept attractive to customers. This includes adequate space for free movement without much worry about the possibility of injury, or scratch of the surgical parts for the case of post-mastectomy women.

2.3.4 Fitting Room Lighting

Fitting rooms should be provided with adequate light which should not change the colour of the apparel. Consumers who purchase apparel are concerned with colour selection, and lighting has a great impact on the ability of the consumer to evaluate the purchase (Shoppers Notice Lighting, 2007). Lighting can directly affect the decision to purchase. The use of unflattering fluorescent lighting by itself can cause such a negative reaction towards clothing brought into the fitting room that the consumer may decide not to purchase the garment (Amiel, 2007). Fitting rooms that are most successful in terms of lighting, with clothing colours beautifully rendered, are rooms that are equipped with warm fluorescent and white halogen lighting combination to create direct and ambient lighting (Amiel, 2007).

Fitting rooms need to allow for daylight as well as lighting created in indoor scenarios. There are sources that have come a long way in providing lighting that mimics daylight color or indoor color. Lighting solutions are available such as the Salon fixture, which has a flip switch available to the shopper to change lighting from indoor to outdoor and vice versa (Wilson, 2003). Consumers are thus allowed the opportunity of viewing clothing in the way it will be rendered in the settings in which it will be worn. This is especially important for the post mastectomy woman who has altered skin surfaces that will be rendered very differently in daylight or indoor lighting settings.

Before a customer can decide whether to purchase an item or not, the customer performs personal assessments that include style features, size, colour, fit of the garment and the general overall appearance when the shopper tries on the garment in the fitting room in an attempt to see if the garment complements the shopper. Evaluation of fit and general appearance occurs in front of the fitting room mirror. Single mirrors are a common complaint because the consumer cannot analyze the fit of the garment from all the angles with which the wearer will be viewed (Wilson, 2007b). Multiple mirrors that are placed for strategic multiple-angle viewing allow the shopper to properly analyze the garment. Multi-angle mirrors that are available are often located in communal areas where the shopper must leave the sanctity of the fitting room to assess the fit and appearance of the garment from all angles. For women who are post-mastectomy, multi-angled mirrors are necessities to assess scar concealment with their apparel selections.

Some fitting rooms are void of any mirrors, which also require the shopper to go to communal areas to assess the garment (Amiel, 2007). Assessing scars is a very intimate need of the post mastectomy woman requiring the privacy of the fitting room. It is therefore important that entrepreneurs targeting BCSs should have multiple mirrors strategically placed where the customer can have control of the number of people seeing her when trying out an outfit. For the post mastectomy woman, who is evaluating the concealment of scars and irregularity of silhouette from breast cancer surgery, privacy in the fitting room influences her willingness to shop in a brick-and-mortar setting rather than online or in apparel catalogues (Jackson, 2004). Fitting room has major effects on the choice of places for purchasing clothes for BCSs.

2.4 Functions of Clothing

The primary function of clothing is to improve the comfort of the wearer by providing protection against the weather elements. Clothing provides protection from sunburn in warm weather, and protection from frostbite in cold weather (Balter, 2009). Shelter reduces the need for protective clothing. For example, coats, hats, gloves and other superficial layers are normally removed when entering a warm home. Balter (2009) further states that *c*lothes also reduce risk during activities such as work or sport. Some clothing protects from specific environmental hazards such as insects, noxious chemicals, weather, weapons and contact with abrasive substances. Conversely, clothing may protect the environment from the clothing wearer, as with doctors wearing medical scrubs.

According to Chowdhary (2008), clothing can generate social approval and psychological satisfaction. Clothing also performs a range of social and cultural functions. Clothing can be used to indicate social status and convey individual, occupational, and sexual differentiation. In many societies, norms about clothing reflect standards of modesty, religion, gender and social aspects. They cover parts of the body that social norms require to be covered, act as a form of adornment, and provide an expression of personal taste and style. In Asian societies, clothing may be used to indicate rank or status, for the purpose of decoration as well as for ceremonial use. In several Asian cultures, during a funeral ceremony everyone is supposed to wear all white clothing *(*Hertig, 1969*)*. Everyone wears their traditional clothing but all in white color. This is because white is symbolic of death, heaven, purity. Hertig (1969) further emphasizes thatsome colors such as red are forbidden during funerals because in the Chinese culture red symbolizes happiness yet funerals do not represent happy moments, while in the Indian and Pakistani culture red symbolized life.

Clothes are also used for sexual enchantment *(*Best, 1914*)*. Specific clothes may express the wearer's sexuality that may not be observed when wearing other clothes. Clothes may also be used to express group membership. For instance, the members of Ku Klux Klan (KKK), a hate group organization in the United States, wore a white robe with a long cone shaped hood that covered their face with only their eyes showing. According to Beaudoin, Moore & Goldsmith (2000), clothing is a form of non-verbal communication. Clothing tells something about the person wearing it. Whether intended or not, clothes help make an impression on others. As the nearest environment, clothing affects a

person's physical, psychological and social comfort. Fabric texture (soft, slippery or rough), weight, bulkiness and stretch all contribute to physical comfort. Clothing should not restrict movement or be too tight that it pulls. Psychological comfort comes when one has a sense of wellbeing because the person is confident that his/her appearance is as good as he/she can make it.

Clothing contributes to social comfort when it helps one feel as if he/she fits in with others in a group so that the person can interact easily (Chiweshe, Boll, Lambert, Cardinale & Wong 2005). Clothing can signify membership in a special organization or group. For instance, uniforms have both social and communication functions. Regardless of any disability one may have, they should be able to choose from a variety of clothing styles and fabric that contribute to physical, psychological and social comfort.

For physical comfort, shirts, blouses and jackets that are oversized or have kimono (traditional Japanese garment) or raglan sleeves (extending to collar) or back pleats to allow for shoulder movement. Loose or adjustable waistline elastic allows for expansion but if too tight it can cut blood circulation. To keep warm, laying fabric or choosing quilted fabric with polyester fibrefill is used. To keep cool, light weight absorbent fabrics that breathe to let body perspiration escape are appropriate (Cho, Paek, Davis, & Fredric, 2008).

2.5 Chapter summary and gaps of knowledge

The literature review focused on the aesthetic, style, fit and fabric selection challenges, posed by the breast cancer treatment path, fitting room setting in the selection of retail establishments, the clothing awareness requirements for BCSs and function of clothing. The review showed that all these areas pose some level of challenges to the breast cancer survivors.

Though the review showed that all the foregoing areas and issues pose some level of challenges to the BCSs However, the level to which the factors are a challenge to the survivors was not clearly discernible from the review. Some of the factors may be critical while others may not be. It is also not clear to what extent clothes perform their expected functions on breast cancer survivors, or not. Since clothing is outside the medical realm, those issues are not directly emphasized by the treatment team and thus are inadequately addressed. These therefore formed the gap that the study addressed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methods used in the study. These include the study design, study area, the target population, the procedure for selecting sample for the study, the study sample, study instruments, data collection procedure and data analysis..

3.2 Research Design

This study adopted the Descriptive Survey Design. According to Sekaran and Bougie (2011), a descriptive study is undertaken in order to ascertain and describe the characteristics of the phenomenon under study or of interest in a situation. Since this study aimed at addressing challenges that faced Breast cancer survivors (BCSs) with respect to clothing, the design was deemed the most appropriate for the study. Since descriptive research supports the development of precise measurements and reporting of characteristics of a population of phenomena as explained by Neuman (2003), the design was the most suitable for this study.

3.3 Study Area

This study was carried out in selected hospitals in Nairobi. This was in view of the fact that hospitals with full capacity for cancer treatment are located in Nairobi since not all hospitals offer breast surgery (Appendix IV). There are only four such hospitals and all are located in Nairobi. These are Kenyatta National Hospital, MP Shah, Nairobi Hospital

and the Aga Khan hospital (Republic of Kenya, 2012). From the preliminary investigation about breast cancer survivors, the following information was found regarding the number of breast cancer operations conducted in the last one year (Target Hospitals Records, 2015).

Table 3.1: The Number of Breast Cancer Surgeries Conducted in each target hospital in 2015

S/no	Name of hospital	Number of breast cancer Surgeries
1.	Aga Khan Hospital	15
2.	Nairobi Hospital	15
3.	Kenyatta National Hospital	112
4.	MP Shah Hospital	12
	Total	154

Source: Target Hospital Records, 2015

During preliminary investigations it was found that 3 out of the 4 hospitals surveyed provide psycho-social support to their patients. All the hospitals have established linkages with hospices and support groups as indicated in Table 3.2 below where due referrals and voluntary transfers are made for further psychosocial support. The identified four hospices/ support groups currently contain the membership distribution shown in Table 3.2.

Table 3.2: Cancer Survivors' membership in Hospices/ Support Groups in Kenya

S/no	Name of hospice/ Support Groups	No. of members (cancer survivors) in 2015
1.	Cancer Care Kenya	10
2.	Nairobi Hospice	10
3.	Faraja Cancer Support Trust	28
4.	Slope Cancer Awareness Network (SCAN)	23
	Total	71

Source: Target Hospices/ support Groups Records, 2015

3.4 Target Population

The target population in this study were BCSs who had been discharged from the selected hospitals at least three months prior to this study. This population was selected because the study was to explore the challenges they faced with respect to their clothing. It was hypothesised that such challenges are experienced personally by the BCSs and they can only be expressed by the same people. Further, patients who are still undergoing the treatment could not be studied as they were still pre-occupied with their survival and may not have been thinking of clothing matters as they would still be struggling to come to terms with the surgery. Only the BCSs who have spent a considerable period after treatment can have much experience with clothing problems to be able to effectively articulate the challenges they face when selecting clothing materials that can suit their

newly acquired body structures following surgical operations. According to the Republic of Kenya (2011), breast cancer infection rate is estimated at 34 cases per 100,000 women. Taking the Kenyan population of 40 million and assuming a 50% women population in Kenya, about 20 million people are women in Kenya. Therefore, the expected number of cancer patients was determined as follows: For every 100,000 women, there are 34 cancer patients. From 20,000,000 women, there are 200 groups of 100,000 women. Hence the expected number of cancer patients at any one time would be: 200 groups X 34 patients per every group of 100,000 women. This gives a total breast cancer population of 6,800 women. Hence, the target population is estimated to be 6,800 (Republic of Kenya, 2011)

3.5 Sample Size

The study sample size was calculated using the statistical formula by Wiersma (2000) expressed as follows:

$$n = \frac{Z^2 P (1-P)}{d^2}$$

Where:

n= minimum desired sample size

z= the standard normal deviation set at 1.96 corresponding to 95% Confidence Interval.

p= the proportion of targeted population estimated to have particular characteristics, breast cancer in this case, estimated as 23% of all cancer patients.

q = the remaining proportion (1-p)

d = minimum error, taken as 5% or 0.05

The required sample size was therefore calculated as shown below:

n = $\underline{1.96^2 \text{ x } 0.23 \text{ x } 0.77}$ = 272.14 $\sim$ 272 breast cancer survivors (to the nearest

upper

     0.05^2 whole number)

3.6 Sampling Procedure

The study adopted purposive sampling to select cancer treatment hospitals in Kenya. As indicated earlier there are four fully fledged cancer treatment hospitals and nine others that provide some aspects of cancer related services. The four hospitals are Kenyatta National Hospital, Nairobi Hospital, Aga Khan University Hospital and MP Shah Hospital. Purposive sampling was used to select the four fully fledged hospitals for the study. In a preliminary investigation on the number of breast cancer patients handled by each of the four hospitals, it was found that Kenyatta National Hospital handles the highest breast cancer patients – 112 per year, Nairobi Hospital 15, Aga Khan 15 and MP Shah 12 (Hospitals records, 2015) The four hospitals were allocated samples proportional to the number of BCSs discharged from each hospital within the study period, in the ration of 112:15:15:12. Table 3.3 shows how the sample for each Hospital was determined.

Table 3.3: Sampling Procedure

S/No	Hospital	Sample Determination	Final Sample (Respondents)
1.	Kenyatta National Hospital	112/154 X 272	197
2.	Nairobi Hospitals	15/154 X 272	27
3.	Aga Khan University Hospital	15/154 X 272	27
4.	MP Shah Hospital	12/154 X272	21
	Total		**272**

Source: Target Hospital Records, 2015

To get the specific respondents, the BCSs were captured at two levels: at their respective hospitals as they return for follow-up check and at the hospices where cancer survivors go for support. However, respondents obtained from the hospices were allocated to the respective hospitals from where they were treated.

3.6.1 Inclusion Criteria

The individual respondents were selected on the basis of being over the age of 18, had capacity to speak English or Kiswahili, and had received treatment for breast cancer after consulting the physician at the hospital, in the course of their stay at hospices and social welfare centres. To qualify for the study, each prospective respondent was asked when she was discharged from the hospital. Those found to have been discharged at least three

months prior to the date of study were included while those with discharge periods of less than three months to the date of study were excluded.

3.7Study Response rate

Although the study had proposed a sample of 272 respondents, after the final collection of data, a total of 248 questionnaires were returned. The response rate was therefore as follows:

Proposed sample size   = 272

Number of returned and duly filled questionnaires   = 248

Response rate <u>248</u>   X 100   = 91%

          272

3.8 Data Collection Tools

This study used questionnaires as the main instrument for collecting data (Appendix II). According to Orodho (2005), questionnaires are useful when the study population is large. Questionnaires also have the advantage that they can be used without the presence of the researcher, and provide an even stimulus to large numbers of people simultaneously, providing the investigator with a relatively easy accumulation of data (Saleemi, 2011).

The questionnaires that were used in this study were modified from those developed by (Beard, 2011).However, in case a respondent was not able to respond to the questionnaire due to illiteracy, the same questionnaire was used as an interview guide to pose questions

to the respondent. This enhanced data collection from both literate and illiterate respondents using the same instrument.

3.9 Validity of Research Instruments

The researcher assessed content validity through use of professionals or experts as advocated by Mugenda & Mugenda (2003). In this respect, the researcher discussed the instruments with the supervisor and other lecturers, who were requested to advice on whether the instruments accurately represent the concept under study. Their ideas were considered and incorporated.

3.10 Reliability of Research Instruments

A pilot study was carried out on 10% (30 respondents) of the expected sample. The instruments were issued to a set of BCSs sourced from Reach for Recovery Kenya which is a cancer survivor's support group who were not involved in the main study. The pilot instruments assisted in determining the validity and reliability of the instruments, as well as improving the instruments.

Test-retest method was employed to determine the reliability of data collection instruments. In this case, the research instruments were issued to selected pilot respondents to respond to. The instruments were issued to the same respondents after two weeks. The results obtained by the same respondents in the two tests were correlated to determine the reliability of the instruments. The Spearman rank correlation coefficient (r) between scores for the first test and the second test was determined, which was used to

determine the reliability coefficient of the instruments. A reliability value of 0.74 was obtained, and was considered sufficient for this study.

3.11 Ethical Considerations

Ethical approval was sought and granted by the Institute on Ethics and Research Committees in various Hospitals (Appendix VIII). Further a research permit was issued by (NACOSTI) to carry out this research (Appendix VII). In addition consent was sought from the respondents by requesting them to sign the consent form (Appendix III). The researcher also ensured confidentiality of information provided by the respondent by concealing identity of the respondents completely, and that no other person would access the information provided in the instruments.

3.12 Data Collection Procedure

The researcher sought the survivors returning for medical check-up and on their way out, and asked the patients when they were discharged from the hospital. All patients who had been discharged three months or earlier were asked to help in data collection by filling one of the questionnaires that was issued to her. The returned questionnaires were labelled to show the hospital from which the respondent was treated. The researcher also went to the cancer hospices cum social centres and conducted the study from respondents meeting the requirements of the study. In addition recruitment flyers (Appendix IV) were mounted on the selected Hospitals notice boards to aid in recruitment of Survivors. The study ended when the allocated quota of respondents for each hospital had been attained.

3.13 Data Analysis and presentation

This study yielded both quantitative and qualitative data. Descriptive statistics that included percentages, means and frequencies were used to analyze quantitative data Regression analysis was also used to seek relationships between various variables in the study, whose formula was: $Y = a + bX_1 + cX_2 + dX_3 + eX_4$. Where X_1, X_2, X_3, X4 and X_5 were the variables, while a, b, c, d and e were the constants connecting the variables.

The Statistical Package for Social Sciences (SPSS) version 21.0 (IBM, 2012) was employed to aid in this analysis. Qualitative data was analysed by thematic analysis, content analysis and discussion (Orodho, 2004). Qualitative data analysis is usually based on an interpretative philosophy that is aimed at examining meaningful and symbolic content of qualitative data (Nieuwenhuis, 2007). Thematic analysis (categorization of related themes) involved analysing data guided by the main themes in the study, while content analysis involved examining the intensity with which certain words and points of view were used with their frequency, which was interpreted as a measure of importance, attention or emphasis.

CHAPTER FOUR

RESULTS PRESENTATION

4.1 Introduction

This chapter presents the results of this study.

4.2 Demographic Information

4.2.1 Respondents' Age

From Table 4.1, it is observed that respondents' ages ranged from 25 years to above 55 years, with the highest proportion of Breast cancer survivors (BCSs) falling between 35-44 years (37.9%) while the lowest proportion falling in the age group of 55 years and above (table 4.1). The age group of 25-34 comprised 24.6% of the respondents, while that of 45-54 years had 27.4%. From the results shown in Table 4.1 below, cancer prevalence displays a non-discriminative spread on the basis of age.

Table 4.1: Distribution of Respondents by Age

Age (years)	Frequency	Percentage
25-34	61	24.6
35-44	94	37.9
45-54	68	27.4
55 and above	25	10.1
Total	**248**	**100.0**

4.2.2 Marital Status

This study found that breast cancer attacks anyone regardless of marital status 73% of BCSs were married women, single women accounted for 20.2%, widowed ones were 5.2% while 1.6% of the BCSs were divorcees. Breast cancer prevalence according to marital status is depicted in Figure 4.1.
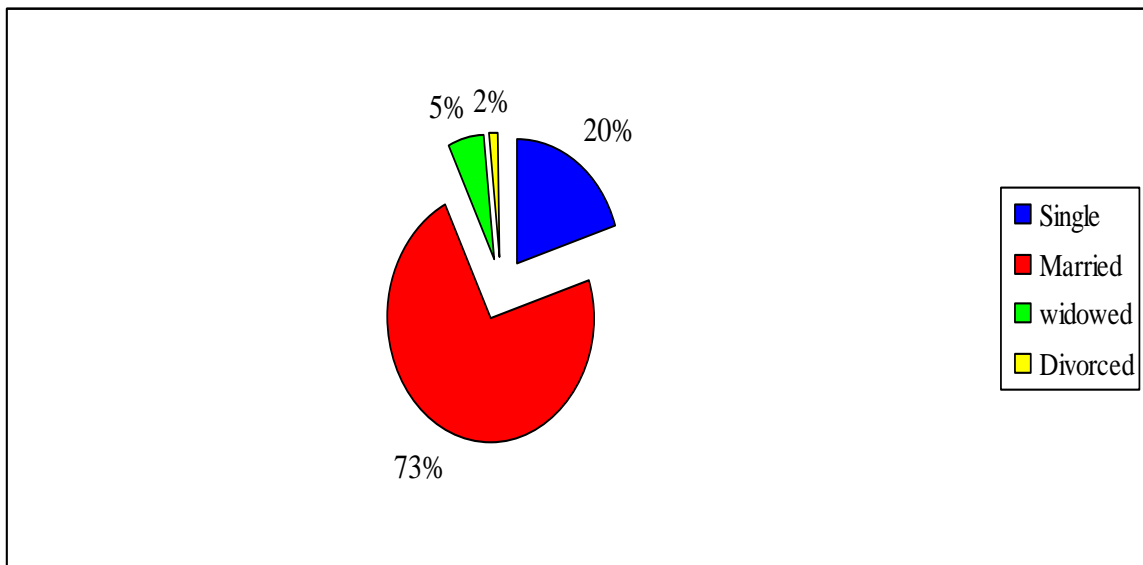
Figure 4.1: Marital status of Respondents

4.2.3 Respondents' Occupation

Respondents had varying occupational status. Results on respondents' occupational status revealed that proportion of self-employed people was the highest (39.1%), government employees accounted for (28.2%), and respondents who were employed by the private sector were (18.2 %) while the unemployed were (11.3 %) as shown in Figure 4.2.
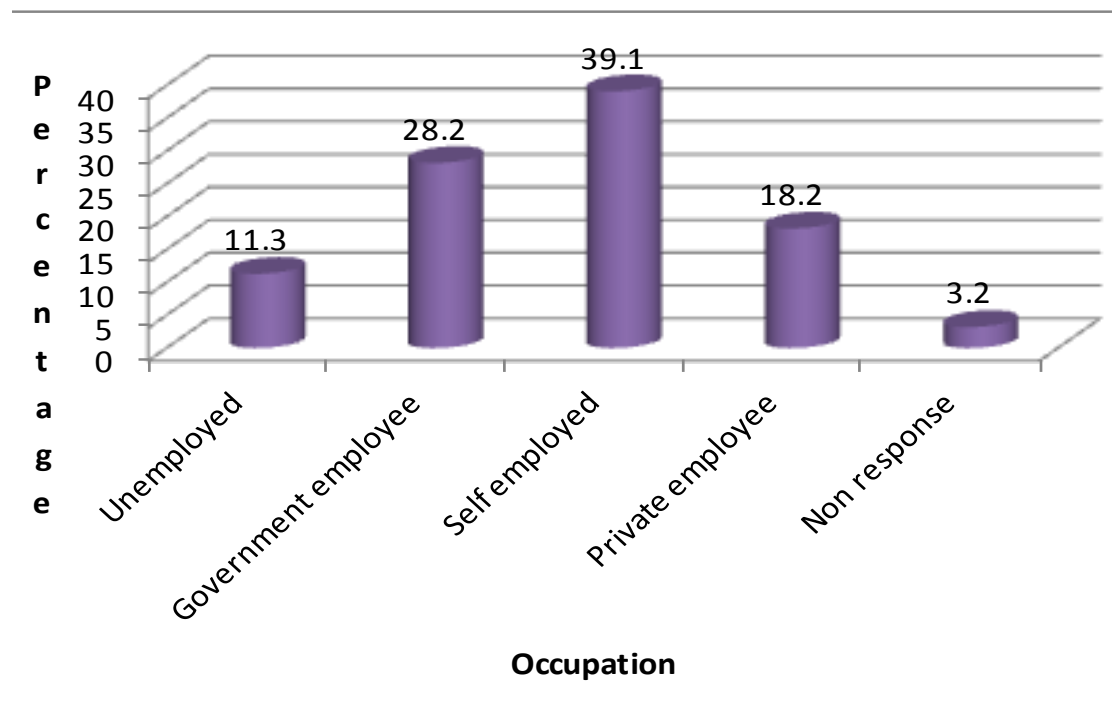
Figure 4.2: Respondents' occupation

4.2.4 Income

This aspect of investigation was rather controversial as 23% of respondents did not answer the question. Probably the respondents did not want to state how much they earn per month, or did not have any tangible regular income and therefore could not respond to the question. The results are presented in Figure 4.3.
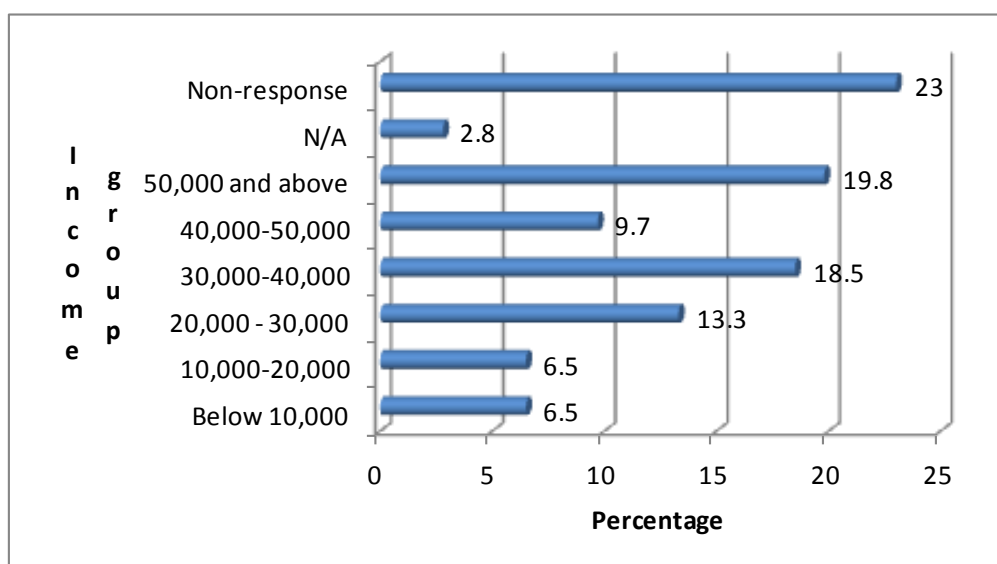
Figure 4.3: Respondents' monthly income

From Figure 4.3, the income of BCSs studied ranged from those without any formal income (the N/A group) to those earning above 50,000/-. Those earning 50,000/- and above were higher than the rest (19.8%) those earning 30,000/- to 40,000/- (18.5%) , 20,000/-30,000/- (13. 3%) while both 10,000/- to 20,000/- and 10,000/- and below groups accounted for 6.5% each. It was also observed that the proportion of respondents who did

not respond to this question, 23%, was higher than the proportion of any of the income groups represented in the table.

4.2.5 Membership of National Hospital Insurance Fund (NHIF)

Respondents stated that membership of NHIF was important since being a member of this body enables one to seek treatment with relative ease as some of the medical costs are offset by funds from this body. In addition by law, all employers are required to register their employees with NHIF and remit subscription monthly. It is observed that 81.5% of respondents were members of the NHIF the public health insurance body that caters for medical expenses of its members. Only 14.9% were not members of the fund while 3.6% did not respond to the question. From this finding, NHIF accommodate both formally and informally employed BCSs. The results are depicted in Figure 4.4.
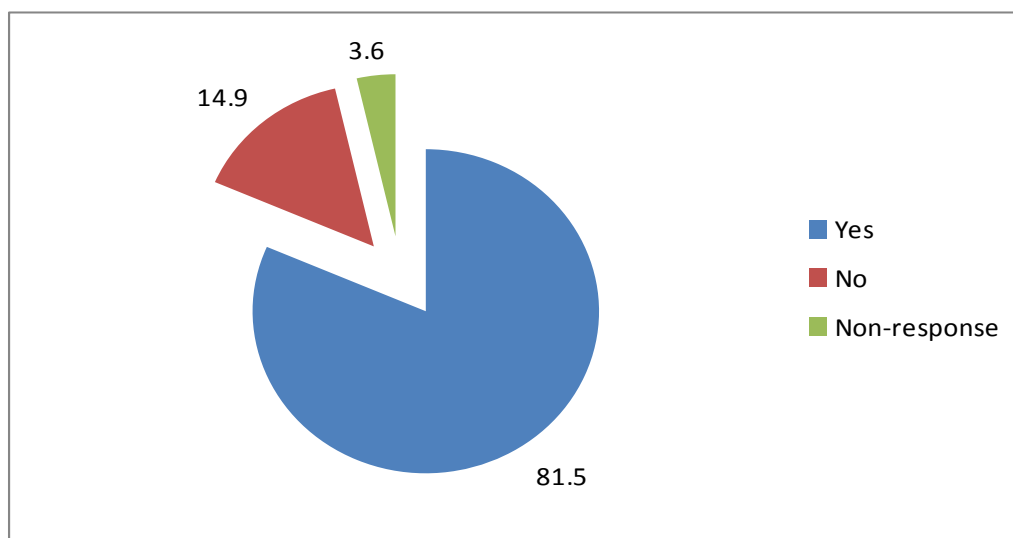
Figure 4.4: NHIF Membership among respondents

4.2.6 Membership of National Social Security Fund

This study investigated the proportion of respondents who were members of the National

Social Security Fund (NSSF), the public pension body that pays some returns to retirees

when they attain the age of 55 years and therefore considered no longer employable. The

number of respondents who were members of NSSF was exactly equal to those who were

not members, at 47.6%. However, 4.8% of the respondents did not respond to this

question. NSSF benefits BCSs since they are able to use some of the money from the

fund for the management of breast cancer.

The results are depicted in Figure 4.5.
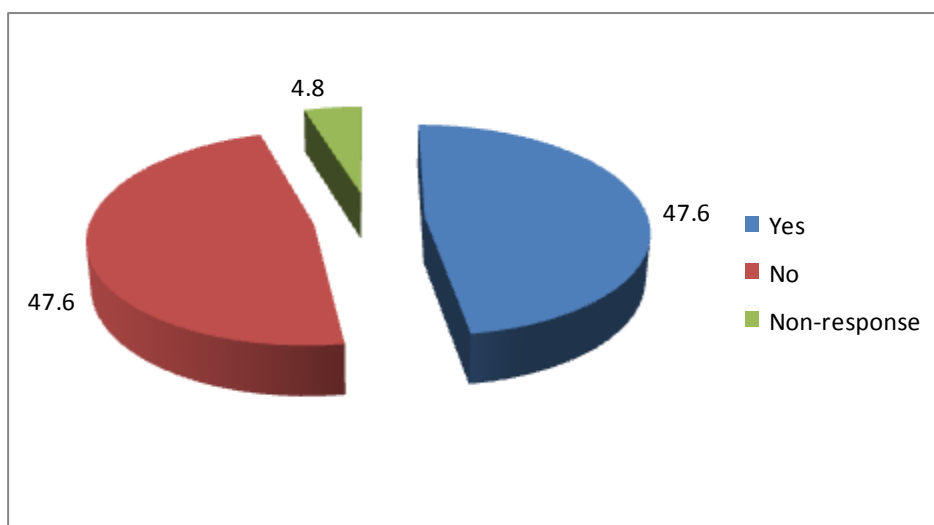
Figure 4.5: Proportion of members of NSSF

4.2.7 Time of mastectomy

There was a lot of variation in the period during which respondents had undergone

mastectomy. The period ranged from 2007 (or earlier) to 2016 the year during which the

present study was conducted. The results of this study shows that 2015 had the highest

number of breast cancer victims operated on, (26.6%) with 14.1% having been operated

on as at June 2016 when the study was conducted, this was followed by 2014 where

19.4% were operated. In year 2011 a total of 9.7% operations were carried out while

2013 and 2007 or earlier had 8.5% each. Year 2009 and 2008 had the same number of

operations 3.2 % while the least number of operations were in 2012 where only 1.4 %

BCSs were operated.

These periods are depicted in Table 4.2.

Table 4.2: Respondents' time of mastectomy

Year	Frequency	Percentage
2007 or earlier	21	8.5
2008	8	3.2
2009	8	3.2
2010	13	5.2
2011	24	9.7
2012	4	1.6
2013	21	8.5
2014	48	19.4
2015	66	26.6
2016	35	14.1
Total	**248**	**100.0**

4.2.8 Money spent on clothes per year

Further, respondents were asked to estimate the amount of money spent on clothes in one year. From figure 4.8, the highest proportion of respondents (42.5%) spends between 5,000/- to 10,000/- on clothing per year, 24% spend over 10,000/- per year while 28.2% spend less than 5,000/- per year.
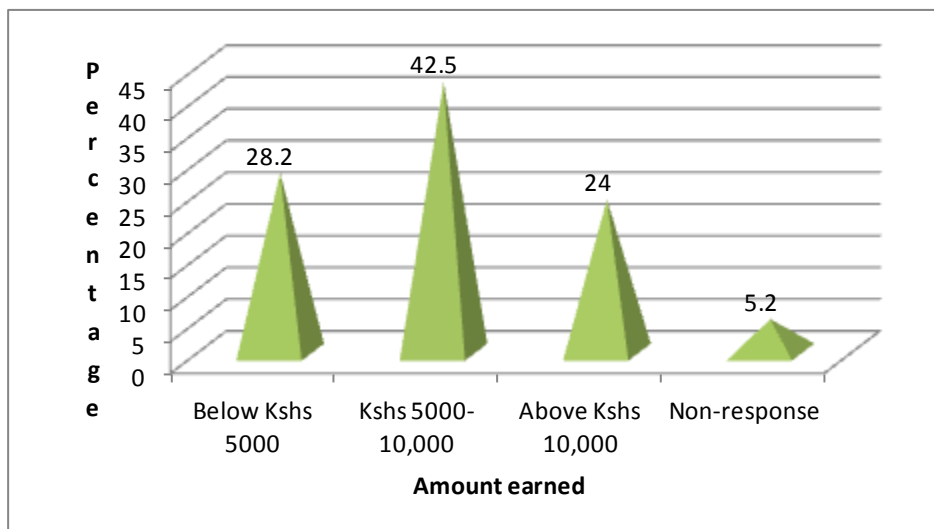
Figure 4.6: Amount spent on clothes by BCSs

4.3 Physical Challenges Facing Breast Cancer Survivors

A number of questions were posed to respondents whose answers could be a pointer to the position of the BCSs in this respect. The first of these questions sought to find out whether respondents had any swelling of extremities especially their hands. The responses are indicated in Figure 4.7.
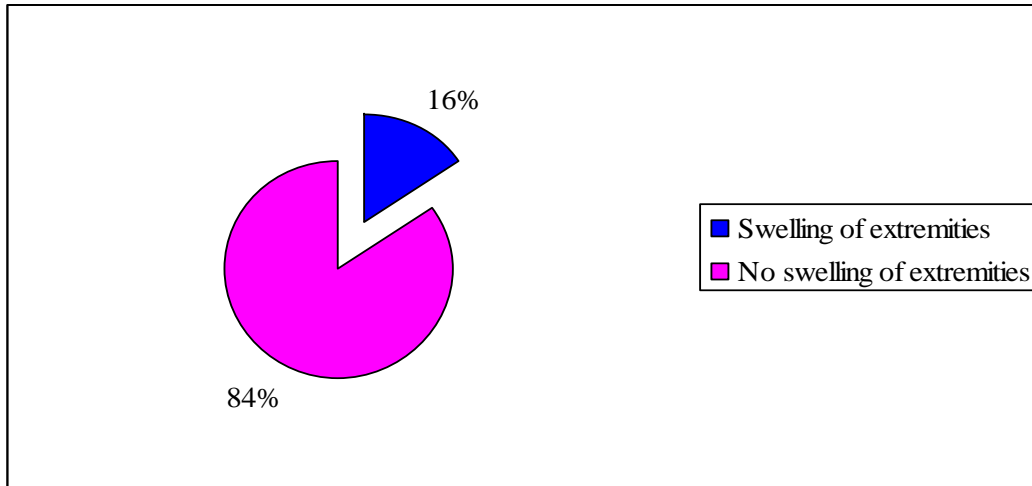
Figure 4.7: Respondents experiencing swelling of extremities

From Figure 4.7, it is evident that a small portion of respondents experienced swelling of extremities. Only 16% of the respondents experienced this condition while the remaining 84% did not experience any swelling.
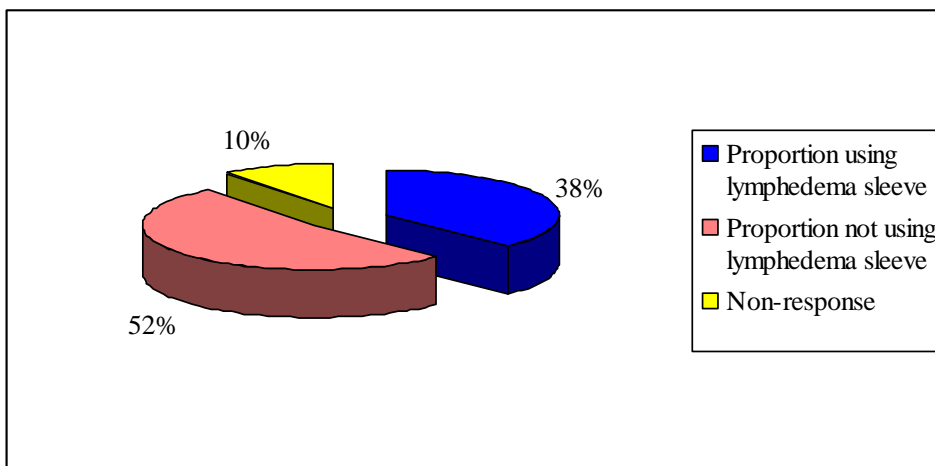
Figure 4.8: Proportion of respondents using lymphedema sleeve

4.3.1 Issues affecting clothing use, selection and purchase

Due to the onset of breast cancer and subsequent surgery, the BCSs have had certain issues regarding their clothing. For instance, a majority (54%) of BCSs would like to wear the same styles that they used to wear before the onset of breast cancer and subsequent surgery (Table 4.3).

Table 4.3: Respondents' views on issues affecting clothing use, selection and purchase (multiple responses given)

Statement	Agreed		Disagreed		Omitted	
	Freq	**%**	**Freq**	**%**	**Freq**	**%**
I would like to wear the same styles of clothes I wore before surgery	134	54.0	101	40.7	13	5.3
I am happy with the fit of the clothes available to buy	91	36.7	141	56.9	16	6.4
Since the surgery, the styles I buy are altered to fit me	121	48.8	93	37.5	34	13.7
I shop in retail stores where I can try on the clothes first	127	51.2	74	29.8	47	19
I shop online as I can't find clothes that conceal my scars	24	9.7	164	66.1	60	24.2

4.3.2 Source of clothes worn by breast cancer survivors

This study sought to determine where the respondents shop for their clothes. The places

identified are presented in Figure 4.9.
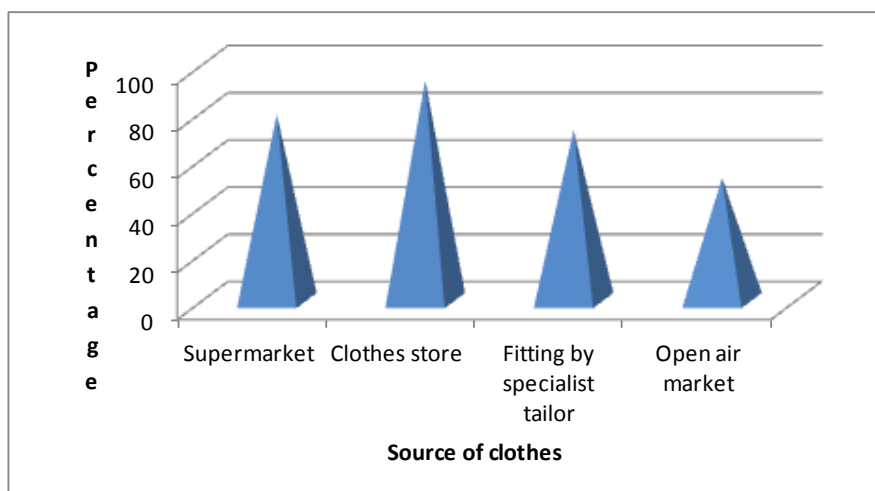
Figure 4.9: Source of clothes worn by breast cancer survivors

Clothes store was found to be the most preferred (93.5%) source of clothes for most

BCSs. This was closely followed by supermarket (79%) fitting by specialist (72.2%)

while open air was preferred by a distant 52%.

4.3.3 Reasons for changing source of clothes

On enquiring why respondents changed the places from where they purchase clothes, a

number of reasons were cited as portrayed in Figure 4.10.
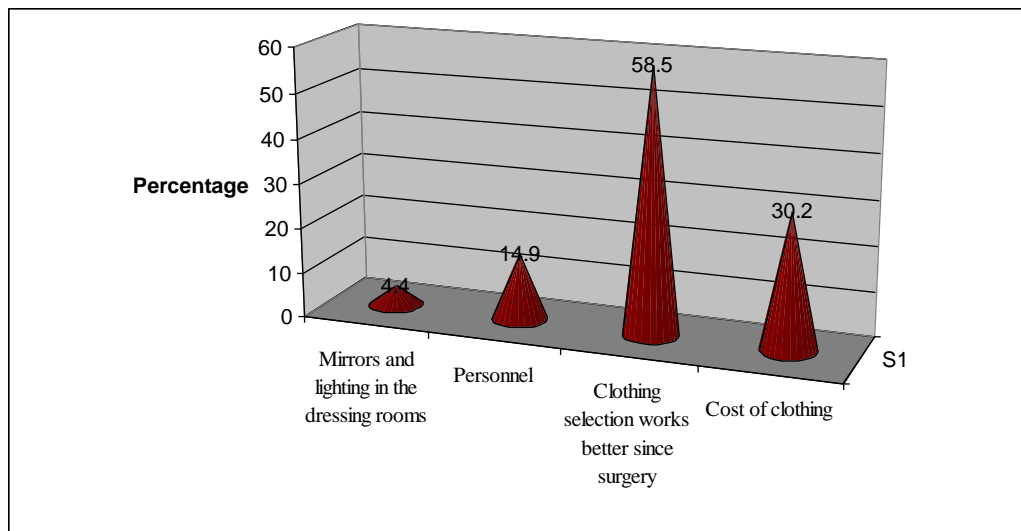
Figure 4.10: Reasons for changing source of clothes purchased by BCSs

From Figure 4.10, it is evident that 58.5% of the respondents changed their point of purchasing clothes due to the need for privacy, 30.2% changed their point of purchase due to the cost of clothing, 14.9% changed because of the personnel in the new place while 4.4% changed their purchase point because there were mirrors and lighting in the dressing rooms of the new points of purchase.

4.4 Challenges Posed by Breast Cancer Treatment Path

The second research question sought to determine the challenges posed by breast cancer treatment path with regard to issues of clothing procurement by BCSs. Out of the 248 respondents who responded to the questionnaires only 4 (1.6%) had performed breast reconstruction surgery. Of the remaining 244, 62 (25%) intended to perform breast reconstruction surgery, 160 (64.5%) did not intend to while the rest (8.9%) were not decided on this matter. Most of the respondents (57.7%) used breast prosthesis, 35.5% do not while 6.8% did not respond, an indication that they might not be aware of the

prosthesis. Most (68.1%) of the respondents had undergone radiation therapy while 23.1% had not. However, a whopping 87.1% had undergone chemotherapy, with only 6% not having undergone the chemotherapy.

The nature of these challenges and the proportion of respondents who have experienced them are presented in Figure 4.11.
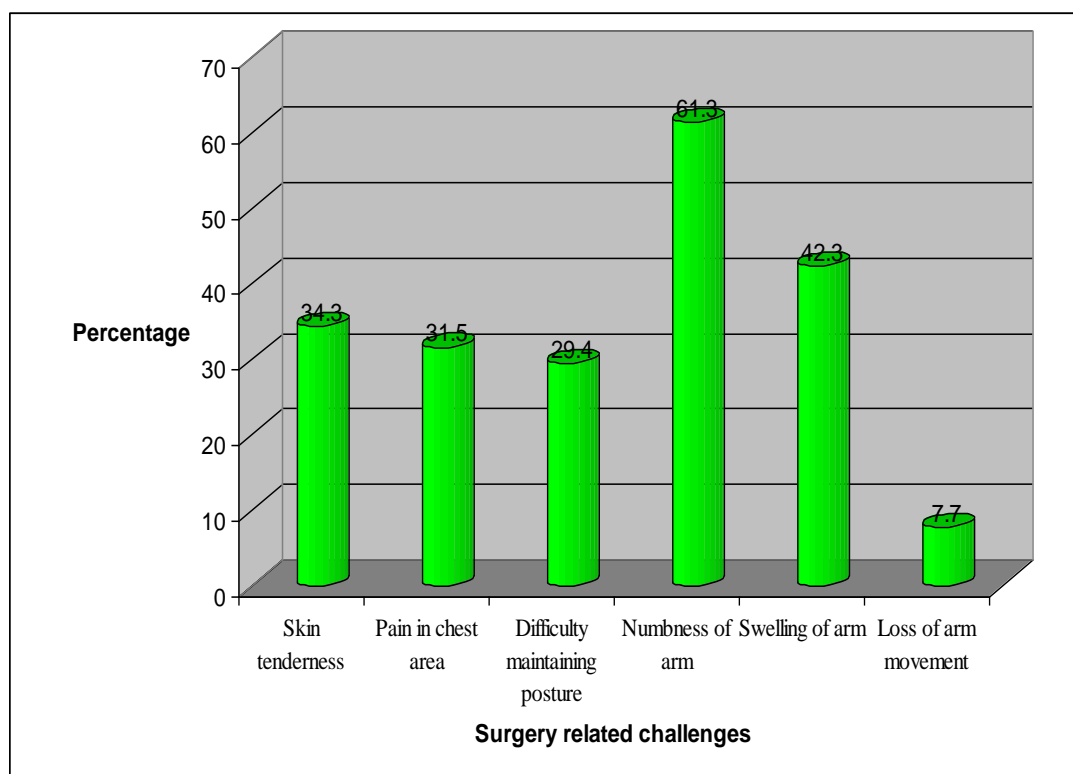
Figure 4.11: Surgery related problems faced by Breast cancer survivors (Multiple responses allowed)

From Figure 4.11, it is observed that BCSs faced a number of surgery related challenges including skin tenderness, pain in the chest, difficulties in maintaining posture and other problems. The most prominent of these problems was numbness of the arm on the

affected side that was experienced by 61.3% of the respondents. The problem was followed in severity by swelling of the arm on the affected side as experienced by 42.3% of the respondents. Other problems included skin tenderness experienced by 34.3% of the respondents, pain in the chest area (31.5%), difficulties in maintaining posture (29.4%) and loss of movement of arm on the affected side as experienced by 7.7% of the respondents.

Apart from the experience of surgery problems as a result of surgery, BCSs also experienced other problems related to radiotherapy that they went through. These problems faced are expressed in Figure 4.12.
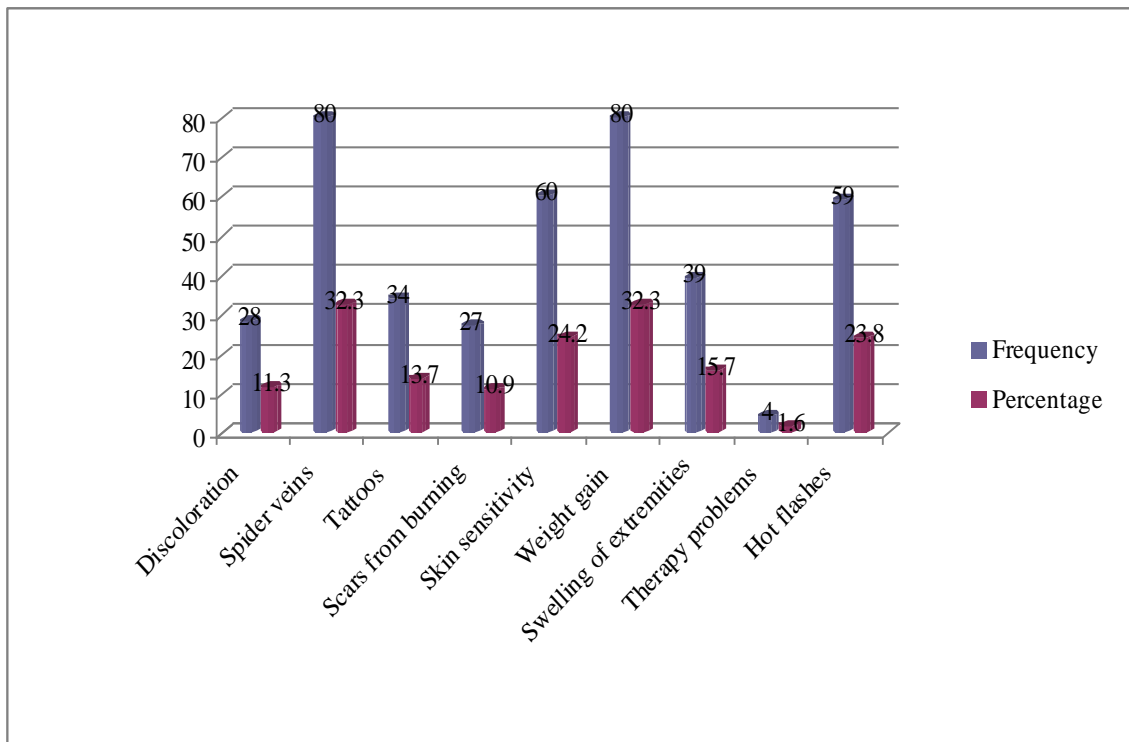
Figure 4.12: Radiation and chemotherapy related problems faced by breast cancer survivors

According to Figure 4.12, a number of radiation related problems face BCSs, though not all of them affect the same individual. The most prevalent radiation and chemotherapy related problem affecting BCSs are spider veins and weight gain. Both problems affected 32.3% of the respondents studied. The next most prevalent problem is sensitivity of the radiated skin. The factor affected 24.2% of the respondents, and was closely followed by the problem of hot flashes that affected 23.8% of them. Other problems associated with radiation affecting the BCSs include swelling of extremities particularly hands (15.7%), tattoos (13.7%), discolouration (11.3%), scars from burning (10.9%) and chemotherapy/hormone therapy that affected 1.6% of the respondents.

4.5 Challenges of Fitting Room Setting

The study sought to find out the challenges posed by fitting room setting in the selection of retail establishments where BCSs shop for clothing. Respondents were asked whether they still bought clothes from the same places they used to buy from before the onset or discovery of breast cancer, and if not, why they did so. The proportion of respondents purchasing clothes from the same sources, together with those purchasing from new and different sources is shown in Figure 4.13
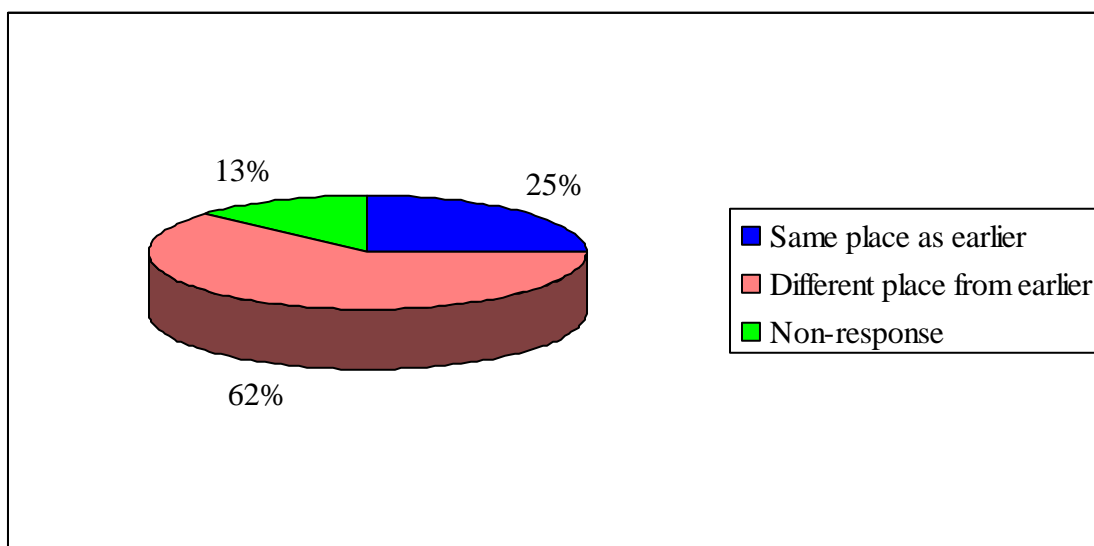
Figure 4.13: Views on whether clothes are bought from same places as before onset of cancer

From Figure 4.13, it is evident that majority of respondents (62%) no longer purchased clothes from the same places where they used to source them from, and therefore purchase from different sources, 25% sourced their clothes from the same places as they did before, while 13% of the respondents did not respond to the question.

4.5.1 Fitting room dynamics

With regard to fitting room dynamics, respondents were asked to state the level of importance they attached to a number of issues in the fitting room. The level of importance was based on a scale of 1 to 5 with the following interpretations:

1= Very important   **2**= Important   **3**=   Neither   important   nor unimportant **4**= Not important at all   **5**= Not sure.

The responses given are highlighted in table 4.4.

Table 4.4: Respondent's view on level of importance of various fitting room dynamics

Factor	% of respondents view for each factor				
	1	**2**	**3**	**4**	**5**
Space in the fitting rooms	32.3	18.5	12.1	7.3	8.1
Fitting room temperature	22.6	20.2	19.4	11.3	13.3
Mirrors placed to view all angles	30.2	33.1	9.7	6.5	11.7
Subdued lighting to dull effects of shadows on skin surfaces	17.3	20.6	8.1	20.6	18.1
Assistance from knowledgeable staff in the fitting room	34.7	16.9	16.1	15.7	3.2
Privacy in the fitting room area	60.9	18.5	3.2	3.6	1.6

From Table 4.4, it is observed that among all the fitting room dynamics, the factor that the respondents considered to be of utmost importance is privacy in the fitting room area.

This view was reported by 60.9% of the respondents who noted it as being very important while 18.5% viewed it as being important. This gives a combined importance rate of 79.4%, which is quite high. It therefore implies that for BCSs their privacy was most important. The sentiment is followed in importance by the placement of mirrors in the fitting room. The placement of mirrors to view all angles was rated as being very important by 30.2% and as important by 33.1% of the respondents, giving a combined importance rating of 63.3%. The third factor that is important in the fitting room, according to the respondents, is assistance from the staff in the room, a factor that had a combined importance rating of 51.6%, and was closely followed by space in the fitting room that attracted 50.8% combined importance rating. The fitting room temperature, identified as being important by a combined proportion of 42.8%, and subdued lighting in the fitting room to dull effects of shadows on the skin, identified only by a combined proportion of 37.9%, were not considered as being important.

4.5.2 Fabric attributes

The study further investigated what the respondents considered as being most important with respect to some fabric attributes. Using a scale of one to five, respondents were asked to state the level of importance they considered various fabric attributes. In the scale:

1= Very important   **2**= Important   **3**= Neither important nor unimportant

4= Not important at all   **5**= Not sure

Responses given are presented in Table 4.5.

Table 4.5: The Level of Importance of Fabric Attributes

Fabric and sales personnel attributes	% of respondents views for each factor				
	1	**2**	**3**	**4**	**5**
Fabric absorbency	46.8	23.8	5.2	8.9	0
Care of garment (wash vs. dry clean)	15.7	25.4	21.4	14.1	8.1
Fabric texture	36.3	45.2	1.6	5.2	0
How well the Fabric is designed	41.5	31.5	1.6	6.9	3.2

From Table 4.5, fabric texture is the most important attribute that breast cancer survivor's value most when buying clothes. This factor was viewed as being very important by 36.3% of respondents, and important by 45.2%, giving a combined total approval rate of 81.5%. It was followed in importance by the absorbency of the fabric. This view was expressed by a combined approval rating of 70.6%. How well the fabric is designed was third in importance, and was given a combined approval rate of 73%. Other factors like care for the fabric (e.g. wash and wear versus ironing before wear) were considered not to be of much importance as the factor was considered important by a combined approval rate of only 41.1%.

4.5.3 Garment Attributes

The study investigated the level of importance various garment attributes were to the respondents using a scale of 1 to 5 where:

1= Very important   **2**= Important   **3**=   Neither   important   nor unimportant

4= Not important at all   **5** = Not sure.

Responses given by the respondents are shown in table 4.6.

Table 4.6: The Level of Importance of garment Attributes

Attribute	% of respondents for each factor				
	1	**2**	**3**	**4**	**5**
Current fashion trends	37.1	29.8	10.1	1.6	5.2
Ease of care (wash or dry clean)	23.8	24.2	20.2	8.5	8.1
Comfortable (the way it feels on your skin)	56.5	19.8	5.2	1.6	0
Ease of dressing (the fabric stretches a little when worn)	41.5	25.0	12.1	6.5	0
Attractiveness when worn	37.5	27.4	17.3	3.6	0
Limited choice on the market	9.3	16.5	35.5	8.5	13.3
Warmth	26.2	27.0	20.2	6.5	1.6

According to Table 4.6, the most important of the garment attributes to BCSs is the comfort provided by the fabric – the way the garment feels on one's skin. This attribute was viewed as being very important by 56.5% of the respondents and as important by 19.8% of the respondents, giving a combined approval rating of 76.3%. It was followed

in importance by the fact that the garment was in the current fashion trend, as approved by a combined proportion of 66.9%.

Other attributes considered as being important by the respondents, and whose approval ratings were close to each other included ease of dressing such as elasticity of the garment, with a combined approval of 66.5%, and attractiveness when worn as viewed by 64.9% of the respondents. The capacity of the garment to maintain warmth had an average approval rating of 53.2%, just like ease of care of the garment that had a rating of 48%. The fact that there is limited choice in the market has no role to play in garment selection since this attribute had a combined approval rate of only 25.8%.

4.5.4 Personnel Attributes

The study further investigated what respondents considered as being most important with respect to the attributes of sales personnel. Using a scale of one to five, respondents were asked to state the level of importance they considered to be attributes of various sales personnel. In the scale:

1= Very important   **2**= Important   **3**=   Neither   important   nor unimportant

4= Not important at all   **5**= Not sure

Responses are presented in table 4.9.

Table 4.7: The Level of Importance of sales Personnel Attributes

Sales personnel attributes	% of respondents for each factor				
	1	**2**	**3**	**4**	**5**
Sales personnel helpfulness	27.4	25.4	3.2	13.7	9.7
Sales personnel training	23.8	15.3	23.8	10.1	6.5

From Table 4.7, assistance of the sales personnel was considered important, and had an combined approval rating total of 52.8%.

4.6 Clothing Needs Awareness of Breast Cancer Survivors

To find out whether the BCSs were aware of their clothing needs, a number of questions were posed whose responses could provide a pointer to the level of awareness of clothing needs by respondents. One such question sought to determine whether respondents were given any information from the medical staff prior to surgery or at discharge about clothing selection after mastectomy. Their responses are shown in Figure 4.14.
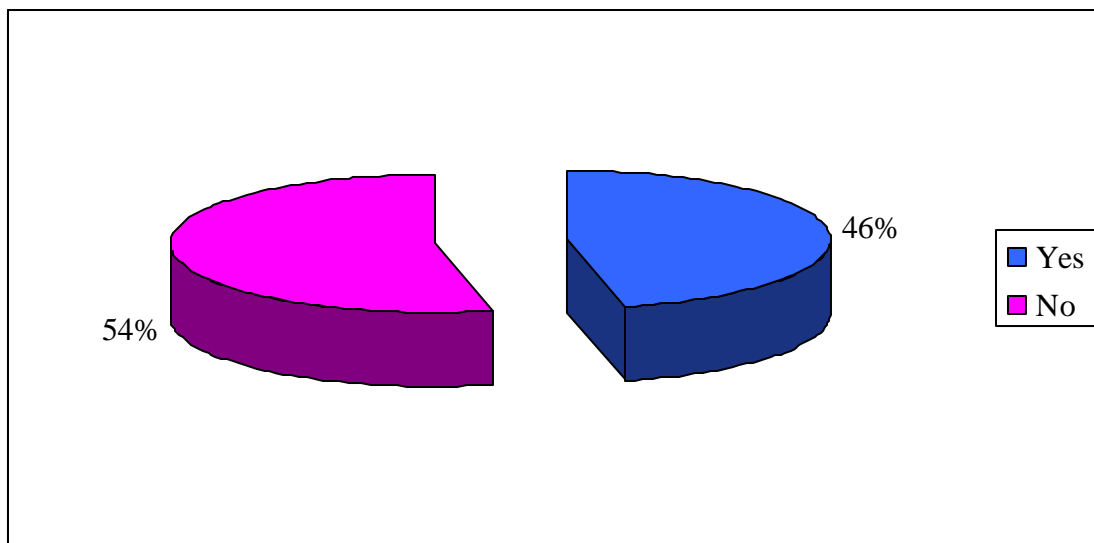
Figure 4.14: Views on whether BCSs were given information on clothing

From Figure 4.14, it is observed that 46% of the respondents got some information regarding the choice of clothes after mastectomy while the remaining 54% did not get any such information.

4.6.1 Information on clothing adjustments

Respondents were further asked whether they received any information from the medical staff prior to surgery or at discharge that gave helpful hints about adjusting their existing clothes after mastectomy. The study found that a few of the respondents had received such useful information but most of them had not. The responses on this matter are shown in Figure 4.15.
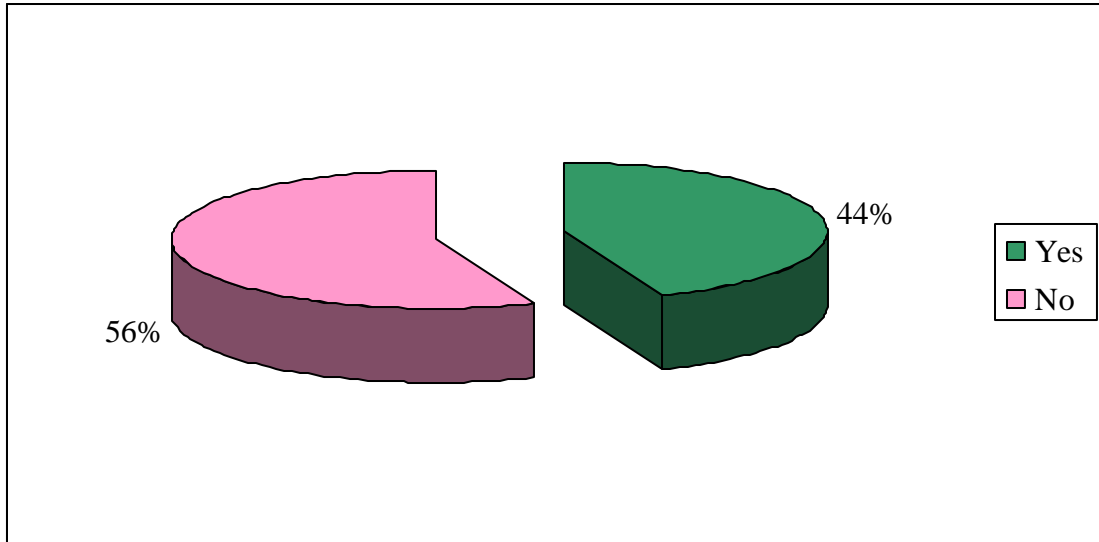
Figure 4.15: Views on whether respondents received information on clothing adjustments

Figure 4.15 shows that 56% of the respondents did not get any information on the need to adjust their existing clothes, with only 46% reported getting this information.

4.6.2 Nature of information Breast Cancer Survivors need to know

Finally, the study sought to know the nature of information regarding clothing needs that BCSs would like to be provided with, that could be of help to them after discharge from the hospital. They gave the responses provided in Figure 4.16.
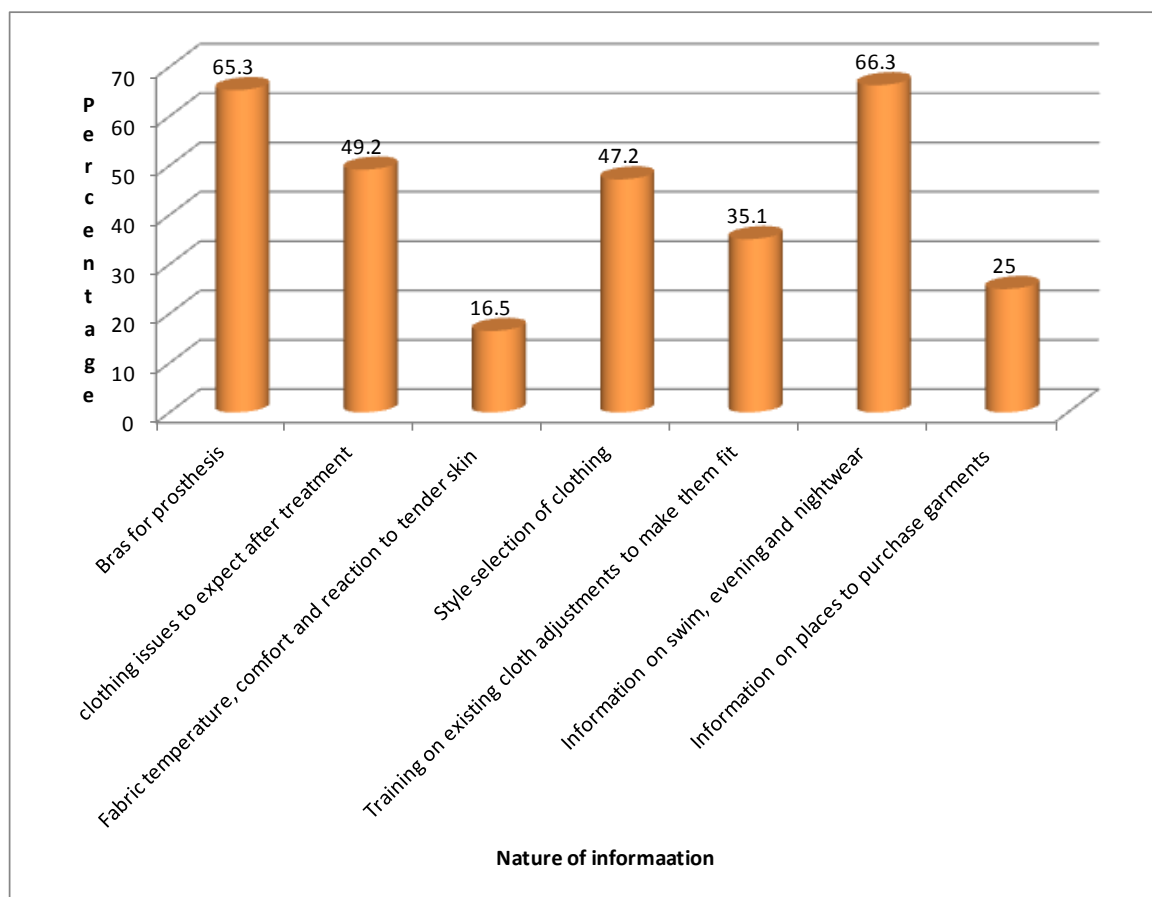
Figure 4.16: Nature of information breast cancer survivors need to know

According to Figure 4.16, the most important information was that BCSs would like to be provided information concerning swim, evening and night wear. This aspect was identified by 66.3% of the respondents. It was closely followed by the need for

information about bras for prosthesis. This was the view of 65.3% of all respondents. Provision of information on the general clothing issues to expect after surgery was found to be necessary, as expressed by 49.2%. Other views expressed includes; style selection of clothing 47.2%, training on existing cloth adjustments to make them fit 35.1%, information on places to purchase garments 25% and fabric temperature, comfort and reaction to tender skin 16.5%.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1 Introduction

This chapter discusses the results of study. The results are discussed in view of the objectives of the study.

5.2 Demographic Information

5.2.1 Respondents' Age

The results of this study shows that cancer prevalence displays a non-discriminative spread on the basis of age.

5.2.2 Marital Status

The study found that breast cancer was more prevalent among married women than single, widowed or divorced women. Although no study directly linked the influence of marital status to breast cancer attack, this finding concurs with the view expressed by Kravdal (2001), who indicated a survival advantage for married persons living with chronic diseases such as cancer. This fact may justify why there are more married breast cancer survivors compared with survivors who are divorced, windowed, separated and never married as they enjoy overall better health and increased life expectancy.

5.2.3 Respondents' Occupation

Results on respondents' occupational status revealed that breast cancer may attack anyone regardless of their occupation. Respondents had varying occupational status. Hence breast cancer attacked people from all walks of life, with no specific occupation being preferred. Although the proportion of self-employed people was relatively higher

(39.1%) than the rest of the occupational status, this does not imply that the self-employed are more likely to suffer from breast cancer, but that there are more self-employed people in the society than there are in other occupational status. As such, an individual's occupation does not affect the onset of cancer.

5.2.4 Income

The income of BCSs studied ranged from those without any formal income (the N/A group) to those earning above 50,000/-, with a near parity on respondent's distribution. Although those earning 30,000/- to 40,000/- (18.5%) and those earning 50,000/- (19.8%) and above were higher than the rest, their proportion was still close to that of the other groups and there is no reason to view the groups as being more affected than the rest. It is also observed that the proportion of respondents who did not respond to this question, 23%, was higher than the proportion of any of the income groups represented in the table. Having income helped the BCSs to access treatment and support, thus they were able to travel, communicate and purchase food and medicine.

5.2.5 Membership of National Hospital Insurance Fund (NHIF)

From the results of this study, it is clear that majority (81.5%) of BCSs were members of NHIF and therefore their treatment was partially supported by funds from this insurance. Only 14.9% were not members of the fund. From this finding, the work being done by NHIF to accommodate both formally and informally employed member is commendable as vital support for BCSs. Although BCSs appreciated the support being offered by NHIF they wished that the cover could be extended be cover other expenses such as

procurement of mastectomy Bras, prosthesis, lymphedema sleeves and reconstructive surgery among other costs.

5.2.6 Membership of National Social Security Fund

This study found that the number of respondents who were members of NSSF was exactly equal to those who were not members, at 47.6%.NSSF benefits BCSs since they are able to use some of the money from the fund for the management of breast cancer.

5.2.7 Time of mastectomy

From the results of this study it is clear that the respondents underwent a mastectomy from 2007 or earlier to as recent as 2016. Although there is no particular pattern, it can be seen that 2015 had the highest number of breast cancer victims operated on, (26.6%) With 14.1% having been operated on as at June 2016 when the study was conducted, there seem to be an increase in the number of BCSs operated on from 2014 to 2016. The reason for this increase could not be obtained on the basis of the data collected since this information was not available when the study was being planned. However, the fact that more hospitals are being equipped with modern screening machines, more awareness is available nowadays and the BCSs go to hospital for treatment enables vital documentation of information relating to breast cancer for research or otherwise.

5.2.8 Money spent on clothes per year

From the results of this study, the BCSs seems to spend less on clothes the highest proportion of respondents (42.5%) spends between 5,000/- to 10,000/- on clothing per

year while 28.2% spend less than 5,000/- per year. Although there is no standard amount that should be spent on clothes by a female not suffering from breast cancer, the amounts above seem minimal, implying that the presence of breast cancer tends to minimize the amount of money spent on clothing by the victims. This could be due to the loss of enthusiasm for clothes following the change in body configuration, which may not fit the available clothes.

5.3 Physical Challenges Facing Breast Cancer Survivors

One of the challenges found to face breast cancer survivors was swelling of extremities especially the hands. It was observed that when lymph nodes are removed or damaged through radiation or cancer, a build-up of lymph fluids occurs which is known as lymphedema. However, a relatively small proportion (16%) of the respondents experienced this condition. Although only 38% of respondents used lymphedema sleeve that controls swelling in the arm, a large proportion (36%) of respondents who did not use the sleeve did not experience swelling of extremities. This implies that while the use of lymphedema sleeve controls the swelling of extremities, it does not imply that failure to use it leads directly to the swelling.

A regression analysis on the use of lymphedema sleeve showed that there is a strong relationship between BCSs not using lymphedema sleeve and swelling of extremities. This therefore implies that the use of the sleeve greatly reduces the possibility of swelling of extremities. The swelling is responsible for the challenge of wearing previous clothes and hence if it can be prevented, the breast cancer survivor can use the previous clothes

without worrying about exposing the swollen part. The results of the swelling of extremities is in agreement with the view expressed by Laura (2003), who identified swelling of the arms as one of the effects of breast cancer surgery, and advised the use of lymphedema sleeve for its control. Thus, breast cancer survivors should wear lymphedema sleeve as this prevents swelling of extremities.

Swelling of the extremities especially the arm implies that the previous long sleeved clothes cannot fit the breast cancer survivors, cuffs wound not close around their swollen wrists or they would not like to wear their previous short sleeved clothes as they would expose the swelling. Hence, a challenge in using previous clothes. This is in agreement with the views of Tullio- Pow, Susan Barnwell, & Nyhof-Young (2009), who found that many women dealing with lymphedema after breast cancer treatment are needless victims of fashion. These makes the Breast Cancer Survivors (BCSs) to experience appearance anxiety and horror, besides clothing that did not fit act as constant reminders of their tribulation with breast cancer, affecting both physical as well their psychological comfort.

Other challenges facing breast cancer survivors included the fact that the survivors could no longer fit in the clothes they used to wear earlier and most of their previous clothes did not fit them well and had to be altered to a great extent to fit them. Besides, they had to shop in stores with exclusive places for trying on the clothes before purchase (93.5%). The BCSs are therefore greatly inconvenienced by this turn of events with regard to their clothing. Other sources of clothes include supermarkets (79%), fitting by a specialist (72.2%) while only 52% purchase their clothes from open air markets. It is important to

note that the respondents did not make purchases from only one of these sources, but select a number of them depending on their preferences. In general, the onset of breast cancer generally changed the survivor's approach to clothing. They had to either alter the existing clothes or buy completely new set of clothing. Besides, they also had to change their source of clothes as the previous sources no longer conformed to their requirements.

The greatest reason for changing the source of clothes is due to the need for privacy (58.5%). As much as all women need privacy especially when trying out clothes, the occurrence of breast cancer greatly increased this need as the survivors avoided exposing the scars to other people irrespective of their gender. They therefore became very selective of places where to shop for clothes as the place had to offer a private room for trying out the clothes. The Breast Cancer Survivors also changed their point of purchase due to the availability of the appropriate clothing, cost of clothing, due to the helpfulness of the personnel in the new place and due to the placement of mirrors and good lighting in the dressing rooms of the new points of purchase. In general, the BCSs preferred to buy clothes in places that were not only environmentally friendly but also fulfilled their physical psychological needs.

5.4 Source of clothes worn by breast cancer survivors

Clothes store was found to be the most preferred (93.5%) source of clothes for most BCSs. It can be inferred that, since the BCSs held privacy highly, it is possible that they preferred clothes store due to its provision of secluded areas for trying out clothes before buying, or a combination of this factor and others like helpfulness of stores assistants.

The same could be said of supermarkets. But it is clear that very few BCSs could prefer buying clothes from open air as there would be no privacy in trying out the clothes. However, the price probably ensured that open air markets retained some customers as prices at the clothes store and supermarkets are likely to be higher than that at the specialists or in open air market. Thus, it would be natural for the BCSs to make purchases where their privacy is assured.

This finding corroborates with the view expressed by Jackson (2004), who reported that privacy in the fitting room influences the BCSs willingness to shop in a brick-and-mortar setting rather than online or in apparel catalogues. Thus, there is low proportion of online shoppers.

A majority (54%) of BCSs would like to wear the same styles that they used to wear before the onset of breast cancer and subsequent surgery. This could be due to the confidence they have always had when wearing those clothes, which is no longer the case following the surgery. Despite this, only 36.7% were happy with the clothes available as most no longer could fit them. Many of the clothes bought by 48.8% of the respondents, had to be altered in order to fit them. As such, most of the respondents (51.2%) shop in retail stores where they can try on clothes to check their fit before they buy (Table 4.3). However, a paltry 9.7% of the respondents were able to shop online despite their inability to find clothes that conceal their scars and fit them well.

Results from the regression analysis showed that there was a strong relationship between BCSs not using lymphedema sleeve and swelling of extremities ($R = 0.978$ while $R^2 = $

0.957) which depicts very strong relationship between lack of use of lymphedema sleeve and swelling of extremities.

5.5 Reasons for changing source of clothes purchased by BCSs

Most of the BCSs changed their point of purchasing clothes due to the need for privacy. It is therefore clear that following the change in the body shape of breast cancer survivors, they had become extremely concerned with the need to cover their bodies, hide the surgery scars and any absent breast(s). They therefore had to change from any previous source of clothes that could not ensure that their privacy is maintained while trying out clothes. Although some (30.2%) of them changed their point of purchase due to the cost of clothing, the need for privacy by far outweighs any other reason for changing the point of purchasing clothes. It therefore follows that in order for clothes sellers to have BCSs as part of their clientele, they should ensure that there is a secluded place for the BCSs to try out clothes in private.

5.6 Challenges Posed by Breast Cancer Treatment Path

More than half of the respondents (68.1%) had radiation therapy while 87.1% had undergone chemotherapy. Almost all respondents (98.4%) had not undergone breast reconstruction surgery, although 25% intended to perform it while the remaining 64.5% had no such intention. Most of those who intended to have breast reconstruction surgery had also undergone breast non-conserving surgery. Breast non-conserving surgery has the greatest negative effect on the patient's physical outlook as it alters the survivor's body shape a great deal. The survivors had to use prosthesis to enhance their shape, and seek

for clothes that conform to the prosthesis. This finding is in tandem with that by Jeziorski *et al.* (2007), who found that after surgery, the remaining body configuration will vary by the type of surgery and the closure technique that was used, and this affects the survivors' clothing needs.

As a result of the treatment path adopted, the BCSs faced a number of challenges that included numbness of the arm on the affected side (61.3%), swelling of the arm on the affected side (42.3%), skin tenderness (34.3%), pain in the chest (31.5%), difficulty maintaining posture (29.4%) and loss of movement of arm on the affected side (7.7%). Regression analysis results between the treatment path taken and challenges faced by BCSs gave a strong relationship between the two variables and therefore implies that the treatment path greatly influences the challenges posed to BCSs. From these results, it is clear that BCSs experience a lot of difficulties following the surgery they had undergone. Golshan and Smith (2006) reiterated that the procedures used to treat breast cancer leave perceptible changes within the body, including lymphedema with resultant swelling of the arm, loss of body heat regulation, reduced mobility of upper limbs and torso, skin sensitivities and early onset of menopause.

The implication of these factors is that clothes designed for use by breast cancer survivors should be able to accommodate most of the challenges the breast cancer survivors experience following surgery. As such, the fabric of the cloth should be comfortable enough so as not irritate the tender skin of the BCS. It should also be accommodative enough so as to cover the arms that may swell, while at the same time be flexible to

accommodate the arm when it is swollen and when it is not swollen. In general, the cloth should be made of comfortable material to the expected user (the BCSs). These challenges affected the choice of clothes bought by BCSs in various ways.

As a result of spider veins, the survivor would prefer cloth designs that can cover parts of the body with such veins, yet previous clothes were not purchased to achieve this. Weight gain on the other hand implies that they could not fit in their previous clothes and would therefore require new outfits. Skin sensitivity implies that the survivor was very particular about the fabric material and accessories texture as some could cause body irritation in addition to life threatening infections. Swelling of extremities and scars implies that the survivor required clothes that could cover the affected parts. Hot flashes imply that the survivor have to opt for fabrics with wicking ability, and this is in agreement with the views of Tullio-Pow, Zhu, Schaefer, Kolenchenko & Nyhof-Young (2011), who found that fabric wicking ability may reduce the detrimental effects of hot flashes and promote improved quality life.

Linear regression between treatment path and challenges posed shows that R = 0.943 while R^2 = 0.889. This indicates a strong relationship between the two variables and therefore shows that the treatment path greatly influences the challenges posed to BCSs.

The BCSs also experienced other problems related to radiotherapy that they went through. These include spider veins and weight gain, sensitivity of the radiated skin, hot flashes, discolouration, and scars from burning and chemotherapy/hormone therapy. This

finding is in agreement with that by Jackson (2004), which postulated that early post-mastectomy women have to contend with skin irritations from radiation, and counter discomfort from post mastectomy pain (PMP).

5.7 Challenges of Fitting Room Setting

Due to the fitting room settings, majority of respondents (62%) no longer purchased clothes from the same places where they used to source them from, and therefore purchase from different sources. Only 25% sourced their clothes from the same places as they did before. This shows that after surgery due to breast cancer, most survivors change the shopping outlets from where they purchase clothes. The reasons for the change ranged from lack of privacy in the previous places of purchase to lack of the right cloth design in the previous places. Hence, they had to seek new places that suited their changed status. This finding conforms to the views of d'Astous (2000), who states that a pleasant retail environment can be a pertinent marketing goal since negative feelings that are experienced during shopping can curtail the trip and ultimately result in the customer leaving the store without making a purchase. Baumstarck & Park (2010) further notes that poor atmospheric conditions can result in lost sales due to their negative impact on the shopping experience of customers, thereby making the customer to change places or sources of their clothes.

5.7.1 Fitting room dynamics

A number of fitting room dynamics were considered as important by BCSs. The most prominent of the dynamics is privacy in the fitting room area. This therefore implies that

for BCSs their privacy is paramount. Whereas every woman needs privacy in the fitting room area, the case of the BCSs is rather unique since their interest is concealment of unnatural deformities on the body that arose due to surgery. They thus require more secluded room than ordinary women. Thus privacy, presence of well-placed mirrors and, to a small extent, space in the fitting room, are considered most important to the BCSs when shopping for clothes.

5.7.2 Fabric attributes

Fabric texture, absorbency and design are the key attributes that BCSs consider as being important. This finding conforms with the findings by Rasband & Liechty (2006), who noted that texture in fabrics can be used to create optical illusion, absorb light to make figure areas less noticeable, and add emphasis to areas of the figure. Since these help hide the areas of concern of BCSs, they are quite critical to the survivors. Rasband & Liechty (2006) further note that the right design work with figure variations to disguise irregularities and lead the eye up to focus attention on facial features rather than the area of breast amputation, thus helping in hiding the areas that may have been affected by surgery. The importance of fabric absorbency to the BCSs is similar to views expressed by Tullio - Pow *et al*. (2011), who found that fabric wicking ability may reduce the detrimental effects of hot flashes and promote improved quality life.

5.7.3 Garment Attributes

The level of comfort of the garment is the key attribute of a garment that BCSs consider as being most important when selecting clothes for use. The capacity of the garment to be

in fashion at the moment, its elasticity and its attractiveness also count to some extent, but comfort is the most important of all the garments' attributes. This finding is in agreement with the finding by Chowdhary & Ryan (2003), who found that clothing fit, fabrication and comfort play important roles in appearance management and since the BCSs are concerned with their appearance, their comfort is vital to them.

5.7.4 Personnel Attributes

The assistance of the sales personnel is important to the BCSs when purchasing clothes. This implies that sales personnel need to be handy and assist the buyers in selecting clothes for trying and purchasing. This tallies with findings of Gallagher, Buckmaster, Carroll, Kiernan, & Geraghty (2010) who found that sales personnel play a vital central role in the type of fitting experience BCSs encounter and in turn promote a positive sense that instils self and well being in survivors.   Other factors like training of sales personnel were considered not to be of much importance and had an average rating of 39.1% of respondents.

5.8 Clothing Needs Awareness of Breast Cancer Survivors

In view of the fact that clothing is outside the medical realm, clothing issues are not directly emphasized by the treatment team and thus are inadequately addressed. Majority of the respondents were not prepared for the challenges of choosing clothes after their discharge, and only met them on discharge as personal challenges. The survivors were therefore not prepared for the challenges they faced after discharge. They met the first challenge upon discharge when their existing clothes could not cover them as much as they would have liked, especially on their breast torso structure following the surgery in

which one or both of the breasts was either removed or deformed in some way, rendering the chest to appear disproportional. It therefore implies that there is need to transmit information regarding the challenges that the survivors are bound to face to the survivors days before their discharge. This helps in preparing them to face the challenges when they eventually come. They should be informed about the need to adjust their previous clothes to fit their changed body shape.

There is also the need for information about bras, prosthesis in addition to apparel and accessories for BCSs. Thus the need for this information actually conforms to reality since the main reason for the change of body configuration that is responsible for all the other changes is the absence of one (or both) of the breasts. This gives an instant change in the body shape of a breast cancer survivor. As such, information on bra for use and prosthesis will be a counter measure to this effect, since prosthesis acts as an artificial breast and therefore helps restore body posture and balance in the chest area. Once this is done, other factors like suitable fabric/material can follow suit. This information is therefore key to all breast cancer patients and should be provided before surgery or immediately after. This finding conforms to that by Jackson (2004), who found that one of the key clothing concerns among participants in a study he conducted was access to information regarding bras for prosthesis. Thus, information regarding the use of breast prosthesis is very crucial to the BCSs.

Apart from the provision of information on bras for prosthesis, information on the general clothing issues to expect after surgery was found to be necessary. Such information would be useful since it will cover all other challenges that BCSs are bound to face.

Similarly, information regarding style selection should be provided to BCSs so as to prepare them for the right selection of clothes. These findings on awareness information are in agreement with the findings by Zavala & Shaffer (2011), who found patient education to be an important aspect of patient care, that is also related to patient satisfaction, healthcare provider performance, and clinical outcomes.

If BCSs are provided with information on bras for prosthesis, general clothing issues to expect after treatment and information on style selection, the survivor would be ready to face all the other clothing challenges. The study found that the three are the most crucial information that breast cancer patients require as soon as they are fit enough to psychologically prepare for life after surgery. The rest of the information can come in gradually as the person adjusts to her new status.

5.9 Significance Test Results

A significance test was conducted on all the variables studied with the help of the SPSS. The degree of freedom in all cases was greater than 30. The results generated by the test are presented in Table 5.1.

Table 5.1: Significance test results on all variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.009	.287		6.988	.000
	Breast cancer patients face a number of physical challenges	2.048	.161	-5.538	-12.712	.000
	Breast cancer treatment path affects clothing procurement by BCSs	.919	.077	2.543	11.919	.000
	Fitting room setting affects the preference of sources of clothes for BCSs	1.075	.107	3.132	10.092	.000
	BCSs have little awareness of their clothing needs after surgery.	-.172	.094	-.214	-1.826	.075
a. Dependent Variable: Challenges facing breast cancer survivors						

From Table 5.1, the regression model for the regression equation can be written as

follows: $Y = X_1 + X_2 + X_3 + X_4$ Hence

$Y = 2.009 - 2.048X_1 + 0.919X_2 + 1.075X_3 - 1.72X_4$

Where Y is the challenges facing BCSs while X_1, X_2, X_3 and X_4 are the various variables

under study.

5.10 Interpretation on significance test results on all variables tested

The model implies that under normal circumstances even without breast cancer surgery, there are still challenges facing the patients, as shown by a factor of 2.009. Following breast cancer surgery, the physical challenges multiply by a factor of 2.048. The nature of the treatment path taken increases the challenges by a factor of 0.919 while fitting room setting provides a chance for challenge by a factor of 1.075. Finally, provision of clothing awareness reduces the chance of challenges by a factor of -1.72, thus indicating that these values were significant at an alpha level of 0.000 except for the awareness part that was significant at an alpha level of 0.075. This implies that awareness among BCSs was quite necessary irrespective of all the other variables.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter provides a summary of findings, conclusions and recommendations of the study.

6.2 Summary of Findings

i) Breast cancer survivors (BCSs) experienced many physical challenges after the surgery. The net effect is that the breast cancer survivors' lives changed drastically after surgery as they needed to adjust much of the activities they used to perform. The adjustments include changing the kind of clothes they wear as they could no longer fit into clothes they used to wear before surgery.

ii) Most of the BCSs (54%) could not use the same clothes they used to wear before the onset of breast cancer as their body configuration drastically changed following the surgery. Most of the clothes available in shops did not fit them well and have to be altered to a great extent to fit them. The survivors had to shop in retail shops that have exclusive places for trying out the clothes before purchase. The BCSs have therefore been greatly inconvenienced by these turn of events with regard to their clothing.

iii) BCSs experienced a number of challenges following the surgery. These problems include skin tenderness, pain in the chest, numbness of arm on the affected side, and difficulty maintaining posture among others. This calls for fabrics to be used by BCSs to be designed such that they are soft, comfortable and skin friendly, seams should be

made on the outside rather than the inside, avoid use of apparel accessories such as metallic zippers, sequins, buckles, button with a shank to evade abrading the skin which can result to life threatening infections. In addition numbness of the arm means that they may not be able to raise their arm and draw clothing over their head therefore fabric that stretch and permit them to step into the garment, and draw it up would be more practical.

iv) Although BCSs experienced radiotherapy related problems including discoloration, spider veins, tattoos, scars from burning, sensitivity of radiated skin and weight gain which in turn affect the design and fabric types for their clothes, these problems were considered minor and therefore they could live with them. However, the occurrence of spider veins, sensitivity of radiated skin and weight gain by BCSs seem to have eluded previous researchers since such occurrences were not found in the literature.

v) Most BCSs no longer purchased clothes from the same places they used to source them before the onset of breast cancer. The reason for this is that the surgery affects their self-esteem thus BCSs feels increased need for privacy, while at the same time they have to try out the clothes before deciding to purchase. This made the BCSs to seek places that can provide them with more privacy and the chances of trying on clothes with fewer prying eyes around.

vi) Among the attributes of clothes fitting room, privacy, presence of well-placed mirrors and, to some extent, space in the fitting room, were considered most important to the BCSs when shopping for clothes. The survivors wanted to confirm the fit of their clothes while at the same time have as few other people around as possible. Thus, the

need to self-view from different mirrors in a private room with only self and probably a few people of their own choice.

vii) When choosing fabrics for clothes, texture was the most important attribute that BCSs consider most. The texture determines the comfort of the cloth, which is considered by BCSs as being one of the key requirements of a cloth. The fitness of the cloth to the person's body without further adjustments was also an important factor on clothes selection by BCSs, but it is second to the fabric texture.

viii)   BCSs were not usually provided with adequate information regarding the choice of clothes after mastectomy. Very little information about the clothing challenges ahead was provided to BCSs, like where to get clothes that suits their changed body shape or how to adjust existing clothes. The BCSs learnt to cope as they face the challenges in their own lives.

ix) The most critical clothing information that BCSs wished to be provided with after surgery, was information concerning bras for prosthesis. Breast prosthesis (artificial breast) helps restore body configuration by providing chest balance. This is the most critical aspect to the breast cancer survivor as it provides a means of "replacing" what was lost. Other general matters like clothing style selection were to be considered long after the body configuration has been restored by the prosthesis.

6.3 Conclusions

From the study findings the following conclusions can be made:

(i) BCSs from the selected hospitals experienced a number of physical challenges. The challenges included swelling of extremities particularly hands, skin

tenderness, pain in the chest, numbness of arm on the affected side, difficulty maintaining posture and several other problems.

(ii) The mode of treatment path adopted for breast cancer has direct effect on the clothing challenges of the surviving patient. The kind of clothes purchased depends on the nature of treatment. For instant, patients who undergo lumpectomy will require less covering clothes compared to those who undergo mastectomy.

(iii) Fitting room has major effects on the choice of places for purchasing clothes for BCSs. Since the survivors consider privacy so highly, they avoid clothes stores that do not have private rooms for trying out clothes before purchase. The presence of mirrors placed at different angles or regulated temperatures inside clothes stores are just additional advantages after privacy.

(iv) Most BCSs are discharged without adequate information about what to expect in their natural setting regarding their clothing needs or other requirements.

6.4 Recommendations

6.4.1 Policy Recommendations

On the basis of these study findings and the conclusions, the following policy recommendations on various aspects are made.

6.4.1.1 Breast Cancer Survivor Management

i) Ministry of Health should consider provision to BCSs items such as breast prosthesis, mastectomy bras, lymphedema sleeve and other medical textiles which

should constitute an integral part of breast cancer treatment. The cost of these items in addition to breast reconstructive surgery should also be covered by insurance policies especially the national policy (NHIF). These medical textiles should be provided at the breast treatment hospitals after treatment. The provision of these items would greatly help the breast cancer patients in their recovery process.

ii) The Ministry of Health should develop programmes to provide general information regarding general cancer awareness, the need and processes of early detection and treatment. The consequences and challenges of cancer before and after treatment should be highlighted. This information should be placed in the electronic and print media periodically, such information would be quite useful to the general public as would help in early detection of the disease since it will be a matter in the public knowledge.

iii) Breast cancer hospitals should start a clothing wing that should stock materials most urgently required by BCSs soon after discharge. The key items to be stocked should include breast prosthesis and mastectomy bras that most BCSs would need as soon as possible.

iv) Clothes retailers should ensure that their stores have a secluded or private dressing room with multiple mirrors for adequate viewing of clothing from all angles and sufficient space that accommodates limited range of post-surgery motion. The room should have subdued lighting that dulls altered skin surfaces and where possible, adjust their room temperature to meet thermo-comfort needs of breast

cancer survivors. This combination of fitting room dynamics is what the breast cancer survivors need to continue shopping at the stores.

v) Fashion designers should ensure that clothes designed for use by BCSs are fabricated such that they are soft, comfortable and skin friendly. Their seams should be made on the outside rather than the inside and should avoid use of apparel accessories such as metallic zippers, sequins, buckles or button with a shank to evade abrading the skin which can result to life threatening infections abrading the skin.

6.4.2 Training Recommendations

i) Hospitals should train staff handling BCSs on the patients' clothing needs. This training should be conducted by fashion designers and medical doctors who understand the BCSs clothing needs. With this knowledge, the staff can help in transmitting the same information to the breast cancer patients who would be due for discharge.

ii) Breast cancer patients should be prepared in advance (after successful surgery) about what to expect in terms of their clothing needs. The Hospitals staff should advise them on what to do, the nature of clothes to use and where to get them. Such information would help the breast cancer survivors gain confidence in life as they would be aware of what awaits them and therefore be ready to face them when they arise.

iii) Cancer treatment hospitals should organize weekly interactive sessions where BCSs would be given advice and encouraging information regarding their changed lives and how to overcome the shortcomings of the same. This would go

a long way in instilling confidence and boosting self-esteem on breast cancer survivors, some who may have despaired as a result of the delicate operation.

6.4.3 Education Recommendations

i) The Ministry of Health should be prepared and distributed breast cancer post mastectomy management pamphlets (information booklets) to cancer treatment and management hospitals for the dissemination of information to breast cancer patients. The booklet should contain most of the information needed by Breast Cancer Survivors, but are currently not available. Such information would help the recovering breast cancer survivors have hope in life as the survivors will know in advance what to expect and therefore what they could possibly do to ensure their continued recovery process.

6.5 Suggestions for Further Research

This study suggests that another study should be conducted to consider the clothing requirements after treatment and to specific fabric and cloth design requirements for breast cancer Survivors.

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APPENDICES

Appendix I: Transmittal Letter

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P. O. Box 1125 - 30100
Eldoret
Tel. 532033713

Dear Respondent,

RE: RESEARCH QUESTIONNAIRE

I am a postgraduate student at the University of Eldoret, pursuing a master's degree Fashions and Apparel Design in the department of Family and Consumer Sciences. I am currently conducting a study on the challenges faced by breast cancer survivors.

You have been identified as one of the respondents for this study. I therefore request you to help me get the necessary information by filling the questionnaire as sincerely as you can. The information provided will be treated with utmost confidentiality and no unauthorized person will access them.

Thank you in advance.

Edith N. Thairu

Appendix II: Questionnaire for Breast Cancer Survivors

Part I. Demographic Information (fill in accordingly)

1. Age (years)..

    18-24   25-34   35-44   45-55   56-65

2.   In   which   county   do   you

reside?.......................☐.........................☐.............. ☐   ☐

3. Marital status: Single   Married   Widowed   Divorced

4. Occupation? ……………………………………………………….....................

5. Estimate your monthly income in Kenya shillings: Below 10,000 ☐

10,000-20,000 ☐   20,000 – 30,000 ☐   30,000-40,000 ☐

    40,000-50,000 ☐   50,000 and above ☐

6. What is the number of people who depend on you? …………………………………….

7. Are you a member of NHIF?   Yes ☐   No ☐

8. Are you a member of NSSF?   Yes ☐   No ☐

9. How much do you spend on clothes for yourself, in one year?

        Below Ksh5000 ☐

        Kshs 5000-10,000 ☐

        Above Kshs 10,000 ☐

10. In which hospital did you undergo the breast cancer surgery? _____

_____

Part II. Medical Information

1. When did you have a mastectomy (year) _____

2. (i) Have you had more than one mastectomy? Yes ☐   No ☐

(ii) If **yes**, when did you have the second surgery? (Year) _____

3. What type of mastectomy or surgery(s) did you have (tick all that apply)?

Lumpectomy (tumour is removed and a little bit of breast tissue)   ☐

Partial Mastectomy (part of the breast is removed that contains the tumour and some of

the normal breast around it) ☐

Simple/Total Mastectomy (removal of the breast, with skin and nipple, but no lymph

nodes under your arm) ☐

Modified Radical Mastectomy (removal all of the breast tissue and lymph nodes under the arm on the affected side) ☐

Radical Mastectomy (removal all of the breast tissue and underlying muscles and lymph nodes under arm on the affected side) ☐

4. Which side of your body was the surgery done?   i) Right side only ☐

ii) Left side only ☐   iii) Left and Right Side ☐

5. (i) Have you had breast reconstruction surgery?   (a) Yes   (b) No ☐

(ii) If "Yes" in (i) above, when did you have reconstruction surgery? (Year)

_____   ☐ ☐

(iii) If "No", do you plan to have reconstruction surgery? 1) Yes   2) No

6. Do you currently use breast prosthesis?   1) Yes ☐   2) No ☐

7. Did you have Radiation therapy?   1) Yes ☐   2) No ☐

8. Did you have chemotherapy?   1) Yes ☐   2) No ☐

9. Which of the following problems related to breast cancer surgery, of the radiation, or chemotherapy, have you ever experienced that changed your clothing purchases? (Please tick all that apply)

a) Surgery problems

Skin tenderness ☐

Pain in chest area that remained after healing from your surgery ☐

Difficulty maintaining posture due to loss of weight in your chest from breast removal ☐

Numbness in affected arm and/or chest area ☐

Swelling of affected arm ☐

Some loss of movement of arm on affected side ☐

b) Radiation problems

Discoloration ☐

Spider veins ☐

Tattoos ☐

Scars from burning ☐

Sensitivity of radiated skin to sun (UV rays) ☐

Chemotherapy/hormone therapy problems ☐

Weight gain ☐

Swelling of extremities, particularly hands ☐

Hot flashes ☐

10. Do you currently use a lymphedema sleeve (sleeve to control swelling in arm):

(i) Yes ☐   (ii) No ☐

Part III. Clothing

11. Since your mastectomy, which of the following statements **are true** for you? (Tick **all** that apply)

(i) I would like to wear all of the same styles I wore before my surgery (a) Yes

(b) No ☐   ☐

(ii) I am happy with the fit of the clothes that are available to buy – (without altering them to make them conceal my scars and fit the changes in my body)

(i) Yes ☐   (2) No ☐

(iii) Since having my surgery, the styles I buy need to be altered in order for me to wear them (I need to alter them to make them conceal my scars and fit changes in my body).

   a) Yes ☐   b) No ☐

(iv) I like to shop in retail stores where I can try on the clothing so I can see how it looks and how it conceals my scars and fits me   a) Yes ☐   b) No ☐

(v) I shop online because I cannot find clothes that conceal my scars and fit the changes in my body in retail stores since my surgery a) Yes ☐   b) No ☐

12. In order to wear some of the styles that you desire to wear since your surgery, how much change would have to occur to the garments for you to wear them?

i) Major changes (the necklines or armhole would have to be changed a lot) ☐

ii) Minor changes (I can easily have them changed to conceal my scars) ☐

13. In the year before your mastectomy, what percentage of clothing did you purchase from the following sources? (Tick all that apply and indicate the approximate percent of your clothes you purchased there)? i) Supermarket ☐___%   ii) Clothes shop ☐ ___ %

iii) Fitting by a specialist tailor ☐____%   iv) Open air market ☐___%

v) Other (please specify) ___☐_____

14. In the latest year SINCE your mastectomy, what percentage of clothing do you purchase from the following sources? (Tick all that apply and indicate the approximate percent of clothes you purchase there) i) Supermarket ☐ _____% ii) Clothes shop ☐ _____%

iii) Fitting by a specialist tailor ☐ _____% iv) Open air market ☐ _____%

v) Other (please specify) _____

15. (a) Do you still purchase clothes from the same sources as you used to before the breast cancer incident? Yes ☐ No ☐

(b) If you are **not** purchasing clothes at the same place, why have you changed your shopping destination? (Tick all that apply). i) Mirrors and lighting in the dressing rooms ii) Personnel ☐ iii) Clothing selection works better for me since surgery ☐ iv) Cost of clothing ☐ v) other (specify) _____ ☐

16. How important are each of the following in your selection of a store from which to purchase your clothing? (Think of how you feel since you had your mastectomy about these issues and **tick the response** that indicates how important it is from the choices given.

Where: **1**= very important **2**= important **3**=neither important nor unimportant **4**= not important at all **5**= not sure

Factor	Choices				
	1	2	3	4	5
Space in the fitting rooms					
Fitting room temperature					
Mirrors placed to view all angles					
Subdued lighting to dull effects of shadows on skin surfaces					
Assistance from knowledgeable staff in the fitting room					
Privacy in the fitting room area					

17. For each item listed below indicate how important it is to you when you select clothes to purchase by **ticking** the response that indicates how important it is to you.

Where:　　　**1**= very important　　**2**= important　　　**3**=neither　important　nor unimportant　　**4**= not important at all　　　**5**= not sure

Factor	Choices				
	1	2	3	4	5
How well the garment is designed (stylish, current fashion)					
Care of garment (wash vs. dry clean)					
How the fabric feels when I wear it					
How the clothes fit (am I going to have to pin it?)					
Sales personnel helpfulness (the personnel assist you)					
Sales personnel training (trained garment adjustments)					

18. Rate the level of importance of the current factors that you may consider when purchasing a garment in terms of the kind of fabric the garment is made from, using the following scale, **where**:　　　　　**1**= very important　　**2**= important　**3**=neither important nor unimportant　　　**4**= not important at all　　　**5**= not sure

Factor	Choices				
	1	2	3	4	5
Current fashion trends					
Ease of care (wash or dry clean)					
Comfortable (the way it feels on your skin)					
Ease of dressing (the fabric stretches a little when worn)					
Attractiveness when worn					
Limited choice on the market					
Warmth					

19. (i) Since your mastectomy, after purchasing a cloth, have you had to alter the clothes to conceal scars or fit changes in your body (pinning or sewing it differently)?

☐　　　☐

 Yes   No   No

(ii) If "Yes" in (i) above, at what area or areas are they changed? (Tick all that apply)

a) Length (change the length of tops or dress to make them even)   Yes [ ]   No [ ]

b) Sleeve (loosen them around your arm)   Yes [ ]   No [ ]

c) Waistline (Change waist so it is not too tight)   Yes [ ]   No [ ]

d) Bust line (adjust garment for wrinkles or gaps on the surgery side) Yes [ ]   No [ ]

e) Neckline (adjust for wrinkles or gaps to cover surgery scars)   Yes [ ] No [ ]

f) Back (adjust for wrinkles or gaps to cover surgery scars)   Yes [ ] No [ ]

Part IV. Education

20. Did you receive any information from the medical staff prior to surgery or at discharge about clothing selection after your mastectomy?   Yes [ ]   No [ ]

21. Did you receive any information from the medical staff prior to surgery or at discharge that gave helpful hints about adjusting your clothing after your mastectomy?

     Yes [ ]   No [ ]

22. In which areas would you desire to have written information to assist you? (Tick all that apply).   i) Bras for your prosthesis [ ]

ii) Information on what clothing issues to expect throughout the treatment process [ ]

iii) Fabric selection of temperature, comfort and to help skin that is tender to the touch [ ]

iv) Style selection of clothing [ ]

v) Tips on available alterations for current fashion trends [ ]

vi) Training in clothing adjustments to make so that clothing fits better [ ]

vii) Information on swimwear [ ]

viii) Information on evening wear [ ]

ix) Information on nightwear [ ]

x) Information on places to purchase garments to accommodate post-surgery needs

Others   (specify) [ ]

_____

23. State any other challenge, factor or issue that affects you that has not been captured fully by the questions above. _____

_____

Appendix III: Consent Form

Title of the research study: Clothing challenges faced by breast cancer survivors; a case study of selected hospitals in Nairobi, Kenya.

Research Supervisors: Dr. Beatrice Imo and Dr. Gertrude Were

C/o university of Eldoret,

 P.O. box 1125-30100 Eldoret.

Principal researcher: Edith N Thairu

C/o university of Eldoret,

P.O. box 1125-30100 Eldoret.

Mobile No. 0720270867

 Emergency Contact: Edith Njoki Thairu

 Mobile No. 0720270867

 E-mail: ethairu@kyuc.ac.ke or editexthaish@hotmail.com

You are asked to take part in a research study. Your participation is voluntary which means you can choose whether or not to participate. If you decide to participate or not to participate there will be no loss of benefits to which you are otherwise entitled. The research team is going to talk with you about the study and give you this consent document to read. You do not have to make a decision now; you can take the consent document home and share it with friends and family.

If you do not understand what you are reading, do not sign it. Please ask the researcher to explain anything you do not understand, including any language contained in this form. If you decide to participate, you will be asked to sign this form and a copy will be given to you. Keep this form, in it you will find contact information and answers to questions about the study. You may ask to have this form read to you.

What is the purpose of the study?

The purpose of the study is to determine the clothing challenges faced by women who have received treatment for breast cancer and how to come up with their clothing solutions. This study is being conducted for a master's dissertation.

Why was I asked to participate in the study?

You are being asked to join this study because;

You are a female who is 18 years or older

You had received treatment for breast cancer at least 3 months prior to this study

Your treatment was either of the following; mastectomy, lumpectomy, radiation therapy, chemotherapy, or hormonal therapy.

How long will I be in the study? How many other people will be in the study?

The study will take place over a period of three months. This means that we will ask to fill a questionnaire that will take a period of between 30-60 minutes touching on challenges faced by BCSs in Kenya. You will be one of 273 people in the study.

Where will the study take place?

You will be asked to fill a questionnaire at a location that is most comfortable for you

What will I be asked to do?

You will be asked to fill a questionnaire that will take a period of between 30-60 minutes touching on challenges faced by BCSs in Kenya. All measures will be adhered to protect confidentiality

What are the risks?

There are no known risks of participating in this study. A potential risk may involve the psychological discomfort of explaining challenges faced by BCSs in Kenya. Should you feel ongoing discomfort at any time, you may stop filling the questionnaire for a few moments, or you can decide to stop participating entirely.

How will I benefit from the study?

You will know in advance the challenges you are bound to face regarding your clothing requirements, and you will therefore be better prepared to face them. You may use the study recommendations to make plans on the kind of fabrics to purchase and the styling modifications necessary to suit your new shapes.

Your family will benefit from the study by getting the right information that will guide them in the purchase of the right kind of clothes for you.

The hospitals where you go for follow ups will benefit through getting information that will help to educate, and implement clinical interventions to support survivors like you as you struggle with the physical, psychological and appearance-related aspects of breast cancer treatment

The Ministry of Health may use the recommendations of this study to come up with a policy to create awareness programmes that would educate survivors like you about their clothing needs and where to get them. The Ministry can also create subsidies for you so that you can acquire prostheses cheaply in government hospitals.

The information from this study will help fashion designers and tailors develop designs that would fit your requirements with minimal adjustment.

The results of this study will also inform the apparel industry in meeting your needs and assist retail shops in providing an environment conducive for your clothing selection.

Your family member will know the level of your need considering that the specialized clothes you need may be more expensive than the ordinary clothes of the same quality.

What other choices do I have?

Your alternative to being in the study is to not be in the study.

What happens if I do not choose to join the research study?

You may choose to join the study or you may choose not to join the study. Your participation is voluntary.

There is no penalty if you choose not to join the research study. You will lose no benefits or advantages that are now coming to you, or would come to you in the future. There are no negative consequences should you choose not to participate in the study.

When will the study be over? Can I leave the study before it ends?

The study is expected to end after all participants have filled the questionnaire and all the information has been collected. The study may be stopped without your consent for the following reasons:

The Principal researcher feels it is best for your safety and/or health-you will be informed of the reasons why.

You have not followed the study instructions

The Principal researcher or the research department at the University of Eldoret can stop the study anytime

You have the right to drop out of the research study at any time during your participation. There is no penalty or loss of benefits to which you are otherwise entitled if you decide to do so. If you no longer want to be in the study, you may simply drop out with no questions asked.

How will confidentiality be maintained and my privacy be protected?

The research team will make every effort to keep all the information you provide during the study strictly confidential, as required by law. The research department at the University of Eldoret is responsible for protecting the rights and welfare of research volunteers like you. The research department has access to study information. Any documents you sign, where you can be identified by name will be kept in strict confidentiality and all written or oral presentations of the entire respondent will be destroyed when the study is over.

What happens if I am injured from being in the study?

This study poses no risk and there are no foreseen injuries associated with it.

Will I have to pay for anything?

There are no costs to you for participating in the study.

Will I be compensated for participating in the study?

You will not be compensated for participating in the study

Who can I call with questions, complaints or if I'm concerned about my rights as a research subject?

If you have questions, concerns or complaints regarding your participation in this research study or if you have any questions about your rights as a research subject, you should speak with the Principal Researcher mentioned on page one of this form. If the

researcher cannot be reached or you want to talk to someone other than the principal researcher, youmay contact the Office of Ethics research Committee with any question, Contact the KNH/UoN/ERC. (Chairperson, Tel. No. +2542726300 Ext 44102) or submit your concerns or complaints at the University of Eldoret

When you sign this document, you are agreeing to take part in this research study. If you have any questions or there is something you do not understand, please ask. You will receive a copy of this consent document.

Signature of respondent _____

Name of respondent _____

Date_____

Signature of witnesses_____

Name of witnesses_____

Date_____

Appendix IV: Subject Recruitment Flyer

Volunteers Needed

For a Master Research Study

Are you a woman 18 years and above who has been diagnosed and received treatment for breast cancer at least three months ago**? If so, please consider**

Participating in a Dissertation **Masters Research** study to determine the clothing challenges faced by BCSs in Kenya. This study will help to assess the clothing challenges faced by BCSs in their endeavour to resume their normal life following surgery**.**

Participating is confidential and involves:

- ❖ **A confidential background Survey identifying demographic information for purposes of the study**
- ❖ **A signed consent**
- ❖ **A questionnaire**

If you are interested in this participating, please contact:

Edith N. Thairu

P.O. box 1125-30100 Eldoret.

E-mail;ethairu@kyuc.ac.ke / editexthaish@hotmail.com

Mobile No. 0720270867

Appendix V: Study Area Map

Source: Republic of Kenya (2012)

Appendix VI: Introduction Letter

University of **Eldoret**
flame of knowledge and innovation

P. O. Box 1125-30100 ELDORET
Emailhodfcs@uoeld.ac.ke

DEPARTMENT OF FAMILY AND CONSUMER SCIENCES

28ThFebruary, 2016
The National Commission for Science Technology & Innovation (NACOSTI)
P. O. Box 30623-00100
NAIROBI
Dear Sir/Madam,
RE: INTRODUCTORY LETTER FOR EDITH THAIRU
I wish to confirm that Edith Thairu registration number (AGR/PGF/14/13) is a second year student registered in the M. Sc Apparel and Fashion Design program here at the University of Eldoret. As part of the requirements for her degree program, she is expected to carry out a research project and write a thesis, thereafter disseminate the findings. The purpose of this letter is to request you to provide her with a research permit to enable her carry out her research. The title of her research is 'Clothing challenges facing breast cancer survivors (BCSs) in selected hospitals in Nairobi.' I wish to assure you that this research is for academic purpose only.
 Kindly accord her the necessary assistance.
Thank you for your continued support.
Yours Sincerely,

DR. GERTRUDE M. WERE
HEAD, DEPARTMENT OF FAMILY & CONSUMER SCIENCES

Appendix VII: Research Permit

THIS IS TO CERTIFY THAT:
MS. EDITH NJOKI THAIRU
of UNIVERSITY OF ELDORET, 143-10300
kerugoya, has been permitted to
conduct research in *Nairobi County*

on the topic: *CLOTHING CHALLENGES FACED BY BREAST CANCER SURVIVORS. A CASE STUDY OF SELECTED HOSPITALS IN NAIROBI, KENYA*

for the period ending:
22nd March, 2017

Permit No : NACOSTI/P/16/88573/9890
Date Of Issue : 30th March, 2016
Fee Recieved : Ksh 1000

....
Applicant's
Signature

Director General
National Commission for Science,
Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

NACOSTI

National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE
PERMIT

Serial No. A 8289

CONDITIONS: see back page

Appendix VIII: ERC Research Approval

UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355

KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/86

7th March, 2016

Edith N. Thairu
Reg. No.AGR/PGF/14/13
University of Eldoret
P O BOX 1125-30100
ELDORET

Dear Edith

Revised research proposal: Clothing challenges faced by Breast Cancer Survivors: A case study of selected Hospitals in Nairobi, Kenya (P731/11/2015)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH-UoN ERC) has reviewed and **approved** your above proposal. The approval period is from 7th March 2016 – 28th 6th March 2017.

This approval is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH-UoN ERC before implementation.
c) Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
f) Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
g) Submission of an *executive summary* report within 90 days upon completion of the study.
   This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website **http://www.erc.uonbi.ac.ke**

Yours sincerely,

PROF. M.L. CHINDIA
SECRETARY, KNH-UoN ERC

c.c.   The Principal, College of Health Sciences, UoN
         The Deputy Director, CS, KNH
         The Chair, KNH-UoN ERC
         The Assistant Director, Health Information, KNH
         Supervisors: Dr.Beatrice Imo, School of Agriculture and Biotechnology, University of Eldoret
                      Dr. Gertrude Were, School of Agriculture and Biotechnology, University of Eldoret

Appendix IX: Budget

Component	Description	Cost Kshs.
Proposal Writing	Internet services Stationery Printing, photocopy and binding Note pads Clip boards, Pens	40,000
Data Collection	Research Assistant's Expenses Transport & Accommodation Airtime for local calls Printing and photocopy Pens and Pencils	60,000
Thesis writing	Photocopying and binding	30,000
Totals		**130,000**

Appendix X: Time Schedule

Study activities	Jan – Oct 2015	Nov 2015 – Jan 2016	Feb – June 2016	July 2016- Mar 2017	April 2017_ Feb 2018	Dec 2018
Proposal writing and presentation	■					
Reconnaissance survey and data collection		■				
Data Coding and Analysis			■			
Thesis writing and Correction				■		
Final Report Presentation, submission and defense					■	
Graduation						■