

UNIVERSITY OF NAIROBI

DEPARTMENT OF SOCIOLOGY AND SOCIAL WORK

**KNOWLEDGE, ATTITUDE AND PRACTICE OF BREAST SELF-
EXAMINATION AMONG FEMALE STUDENTS IN INSTITUTIONS OF
HIGHER LEARNING: A CASE OF MOUNT KENYA UNIVERSITY**

BY

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C50/74550/2014

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER
OF ARTS IN SOCIOLOGY (MEDICAL SOCIOLOGY), UNIVERSITY OF
NAIROBI**

NOVEMBER 2018

DECLARATION

I Esther Kija Sayi hereby declare that this research project is my original work and has not been presented for the award of a degree to any college or university.

Signature.....

Date.....

Esther Sayi

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Supervisor's Declaration

This research project has been submitted with my approval as the university supervisor.

Signature.....

Date.....

Professor Edward Mburugu

Supervisor

DEDICATION

This project is devoted to my family, especially my daughter Lianne, and parents for their encouragements when I was undertaking this project and studies.

ACKNOWLEDGEMENTS

First I thank God for being there for me always, and giving me good health, wisdom and strength.

Secondly, I extend my gratitude to my supervisor, Professor Edward Mburugu, for creating adequate time to guide me through the research project.

Lastly, I also wish to recognize my family and friends for their continuous encouragement and support throughout my study.

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LIST OF ABBREVIATIONS AND ACRONYMS

BSE	Breast Self-Examination
CBE	Clinical Breast Examination
CTFPHC	Canadian Task Force on Preventing Health Care
HBM	Health Belief Model
SPSS	Statistical Package for Social Sciences
TPB	Theory of Planned Behaviour
TRB	Theory of Reasoned Behaviour
UAE	United Arab Emirates
WHO	World Health Organization

ABSTRACT

This study is about breast self-examination practice by female students in Mount Kenya University. It was informed by studies by other scholars who indicated that the number of young women getting breast cancer was on the rise. This is worrying, and so the main objective of the study was to establish the extent of awareness of risk factors causing breast cancer among female students. The specific objectives guiding the study included finding out if female students were aware of the cancer risk factors, examining their perceptions on breast cancer, determining the level of breast self-assessment and finally ascertaining the reliability of practices used by female students in breast self-examination.

A survey was thus conducted where 180 respondents were issued with questionnaires to collect quantitative data out of which 176 were successfully returned. About 64% of these participants had the belief that the most suitable method to control breast cancer was by early detection including other likely preventive measures. Majority of the participants (98%) knew about BSE but less than half practice it. They had learnt this through radio and television. But only, 18% embraced BSE; the main reasons for failure of BSE screening included absence of adequate knowledge on the procedure and lack of time.

It was concluded that there was a great need to create awareness through sharing of information on breast cancer, risk factors and BSE. The study recommends further study to be conducted on what factors could contribute to the improvement of women's attitude and practice of BSE.

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Breast cancer is the major cause of mortality among women globally than any other form of cancer, Jemal et al. (2006). However, Daood (2017) notes that the statistics in Saudi Arabia where deaths associated with breast cancer stands at 19.8% at the age of 45 years which is a clear indication of the threat posed by the disease. Previously the disorder was believed to develop after women attained 45 years, but the dynamics are changing and young women are falling victims to the illness (Adebamawo, 1999). Detecting young women with breast cancer is very important because the illness at this age is more aggressive and victims rarely survive. According to Okobia and Okonofua (2006), clinical breast examination (CBE), mammography as well as breast-self-examination (BSE) serves as the three recommended screening methods for the disorder. Irrespective of their age, all women should be motivated to engage in BSE to help in limiting cases of mortality associated with breast cancer (Hackshaw & Paulo, 2003). The practice is considered imperative in enabling women to understand the structure as well as the composition of individual normal breasts thus helping to detect any abnormality (Plesnicar et al., 2004). Larkin (2001) asserts that there is a need for women to undergo BSE at least once monthly to enhance in limiting breast cancer risk.

There are lifelong benefits associated with promoting self-care, a path that is taken at a young age. For instance, if women are taught about breast self-care, it may serve in encouraging trends like BSE as well as seeking professional breast examinations on a regular basis (Ludwick & Gaczkowski, 2001). According to Budden (1995), engaging in health behaviors like BSE is a critical empowerment tool for women to enable them

to take responsibility and control of their health. BSE education and adhering to the exercise by young women helps in promoting healthy behaviors that serve as the basis for mammography as well as breast examination in later stages in life. Irrespective of the controversy surrounding the value of BSE, American Cancer Society (2013) and Hakama et al. (1995), recommends the practice as an option for breast self-awareness that may help in detecting the disease early.

Women derive benefits from BSE through gaining familiarity with the feel and appearance of their breast as well as the ability to detect any changes in the earliest time possible (American Cancer Society, 2013). The reason for support of continued BSE practice as a breast cancer screening process emanates from the ability of women to detect the disorder frequently on their own without the appearance of other symptoms (Levshin et al., 1998). Despite significant body of research regarding the disorder and BSE practice among females from 17 to 23 years, (Budden, 1995; Alsaif, 2004; & Budden 1999), very few studies have focused on information on the disorder and BSE practice for females in higher institutions of learning (Ludwick et al, 2001 & Milaat, 2000). Therefore, the current study intends to address the identified research gap. Scientific research has revealed that it is possible to prevent a third of all cancers and equally possible to cure a third others if diagnosed sufficiently. According to Parkin (1994) and World Health Organization (1997), these findings demand cancer control to be given priority in health programs, especially in the developing economies. In the quest to limit mortality incidents associated with the disease, an effective screening program must be put in place. This is best achieved through empowerment of female health workers as well as creating awareness amongst them about breast cancer screening programs. According to Nair and Nair (2005), any

measure that may help in preventing or identifying the disorder at an early stage is crucial towards saving lives and equally in improving health and wellbeing.

1.2 Statement of the Problem

WHO (2014) classifies breast cancer as the leading form of cancer among women from developed, middle-income, and third-world economies. Rates of the disease in middle-income and developing economies are on the rise due to urbanization. WHO (2014) asserts that mammography screening serves the only method that is effective, but it is applied in high resource settings. WHO (2014) further claims that there lacks evidence that supports the effect of BSE screening process.

However, some groups of researchers attribute the practice of BSE as essential in empowering women towards being responsible for their health. As such, engaging in BSE practice is imperative to raise awareness and pass knowledge among groups at risk of developing breast cancer as opposed to a screening method. According to the American Cancer Society (2014), BSE practice should be observed by women in their early 20s. In some countries, BSE is required to be conducted on a monthly basis. Examples of these countries comprise of Jamaica, Singapore, Mauritius, South Africa, and Namibia. In their study Wardle et al. (1995) surveyed female university students drawn from 20 European nations, the researchers revealed that 54% of the study respondents never engaged in BSE while 8 percent practiced on a monthly basis. In another study conducted by Shin et al. (2012) among university students in Korea, 27 percent of the study participants reported engaging in BSE practice. In other studies conducted among female university students 1.3% engaged in BSE monthly in Egypt (Boulos & Ghali, 2013), 36.7%-55.4% had engaged in BSE in Malaysia (Al-Naggar et al., 2013; Akhtari-Zaware et al., 2013), 19% engaged in BSE monthly in

Nigeria (Gwarzo et al., 2013), and 17.4% in Yemen (Ahmed, 2010). According to Wardle et al. (1995); Ahmed, (2010); Shin et al. (2012) and Al-Sharbatti et al. (2013), some of the notable factors that serve as barriers to BSE comprised of poor attitudes towards the practice and lack of awareness.

Vorobiof et al. (2001) observed that South African physicians have realized an alarming rate of breast cancer incidents among young black women from 1998. What is even more worrying due to increased cases of the disease among young black women is that they have the lowest survival rate due to seeking healthcare when it is already too late. The reason for delays before seeking healthcare professional services emanates from a tendency of the group to first seek consultation from traditional healers relating to lumps they experience in their breasts (Vorobi et al., 2001). Late diagnosis of breast cancer serves as the reason that subjects young women to lower survival rate as they have a tendency of seeking medical care when the disease is at advanced stages than their older counterparts.

Despite authorities recommending breast self-examination with an aim of limiting cases of breast cancer, BSE is still not widespread. Additionally, even with a quantifiable number of women possessing knowledge about the practice, and the resulting health benefits, they rarely practice it. In a study conducted by Pillay (2002), the researcher found out that one in five women was not aware of the disease, with half of them being unaware of its existence. The existing findings are imperative in the current research directed at the level of prevalence of breast cancer in Kenya.

1.3 Research questions

- i) Are female students in Mount Kenya University aware of the risk factors of breast cancer?
- ii) What is the level of perception of female students on breast cancer?
- iii) What is the knowledge level of Breast Self-Examination among female students in Mount Kenya University?
- iv) How do female students in Mount Kenya University practice BSE?

1.4 Objectives of the study

1.4.1 Main objective

The main objective of the study was to establish the extent of awareness of risk factors that cause cancer among female students in Mount Kenya University.

1.4.2 Specific objectives

- i) To find out if female students are aware of the risk factors that cause cancer
- ii) To examine the level of perceptions of female students on breast cancer
- iii) To determine the level of knowledge on breast self-examination among female students in Mount Kenya University
- iv) To ascertain the reliability of practices used by female students in breast self - examination

1.5 Justification of the Study

This type of research is important in the fields of health as well as social sciences. Data gathered will prove beneficial in gaining much knowledge about BSE exercise that as a result will help in developing programs of cancer prevention and intervention measures by the community.

1.6 Scope and Limitations of the study

This study was conducted in Mount Kenya University mainly in Thika and Nairobi campuses. The research project will examine awareness, knowledge and attitude on female student in breast self-examination. The study particularly sought to find out if these female students were aware of the risk factors that cause cancer and their level of perceptions of this disease. In addition, breast self-examination practice was examined in terms of how it works and also the challenges that affect this method.

In addition, the researcher visited health institutions and interacted with health practitioners in the area of breast cancer screening in order to collect qualitative data for the study. The researcher anticipated a limitation of time for instance, completing this study by September 2017. It was also a challenge to secure interviews with key informants who provided qualitative data for the study. But this time limitation was addressed by training enumerators to assist in data collection process and also securing a schedule and traveling at convenient times when the key informants and respondents could be found.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.0 Introduction

This chapter will address literature review providing an overview of previous researches conducted on knowledge and awareness of breast cancer and its risk factors. It introduces the framework for the case study that comprises the main focus of the research described in this study.

The three main theories used in relation to this study are; the health belief mode, theory of reasoned action and theory of planned behavior.

2.1 Literature Review

This section looks at critical literature review highlighting the knowledge gap spelt out in the problem statement.

2.1.1 Risk Factors for Breast Cancer

American Cancer Society (2017) attributes breast cancer as a general term that is used to refer to various cancers that develop from the breast tissue. The organization classifies the disorder as the uncontrolled growth of malignant tissue that is chronic. This malignant tissue growth happens in an independent approach without being controlled by the body. In a situation where cell division happens in an uncontrolled manner, it leads to the formation of a mass of extra tissue that is either benign or malignant. Non-cancerous or benign tumor cells are possible to remove as they stick to one body part. However, the situation is different with malignant or what is referred to as cancerous tumor cells as they have the ability to invade neighboring tissues and form secondary tumors (Lewis, 2005).

The spread of the malignant cells may happen to the draining lymph nodes especially near the armpit. According to (Rees, 2005), upon being affected, swelling, infection, or ulcer is experienced and possible spread of the cancer cells to the bloodstreams and other vital organs. Lewis (2005) asserts that a painless lump serves as the initial and most common sign of breast cancer. However, for most women aged 45 years and above breast cancer develop before a lump in the breast appears. There are other symptoms of breast cancer but appear in the advanced stages of the disorder. These comprise of bloody or spontaneous clear discharge from the nipple, indentation or retraction of the nipple, indentation or flattening of the skin over the breast, and change in breast size or contours. Other symptoms comprise of color change of the skin around the nipple and pitting or redness of the skin over the breast. It is equally important noting that there are other conditions as opposed to breast cancer that may lead to new size of breasts or even feel.

These changes happen through a natural process during menstrual cycle and pregnancy and may equally happen as a result of injury or infection. According to Agars and McMurray (1993), there is no recognized cause of breast cancer or primary preventive measures. There is a general belief that breast cancer is influenced by a variety of environmental, genetic, hormonal, and nutritional factors. Stern and Sekeres (2013) assert that because environmental and genetic factors work together, an individual with a genetic risk of suffering from breast cancer tends to be at a greater risk of developing the disorder if exposed to specific environmental influences. As age sets in, women are exposed to a higher risk of developing breast cases as evidenced with 80 percent of breast cancers being reported among women aged 45 years and above (Colditz and Stein, 2004). While it is possible for both genders to be

affected by breast cancer, women are at a higher risk as cases diagnosed in men amounting to less than 1 percent.

The family history of the disease equally serves as a major risk factor for developing the disease (Stern & Sekeres, 2004). According to Burke et al. (1999) and Koenig et al. (1998), two genetic mutations: BRCA1 and BRCA2 are associated with breast cancer that runs within the family. However, the vast majority of breast cancer is not as a result of inherited genes in that only from around five to ten percent of cases of breast cancer are associated with inheritance. Generally, these genes help in preventing cancer because they manufacture proteins that help cells to avoid abnormal growth. According to Rees (2005), if the genes have a mutation, their effectiveness in protecting breast cancer is breached.

Breast cancer risk is further influenced by early age menarche and also by delayed menopause especially if it happens after the age of 50 years (Press et al., 2000). Early menarche exposes breast tissue to oestrogen at a younger age and as a result, increasing overall lifetime exposure. According to Lewis (2005), if the first full-time pregnancy of a woman happens at the age of 30 years or fails to ever be pregnant, she is at a higher risk of suffering the disease. In the recent past, birth control pills usage has equally been associated with higher possibility of developing the disorder among women that have not attained the age of menopause (Vorobiof et al., 2001).

Additionally, higher risk of the illness connected to high dose radiation especially in instances where exposure happens during teenage years of breast development. However, Colditz and Stein (2004) argue that it is very rare for girls to be exposed to extreme levels of ionizing and are different to low dose radiation often utilized during mammograms as well as other forms of diagnostic radiography. Existing findings

disassociate exposure to low dose radiation with higher risk of developing the disorder. Mammographic breast density, smoking, lack of physical activity, poor diet, long-term hormone therapy, and excess weight are other risk factors associated with the disorder. According to Department of Health, Cancer Association of South Africa (2001), awareness of the risk factors together with regular screening schedules is an important measure towards dealing with the problem of breast cancer among women. As opposed to other forms of cancer, little focus has been directed on primary prevention measures of the disorder. Studies have examined the initial factors that seem primarily to rely on factors like personal lifestyle choices, first full-term pregnancy, smoking, alcohol consumption, and genetic together with environmental factors (Adami et al., 2002). The role played by sex hormones in the aetiology of uterine, cervical, as well as breast cancer has equally been established over the past three decades. Harvey and Darbre (2004) point out that extant research have revealed that oestrogen influences breast cancer etiology. According to Parkin and Fernandez (2006), in developed economies, 90 percent of breast cancers lack genetic etiology. Research is still being conducted in regards to the connection between secondhand smoking and breast cancer.

In their study, Golden-Kreutz et al. (2004) sought to assess the level of stress in women victims of breast cancer. Although the victims experienced stress upon diagnosis, the stress level was found to decline with time. This finding concurs with that of Edgar et al. (1992) where the researchers found a major decline of distress among women victims of breast cancer. Irrespective of the fact that stress declines with time, clinical interventions are not only deemed necessary, but equally beneficial. For instance, to improve quality of life outcomes, psychological and

behavioral interventions should happen at the time of initial diagnosis that is often coupled by high-stress levels (Berglund et al., 1994).

In their research, Stolley et al. (2006) found out that although survivors of the illness are motivated to change behaviors they encounter major limitations towards the process. Practitioners are encouraged to incorporate particular facilitators and consider potential barriers while dealing with victims of breast cancer.

2.1.2 Perceptions of Female Students on Breast Cancer

Australian National Breast Cancer Centre (2004), attributes the mortality rate of young women suffering from breast cancer is very high at around 72.4 percent especially those aged between 20 to 29 years. This makes the disease a major public health issue in the modern world. Women views about breast cancer vary based on their perceptions and experiences making it hard to give a general view of the feelings of young women regarding the disorder and what they attribute as individual risk.

Bryan (2001) claims that based on earlier research on breast cancer, young women held a general perception they were not at risk of suffering from the disorder, but rather believed it is an issue for older women. Limited knowledge and understanding of the disease serve as the main reason that makes young women fail to consider themselves at risk of suffering from the illness (Paul et al., 1999 & Vahabi, 2005). In a study conducted by Epstein et al. (1997), they found out that media campaigns towards the disease have improved public knowledge and awareness towards breast cancer. Young women are undergoing breast cancer checkups especially after experiencing close family members suffer from the disorder (Baum et al., 1994).

2.1.3 Breast Self-Examination Practice

Towards limiting cases of breast cancer and the associated mortality, a major strategy has been employed today, which is the development of effective detection programs. These programs comprise of regular clinical breast examinations (CBE), mammography screening for women aged 45 years and above, and regular BSE, often considered essential for early detection (Mason and White, 2008). According to Ozturk et al. (2000) and Ku (2004), regular BSE is recommended because of its convenience, simplicity, cost-effective, yet is non-invasive, and private.

According to Kurebayashi (1994); Ozturk et al. (2000) and Hill (1988), the method is associated with positive outcomes through a reduction in primary tumor size as well as consequent and more conservative medical intervention that do not require medical intervention. Irrespective of BSE's associated benefits, Ashton et al. (2001) notes that only 18 to 36 percent of women engage in BSE. Johnson and Dickson-Swift (2008) point out that older women are likely to engage in BSE considering that they have a higher perception of risk as opposed to their younger counterparts. This is primarily influenced by the existing knowledge that women aged from 45 years and above are at a higher risk to develop the disorder.

In their study, Friedman et al. (1998) sought to identify barriers to mammography use among younger women. In their findings, the researchers revealed factors like being busy as the limitation for using this screening tool. Additionally, non-elderly fail to access or use available information relating to the disorder. It is equally clear that less research has been directed and examining breast cancer among young women. According to Kroman et al. (2000), although there are some studies that have focused

on prognosis as well as diagnosis of young women, there is limited information related to knowledge and perceptions of the disease.

Although there is sufficient evidence demonstrating that early detection technology is effective, women are still reluctant to derive the benefits associated with the technology (Walker et al., 2004). In Kenya, the primary factor that limits women from taking advantage of these technologies is the cost of screening especially mammography that is very expensive (Walker et al., 2004). Additionally, according to Breast Cancer Advocacy Coalition (2008), breast health services in Kenya are not only dispersed but equally non-comprehensive. This is as a result of public health priorities at the national and county level failing to prioritize breast cancer.

While it is true that BSE is considered the best strategy for screening breast cancer, it is considered controversial in that some scholars have failed to establish evidence that it leads to decline of mortality associated with the illness (Thomas et al., 1997; Sagaidak and Mikhailov, 1993; Semiglazov et al., 2003; Nekhlyudov and Fletcher, 2001). Findings from these studies failed to establish any recognizable beneficial aspect of BSE in reducing breast cancer mortality. However, the researchers made suggestions that increased harm in respect to the increase of benign lesions as well as increase of biopsies conducted. Irrespective of these findings, it was agreed that removing BSE in the absence of mammography will not lead to a decline in breast cancer mortality (Thomas et al., 2002).

Therefore, what is required is to inform women practicing BSE that its efficacy is unproven and has the possibility of suffering from benign breast biopsy. Breast cancer advocacy groups have criticized scientific findings that attribute BSE to lead to harmful outcomes (Miller, 2001; Nekhlyudov & Fletcher, 2001; Lerner, 2002).

Towards increasing the practice of BSE, it is imperative to understand the decision-making process that underlies women BSE behavior. While some studies reveal a predictive role of self-identity (Armitage & Conner, 2001), others claims are opposed to promotion of behaviors like BSE claiming it has no major effects in the individual (Mason & White, 2008). Vast challenges emerge when conventional breast cancer programs are used among Africa women. As a result of the differences in cultural and health beliefs, their perception of cancer differs from the mainstream society's views (Forte, 1995). Therefore, interventions should take into account the cultural context of the targeted population (Agho et al., 2007).

During a discussion of culturally relevant health education intervention, it is possible to consider the dimensions of deep structure and surface (Resnicow et al., 1999). The deep structure is focused on the role of culture, environment, and historical as well as psychological factors affecting health behaviors. The surface structure, on the other hand, entails tailoring of materials and messages like settings, media channels, and language in a pattern that connects to the target population. When implementing health education interventions, it is equally important to create support networks with an aim of sustainable lifestyle changes. According to Heaney and Israel (2002), by utilizing existing social networks, it helps in providing the opportunity of facilitating informational, instrumental, and emotional support service towards promoting lifestyle change that is sustainable. In respect to developing economies, the World Health Organizations emphasize that prevention programs should inhibit entrenchment together with the spread of diseases associated with unhealthy lifestyles. Adequate knowledge of health is a critical factor towards making an informed choice relating to healthy lifestyle. According to Peltzer (2002), a notable

example of such knowledge is the reduction of smoking that is as a result of increased awareness of the associated health risks.

2.2 Theoretical Framework

Tolma, Reininger, Evans and Ureda (2006) opine that a sizeable number of studies have been examined regarding the factors that influence breast cancer screening behaviours discovered that better educated women consider going for screening checkups. Other than the above factors, women who stand a lower chance of having mammogram are the ones that lack care and insurance cover. Recent reviews show that less than a third (28%) of intervention studies that have been reviewed took place amid 1960 and 1997, based their researches on scientific approaches especially their methodology and data analysis (Meissner et al., 1998). In the current study, the literature will be anchored on the following theories that comprise of the health belief model, theory of reasoned action as well as the theory of planned behaviour.

2.2.1 The Health Belief Model

According to Hochbaum (1958), the Health Belief Model is a psychological theory that is intended to explain as well as predicting health behaviors. Achieving this happens through paying much attention to attitudes and individuals beliefs. This model was advanced in 1958 by social psychologists; Hochbaum, Rosenstock and Kegels who worked in U.S public health services. This has been used regularly to test many disorders including of breast cancer. This model holds that behaviours that are associated to health are driven by the perception of an individual on the threat that emanates from health problem and the value that is linked to his or her action towards mitigating the threat (Dündar et al., 2006). Under this model, someone may perceive himself or herself vulnerable for a disease or a severe illness (Kohler et al., 2003).for

example, a woman might perceive herself at risk of breast cancer if her mother or a member of the immediate family suffered from the disease. Some concepts are considered as predictors of health behavior towards BSE: the first one is the alleged risks that are associated with the disease or condition that might expose one to some moderate severity on his or her lifestyle. The first one is the perceived seriousness which is viewed and has at least some level of severity on one's lifestyle in order to practice BSE, if one was lost a loved one due to late detection, they might have a perception that breast cancer has no cure when detected in late stages hence develop a perception on the seriousness of the disease hence, leading to regular practice of BSE. The HBM claims that the beliefs and emotions of a woman relating to breast cancer have the ability to interfere with her perception about the level of seriousness of the disorder and as a result impact her BSE practice. Additionally, there is the aspect of perceived benefits; the level to which an individual believes that engaging in a specific practice to limit a condition is important. Where an individual believes that a behavior has more benefits, there is a high possibility to engage in the behavior. Moreover, the norms and pressures maintained by a social group that a person belongs to have the ability to influence the perceived health beliefs. For instance in the case of breast cancer, when a female student has knowledge on the risk factors of the disease and benefits of practicing BSE, then they are more likely to practice BSE more frequently .

There is also the aspect of perceived barriers that comprise behaviors that limit practicing BSE. If there are more perceived barriers associated with the performance of BSE, the test will happen less frequently. Some of the notable barriers associated with BSE comprise of pain, inconvenience, embarrassment, and fear of discovering a lump. According to Graham (2002), the other possible barrier relates to the health

motivation like in the case examples of media reports relating to prevention of breast cancer, associated benefits, and illness of a relative or close friend.

2.2.2 Theory of Reasoned Action

According to Fishbein and Ajzen (1975), the Theory of Reasoned Action attributes intention as the consequent antecedent of the behavior that is believed to lead to the motivation of behaving in a specific manner. On the other hand, the two factors that determine intention are subjective norms and the attitude towards the specific behavior. Attitudes are a result of salient beliefs regarding the expected outcomes that are a result of engaging in a specific behavior and eventual realization of the expected outcomes. Components of subjective norms comprise of an individual's perception relating to the social pressure of to perform or not perform the said behavior based on various individuals referred to as referents and the approval or disapproval of engaging in the behavior (Ajzen, 1991; In Mason and White, 2008).

Tolma et al. (2008) claim that the theory is based on the notion that most behaviors happen through volitional control, something that the authors claim is untrue for all behaviors. In addressing the model's weakness, Ajzen (1998) added the perceived behavioral construct to the model. There are two categories of individual behavioral control beliefs.

The first category comprises internal factors like the acquisition of skills, information skills, emotions and compulsions together with abilities. The second category comprises of external factors that are both environmental and situational factors external to a person. If individuals have more resources, opportunities and believe that there are limited obstacles, they have a greater perceived behavioral control. According to Tolma et al. (2006), perceived behavioral control ability to directly

control behaviors happens only where it reflects actual control with a certain degree of accuracy.

2.2.3 Theory of Planned Behavior

The theory of planned behavior (TPB) builds on the theory of reasoned action and has been considered as an imperative model in predicting both the intention and behavior. There are two main reasons that makes TPB theoretical framework appropriate while studying screening for breast cancer. First, the model provides room to help in understanding the cultural perspective that affects a behavior through the provision of a methodology for eliciting the salient cultural beliefs of the group under investigation (Poss, 2001). Secondly, the model takes into consideration environmental factors and the behavior of breast screening is not overly based on volitional control.

The TPB framework incorporates the construct of self-efficacy that relates to the confidence an individual feels about regarding performing a specific behavior that comprises of confidence in overcoming the hindrances in achieving the behavior (Bandura, 1986; In Tolma et al., 2006). According to Bandura (1991), there is a strong connection between self-efficacy with the judgments about what a person can do with the skills with less focus being directed on goal achievement or the actual control of the behavior. The main concern of perceived behavioral control, on the other hand, is directed on the ease or difficulty of the behavior based on the skills presence. According to Ajzen (1998) and In Tolma et al. (2006), this signifies that more focus is directed on the actual behavioral control. According to Bandura (1986), increasing self-efficacy is achieved in four ways. These comprise of mastery of the behavior as a result of successful performance, verbal persuasion together with reinforcement, emotional arousal management, and vicarious observation. According

to Mason and White (2008), women with a feeling that participating in health-promoting behaviors like BSE is beneficial to their self-concept should demonstrate stronger intentions of performing BSE.

Oebell et al. (1997) notes that young women with more positive attitudes towards self-concept are subjected to a greater social pressure of engaging in the behavior and they equally demonstrate higher levels of behavioral control relating to their ability in controlling behaviors that lead them to undertake practices like BSE. Additionally, younger women who have stronger intentions, as well as greater control over the practice of BSE, have a higher likelihood of engaging in the behavior. Existing findings relating to intentions and perceptions in predicting BSE behavior reveal the need to consider implementation strategies as they have proved to increase levels of BSE through the provision of a process that facilitates intentions retrieval from the memory (Prestwich et al., 2005).

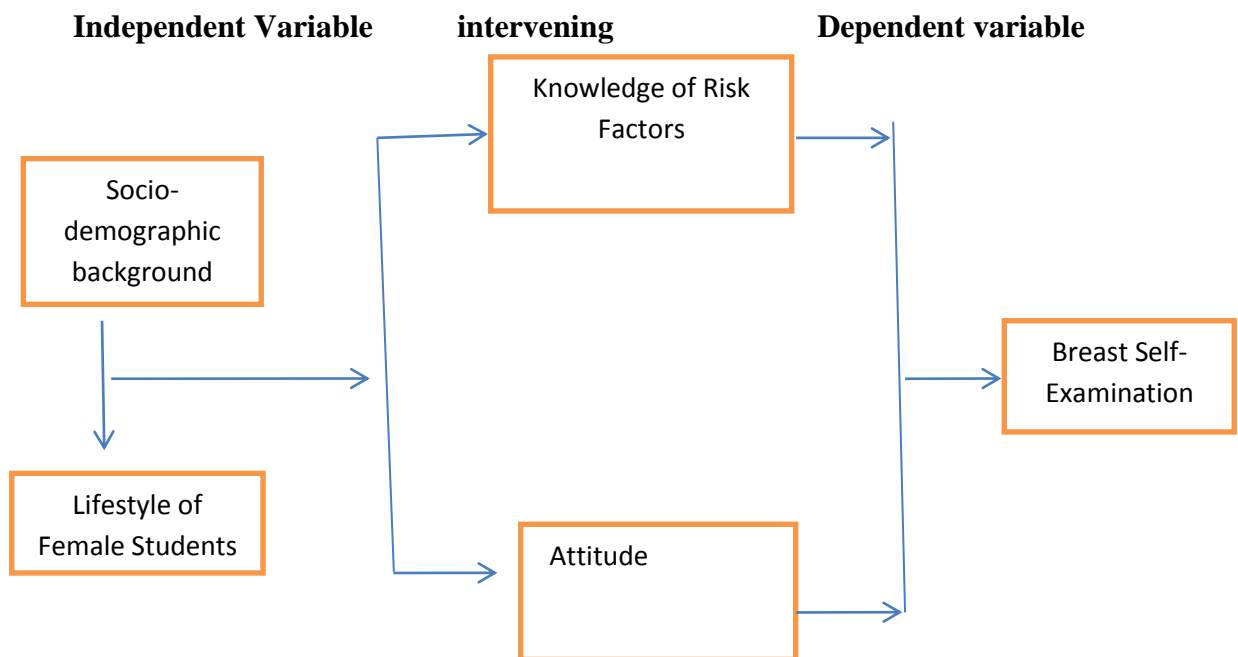
2.3 Conceptual Framework

In the current study, the conceptual framework is based on socio-demographic background factors and lifestyle habits of the female students as the independent variables and breast self-examination as the dependent variable. The intervening variables are the knowledge of risk factors to cancer and attitude. The socio-demographic background and lifestyles of female students are likely to inform the methods that the students use to prevent cancer. They will also be able to detect chances of cancer in early stages if they practice breast self-examination. A lifestyle that is healthy is an indication of consistency in being cautious about one's health behaviours in different activities including choice of diet, exercise, use of substance, as well as protective measures. Wisdom about health (or risk of awareness) is a

critical factor in making an informed choice about healthy lifestyle. For example, a decline in smoking might be a result of increased awareness about health related risks that cause cancer. Breast self -awareness is particularly important for young college students whose breasts are not fully developed for mammography. It is expected that when women adopt a positive attitude towards BSE, they are going to be informed on the benefits as well as its limitation and they will have more knowledge on breast cancer and why they should immediately change their behavior.

They shall become more aware of their feel and appearance of their breasts to enhance in noticing and detecting any change early enough.

Figure 2.1: Conceptual Framework for Breast Self-Examination and the associated Independent and Intervening variables



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section focuses on the procedures used in data collection and analysis. It brings into context the applied research design, sample size, methods of data collection together with instruments used, and finally the ethical considerations to be observed by the researcher.

3.2 Site Description

Mount Kenya University main campus is located in Thika town about two kilometres away from the central business district. It has 16 branches. There are slightly 6000 students in Nairobi and Thika branches alone. The number of female students is about more than half of the total, some residing inside college while others staying outside. Most students eat from within the campus cafeteria mainly junk foods such as chips, sausages and soft drinks. The university has a clinic which offers curative, family planning services, counseling among others.

3.3 Research design

The study relied on survey research design that relies on pretested self-administered questionnaires as tools for data collection and key respondent interviews to collect data. The researcher conducted a cross-sectional study through the use of a pre-tested structured self-administered quantitative questionnaire in Nairobi and Thika campuses of Mount Kenya University.

3.4 Unit of Analysis and Units of Observation

In the current study, the unit of analysis used was knowledge, awareness as well as attitude of breast self-examination practice among female students in Mount Kenya

University. The units of observation were the female students in Nairobi and Thika campuses who provided quantitative data for the study. In addition, ten key informants were included as units of observations to provide qualitative data.

3.5 Target Population

The study targeted a population of 3600 female students studying in Mount Kenya University in Thika (2000 female students) and Nairobi campuses (1600 female students). The study considered students across various years of study.

3.6 Sample Size and Sampling Procedure

3.6.1 Sample Size

According to Gay (1981) at least 10% of study population is an appropriate sample size for research especially in populations of 1000 people or fewer. As the population sample increases, the sample size gets smaller as a proportion of the population. Therefore the sample sizes for this study was 180 which represented the 5% of the 3600 female students from the study population. Stratified random sampling provides accurate representation of the population in any study (Kothari, 2004). In this study, the sample was stratified according to the colleges in which the female students are enrolled in Mount Kenya University.

The sample size was obtained by dividing the population in the stratum by the total population then multiplied by the intended sample size of 180 female students. This indicates that proportionate sampling was used to arrive at the sample size and from the two strata; participants were selected randomly to ensure equal chances of participation in the study.

3.6.2 Sampling Procedure

The study relied on stratified random sampling approach which was employed to draw respondents from the study population from various colleges in the university. Kothari (2004) asserts that stratified random samples give detailed information and more reliable data irrespective of the nature of study. Table 3.1 shows how the sample of 180 female students was distributed according to the two campus (Nairobi and Thika) and year of study.

Table 3.1: Sampling size by colleges

Campus	Target population	Sample	Year of study				Total
			1 st	2 nd	3 rd	4 th	
Thika campus	2000	100	25	25	25	25	100
Nairobi campus	1600	80	19	19	21	21	80
Total	3600	180	44	44	46	46	180

From table 3.1 above, proportionate sampling was used to arrive at the sample size and as a result, two strata were derived from the two campus from which the participants were selected randomly to give equal opportunities in participating in surveys.

Here, each stratum (campus) was sampled separately. Simple random sampling was utilized in choosing the participants from each campus. Respondents to be interviewed were identified through systematic sampling of female students in the college register or nominal roll, this formed a sampling frame where a sample size of 180 was collected (100 female students from Thika campus and 80 female students from Nairobi Campus). The procedure was to substitute names with cards, mix the cards picking one at a time until the target sample was reached. The last step was to

match the picked cards with actual names to form the sample for the study. This method merit of this approach is because it enabled the researcher to lower costs by randomly selecting samples in each stratum since the estimates based on each stratum was considered to be more reliable per unit cost. Again, all respondents in the strata had an equal chance of being chosen for the study.

3.7 Methods of Data Collection

While conducting this study, both qualitative and quantitative data was collected.

3.7.1 Collection of Qualitative Data

Qualitative data was gathered to complement quantitative data. Interview schedule were used to conduct interviews to the key informants which were both semi-structured and structured. The semi-structured ones are flexible in gathering in-depth information from the topic. To achieve the study objectives, the researcher relied on structured questions. In total, 10 key informants drawn from breast screening departments provide qualitative data for this study. These individuals have a superior knowledge on cancer screening methods and their limitations. In the process, a notebook and a recorder were used to keep record of responses given by the key informants.

3.7.2 Collection of Quantitative Data

Quantitative data was equally collected using questionnaires based on the tool's ability to collect information from large samples and uphold confidentiality. Therefore, 180 respondents were issued with questionnaires which constituted both open ended and closed questions. Closed ended ones dealt with objectives of the study while open ended ones provided an opportunity for clarity to the closed ended questions. Socio-demographic data was collected using the questionnaire from the

respondents that comprised on things like age, number of family members, marital status, history on the family in relation to breast cancer, individuals who suffered from the disease, individual history of breast lump, information on awareness, knowledge as well as practice of BSE, and information regarding possible limitations to practice BSE.

3.8 Ethical Considerations

Ethics involves moral principles that govern an individual's behaviour in conducting an activity. The researcher conducted this research with utmost care considering the nature of the information obtained.

Before the study was conducted, ethical as well as administrative approval was obtained from the authorities of Mount Kenya University for conducting this study. The study respondents comprised of female university students in various academic years, and for eligibility, the participants had to be 18 years or above. Approach was made to target students who showed interest. The study participants were required to give verbal consent once they were informed about the study objective. Additionally, the study participants were assured of their confidentiality and privacy.

3.9 Data Analysis

Once the data was gathered, it was saved in a personal computer. This was followed by a statistical analysis through the use of Statistical Package for Social Sciences (SPSS version 17) software. Qualitative data from key informants were descriptively analysed and placed under various themes based on the objectives of the research.

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter comprises of data analysis, presentation, as well as interpretation of the data collected in this research on the extent of awareness of risk factors of breast cancer among female students in Mount Kenya University. The analysis addresses the level of perceptions of female students on breast cancer. The level of BSE among female students and the reliability of practices they use in breast self-examination

4.1.1 Response Rate

Questionnaires were self-administered to 180 respondents out of which 176 were successfully completed and returned. In addition, ten key informants were interviewed to provide qualitative data for the study.

4.2 Background Information of Respondents

This variable proved imperative to the study as it enhanced the researcher to understand the background of study participants in terms of age, gender, and professional qualifications. The responses to each of the mentioned aspects are represented in the following sub-sections:

4.2.1 Age of Respondents

In order to establish the age group of study participants, they were asked to state their age. The following results were obtained;

Table 4.1: Age Distribution of the Respondents

Age	Frequency	Percentage (%)
18-20 years	20	11.4
21-25 years	82	46.6
26-30 years	53	30.1
31-50 years	21	11.9
Total	176	100.0

It is evident from table 4.1 above that those aged between 18-20 years were 11.4% while those between 26-30 years were 30.1%. Finally, those aged 31-50 years constituted the remaining 11.9%. According to a key informant, breast cancer incidence is low before attaining 40 years. So the implication of age is that in absolute term, with advancing age increasing the risk of the disease. Limited knowledge as well as lack of perceived risk together with inundation of the disorder's information focused on older females has a tendency of reinforcing the belief that only old women are at risk of developing the disorder.

4.2.2 Marital Status

The female students from Mt. Kenya University were asked to state their relationship status, the following response was obtained;

Table 4.2: Marital Status of the Respondents

Marital status	Frequency	Percentage
Single	121	68.8
Married	19	10.8
Divorced/separated	11	6.3
Cohabiting	25	14.2
Total	176	100.0

From the table 4.2 above, most of the study participants were single and comprised of 68.8%, followed by those who were cohabiting (14.2%) then married and divorced/separated respectively (10.8% and 6.3%). The implication of marital status here is that some respondents lack awareness associated with breast cancer for instance, in the case of the connection between the disease and use of contraceptive pills. An explanation to this situation is best derived from the participants' marital status, as majorities were not married. This as a result leads to low level of knowledge of contraceptives as a risk factor for the disorder thus calling for the need to incorporate programs on the disorder among the study population.

4.2.3 Education Level of Respondents

The respondents were asked to state their highest education level and the responses were as below;

Table 4.3: Education Level of Respondents

Professional qualification	Frequency	Percentage
Masters	23	13.1
Bachelor's degree	74	42.0
Diploma	59	33.5
Certificate	8	4.5
Form iv	12	6.8
Total	176	100.0

Table 4.3 shows that majority of the respondents had only attained bachelor's degree level total of 42.0%, followed by diploma level (33.5%), then by masters level (13.1%), form four level (6.8%), and certificate level (4.5%). The education level here implies awareness level. Women have to be taught on early intervention techniques so as to minimize the risks of this disease. Research has shown that insufficient knowledge of breast cancer may lead to inaccurate perception of this disease.

4.2.4 Religion

The researcher wanted to know whether the respondents belonged to any religion and all of them agreed. The following responses were given;

Table 4.4: Religion of the Respondents

Response	Frequency	Percentage
Roman catholic	57	32.4
Anglican	76	43.2
Hindu	12	6.8
Islam	31	17.6
Total	176	100.0

From the table above, majority of the respondents were Christian (32.4% and 43.2%) followed by Muslims (17.6%) and finally Hindu (6.8%). The implication is that religion will affect health through factors such as social support, positive health behaviours, and positive psychological states and thus there will be an association between religiousness and health.

4.2.5 Employment status of the respondents

The following responses were collected concerning the employment status of the respondents;

Table 4.5: Employment Status

Response	Frequency	Percentage
Still schooling	89	50.6
Unemployed	29	16.5
Formal employment	22	12.5
Self employed	39	22.2
Total	176	100.0

Majority of the respondents were still schooling (50.6%). 16.5% were not employed while 22.2% were self-employed. Only 12.5% were formally employed. The implication is that those with a source of income can afford breast cancer screening services other than BSE such as mammography than those who are unemployed or still schooling.

4.2.6 Year of Study of the respondents

The researcher wanted to know the year of study of the respondents and the following results were obtained;

Table 4.6: Year of study

Year of study	Frequency	Percentage
5 th	12	6.8
4 th	28	15.9
3 rd	32	18.2
2 nd	55	31.3
1 st	49	27.8
Total	176	100.0

From what can be seen in the table 4.6 above, 27.8% of respondents were in their first year, 31.3% in second year, 18.2% in third year, and 15.9% in fourth year. Those in fifth year were 6.8%. Most of the respondents were relatively new in college (27.8% and 31.3%) and this suggests that they might still not be aware of availability of reproductive health services available within the university such as breast cancer screening.

4.2.7 Residential Status of the Respondents

The following results were obtained concerning the respondents' residential status;

Table: 4.7: Residential Status

Residence	Frequency	Percentage
University hostels	83	47.2
Outside but within university	74	42.0
At home	19	10.8
Total	176	100.0

According to table 4.7 above, 10.8% of respondents resided in their homes and commuted to college. Those who stayed outside but within the university amounted to 42.0%. Majority of respondents stayed inside university hostels. The implication is that those inside university have easier access to medical services such as breast screening or health advice from medical personnel at the university health center unlike those who have to commute to campus every day.

4.2.8 Channels of Knowledge of Breast Cancer

All respondents agreed to have heard about breast cancer and answered correctly that it was a cancer of the breasts that affected women. Regarding how they came to know about it, the following responses are shown in Table 4.8.

Table 4.8: Channels of creating awareness on breast cancer

Response	Frequency	Percentage
Radio/ TV	84	44.7
Newspaper	35	19.9
Medical professional	36	20.5
Friends/family	21	11.9
Internet	7	4.0
Total	176	100.0

Among the respondents studied, 84 (44.7%) of them had heard of breast cancer through radio/TV, 35 (19.9%) through newspapers, 36 (20.5%) through medical professionals and 21 (11.9%) through family or friends. Those who got the information from the internet amounted to 4.0%. Regarding whether they had ever heard of its causes, 93.2% agreed.

4.3 Risk Factors to Cancer

4.3.1 Causes of breast cancer

As portrayed in table 4.9, close to 7 percent of the study respondents considered exposure to sun as the cause of breast cancer. 11.6% and 8.5 percent of the respondents attributed inheritance and exposure to x-rays before attaining the age of 30 years as the cause of the disorder respectively. 26.8% and 5.5% believed that the cause of the disorder was menopause as a result of overweight as well as early menarche respectively. For the majority of the participants (40%), they attributed the disorder to use of contraceptives for a prolonged period.

Table 4.9: causes of breast cancer

Response	Frequency	Percentage
Exposure to sun	12	7.3
Can be inherited	19	11.6
Exposure to ex-rays before 30 years of age	14	8.5
Overweight after menopause	44	26.8
Prolonged use of contraceptive	66	40.2
Early menarche	9	5.5
Total	164	100.0

4.3.2 Family members who were victims of breast cancer

When questions were raised about history of family members with the disease, the following responses were given in Table 4.10.

Table 4.10: Breast cancer victims in the family

Response	Frequency	Percentage
Mother	5	13.9
Grandmother	2	6.1
Sister	7	21.2
Aunt	8	24.2
Cousin	9	27.3
Extended family member	5	15.2
Total	36	100.0

The respondents gave the following response, 13.9% mentioned their mother, 6.1% their grandmother, and 21.2% mentioned their sister. Those who mentioned their aunts were 24.2% while 27.3% referred to their cousins. Those who referred to their extended family members amounted to 15.2%.

4.3.3 Risk factors associated with breast cancer

In table 4.11 below, 70.9 percent of the study participants were on the view that inactivity together with sedentary lifestyle were associated with the disorder. Additionally, 7.9 percent and 10.9 percent associated the disorder with excessive consumption of alcohol and smoking respectively. The rest (10.3%) associated breast cancer risk with use of bleaching soaps and creams.

Table 4.11: Risk factors of breast cancer from the respondents

Response	Frequency	Percentage
Excessive alcohol consumption	13	7.9
Excessive cigarette smoking	18	10.9
Inactivity and sedentary lifestyle	117	70.9
Use of cream and soap that can change skin color	17	10.3
Total	165	100.0

4.3.4 Knowledge of early signs and symptoms of breast cancer

Table 4.12 indicates the views that were gathered regarding early signs and symptoms of breast cancer.

Table 4.12: Early Signs and Symptoms of Breast Cancer

Response	Frequency	Percentage	N
Lumps in the breasts	67	87.0	77
Change in the breast size	56	72.7	77
Change in the colour of the skin of the breasts	39	50.6	77
Change in the nipples of the breasts	58	75.3	77
Abnormal discharge from the nipples	68	88.3	77
Pain in the breasts	61	79.2	77

From table 4.12 above, it is clear that breast cancer can manifest itself variously, and that is why majority of the respondents ticked more than one response. Some mentioned lumps in the breasts (87.0%), and change in the size of the breasts (72.7%), others referred to changes in breast skin color (50.6%), changes in the nipples (75.3%), and abnormal discharge from the nipples (88.3%). About eighty percent said that there would be pain in the breasts. A doctor who was one of the key informants stated that, *‘There are many signs and symptoms of breast cancer, but the early signs include mastalgia meaning pain in the breast that doesn’t go away after your monthly period, swelling of the breast and nipple retraction, a new lump that does not go away after your monthly period, nipple discharge from one nipple that is either yellow, red or brown , unexplained skin irritation, redness and dimpling on the breast skin .However, breast lumps and nipple retraction may serve as major key warning signs of the disease.’*

4.3.5 Prevention of breast cancer

Concerning how breast cancer can be prevented, respondents gave the following views;

Table 4.13: Breast cancer prevention

Response	Frequency	Percentage	N
Dieting	77	43.8	176
Exercise	98	55.7	176
Vaccination	58	40.0	176
Breast examination	112	63.6	176

Majority of the respondents (63.6%) felt that breast examination is the best way of preventing breast cancer because prevention is better than cure and this concurs with a

key informant from ministry of health stated that, *'There are different ways of preventing breast cancer or rather reducing the risk of the disease like exercising, eating a healthy diet and so on. but the most effective preventive measure is regular Breast self examination because early detection is the best approach to control the disease.'* Other causes mentioned included a healthy diet (43.8%); exercising (55.7%) and vaccination (40.0%) were for vaccination. Only 8.5% of respondents were covered by a medical health insurance but only seven students out of these confirmed that the insurance covered financing of both cancer screening methods.

4.4 Perceptions of female students on breast cancer

The following information was obtained from the respondents concerning their perceptions on breast cancer.

4.4.1 Causes of breast cancer and effect of early screening

In Table 4.14 below, 11.9% of the respondents strongly agreed and only, 6.8% were in agreement that a curse was one of the causes of the disorder, 23.9% respondents strongly agreed and only, 5.1% agreed that breast feeding was a cause of breast cancer, 11.9% respondents strongly agreed and only 5.7% agreed that breast cancer was as a result of witchcraft. These responses are attributed to cultural beliefs.

Table 4.14: Extent to which respondents agree on causes of breast cancer and effects of early screening

Causes of breast cancer	Extent to which respondents agree					
	Disagree strongly (1)	Disagree (2)	Neutral (3)	Agree (4)	Agree strongly (5)	Totals N (%)
Is a curse	76 (43.2%)	44 (25%)	23(13.1%)	12 (6.8%)	21 (11.9%)	176(100%)
Results due to breast feeding	83 (47.2%)	23 (13.1%)	19 (10.8%)	9 (5.1)	42 (23.9%)	176(100%)
Caused by witchcraft	117 (66.5%)	22 (12.5%)	6(3.4%)	10 (5.7%)	21 (11.9%)	176(100%)
Smoking increases its risk	78 (44.3%)	37 (21.0%)	3 (1.7%)	22(12.5%)	36 (20.5%)	176(100%)
May be inherited	85 (48.3%)	12 (6.8%)	13(7.4%)	12 (6.8%)	54(30.7%)	176(100%)
Results due to breast injury	62 (35.2%)	31 (17.6%)	14 (8.0%)	22(12.5%)	47(26.7%)	176(100%)
Early screening prevents breast cancer	168 (95.4%)	2 (1.1%)	1 (0.6%)	1 (0.6%)	4 (2.3%)	176(100%)
Screening leads to loss of breasts	44 (25.0%)	46 (26.1%)	1 (0.6%)	8 (4.5%)	77(43.8)	176(100%)

In table 4.14 above, it was reported that 20.5% respondents strongly agreed and 12.5% agreed that smoking increases the risk of breast cancer, 30.7% of the respondents strongly agreed and only 6.8 agreed that breast cancer might be inherited. One would have expected a high response, hence the need for enhanced health education. It was further discovered that 26.7% of the study participants strongly agreed and only, 12.5% agreed breast cancer was a result of breast injury, 2.3% respondents strongly agreed and only, 0.6% respondents agreed that early screening prevents breast cancer, 43.8% respondents strongly agreed and only, 4.5% agreed that

screening led to loss of breasts. These responses are too high, one would have expected very low or no agreement at all. Thus, there is need for health education.

4.4.2 Factors that influence breast self-examination

Table 4.15 below shows that 46% of the respondents strongly agreed and only, 16% agreed that the history of cancer of a family member influenced clinical self-examination decision and mammography. This is because family history is one of the leading causes of breast cancer. Regarding the consequences of presenting advanced cancer and its influence on breast self-examination, the findings showed that 56.3% respondents strongly agreed and only, 16.5% agreed. What influenced this response is the cancer stage by a victim that as a result influences BSE.

Table 4.15 Factors likely to influence decision on clinical self-examination and mammography/ breast scan next year

Possible Factor	Extent to which respondents agree					
	Disagree strongly (1)	Disagree (2)	Neutral (3)	Agree (4)	Agree strongly (5)	Totals N (%)
Family history of breast cancer	55 (31.3%)	23 (13.1%)	1 (0.6%)	16 (9.1%)	81 (46.0%)	176(100%)
Consequence of presenting with advanced cancer	17 (9.7%)	22 (12.5%)	9 (5.1%)	29(16.5%)	99 (56.3%)	176(100%)
Serious concern that BSE will be painful	69 (39.2%)	32 (18.2%)	5 (2.8%)	16 (9.1%)	54 (30.7%)	176(100%)
Fear of finding cancer	30 (17.0%)	32 (18.2%)	1 (0.6%)	7 (26.7%)	66(37.5%)	176(100%)
Valuability and importance of breast cancer screening	27 (15.3%)	28 (15.9%)	10 (5.7%)	56 (31.8%)	55 (31.3)	176(100%)

Whether BSE was painful on influencing breast self-examination, the findings showed that 30.7% respondents strongly agreed and 9.1% agreed. This was as a result of whether fear of finding cancer influenced breast self-examination, the findings showed that 37.5% respondents strongly agreed and 26.7% agreed. The reason for this feedback is because most female students who fear breast cancer undertake self-examination. Further, 31.3% of the participants strongly agreed and another, 31.8% were in agreement that vulnerability and importance of breast cancer screening influenced clinical self-examination decision. The reason for this feedback is because exposure and the importance of breast cancer screening inform of BSE among female students.

4.4.3 Factors likely to influence cancer screening uptake

In Table 4.16 below, 48.9% respondents strongly agreed, 23.9% agreed that cultural practice was a factor that influenced cancer screening, 44.3% respondents strongly agreed and 33.5% respondents agreed that religious practices led to cancer screening. These responses show that there's need for health education to appreciate the importance of cancer screening. It was further revealed that 52.8% respondents strongly agreed and only, 13.1% respondents agreed that stigma associated to cancer was a factor which led to cancer screening. This is an indication that there is need for education on the factors that influence cancer screening. In addition, it was discovered that 63.1% respondents strongly agreed and 13.1% respondents agreed that the cost of breast scan influenced cancer screening. This is indeed true since some people fail to get screened due to cost of a breast scan. On whether socio-economic status was a factor that influenced cancer screening, 43.8% respondents strongly agreed and 31.8% respondents agreed that socio-economic status influenced cancer screening, 31.8% respondents strongly agreed and 22.7% respondents agreed that distance to screening

facilities influenced cancer screening. This is response rate should be lower since access to screening facilities should not be a hindrance to cancer screening. On whether the level of education was a factor that influenced cancer screening, 34.1% respondents strongly agreed and 23.3% agreed. This response is expected to be higher since the level of education greatly influences cancer screening.

Table 4.16: Probable factors likely to influence cancer screening uptake among female students

Factors likely to influence cancer screening uptake	Extent to which respondents agree					Totals N (%)
	Disagree Strongly	Disagree	Neutral	Agree	Agree Strong	
Cultural practices	21 (11.9%)	16 (9.1%)	11(6.3%)	4(23.9%)	86 (48.9%)	176(100%)
Religious practices	17 (9.7%)	18 (10.3%)	4(2.3%)	59(33.5%)	78(44.3%)	176(100%)
Stigma associated to cancer	31 (17.6%)	23 (13.1%)	6(3.4%)	23(13.1%)	93 (52.8%)	176(100%)
Cost of a breast scan	28 (15.9%)	10 (5.7%)	4(2.3%)	23(13.1%)	111(63.1%)	176(100%)
Socio-economic status	21 (11.9%)	9 (5.1%)	13(7.4%)	56(31.8%)	77 (43.8%)	176(100%)
Distance to screening facilities	44 (25.0%)	27 (15.3%)	9(5.1%)	40(22.7%)	56 (31.8%)	176(100%)
Level of education	33 (18.8%)	36(20.5%)	6(3.4%)	41(23.3%)	60 (34.1%)	176(100%)
Perception that breast screening is not important	49 (27.8%)	34(19.3%)	5(2.8%)	38(21.6%)	50(28.4%)	176(100%)
Social and work related commitments	52(29.5%)	21(11.9%)	6(3.4%)	44(25.0%)	53(30.1%)	176(100%)

The findings further discovered that, 28.4% respondents strongly agreed and 21.6% agreed that perception influenced cancer screen. This response is expected to be

higher since perception drives cancer screening among patients. Lastly, 30.1% respondents strongly agreed and 25.0% agreed that social and work related commitments influenced cancer screening. This response is expected to be lower since these are not key hindrances of cancer screening. Research has shown that there is a significant link between knowledge of BSE and practice.

4.5 Knowledge Level of Breast Self-Examination

When asked about whether they had heard of breast self- examination, 98% of respondents agreed and mentioned the following sources of information;

4.5.1 Sources of Information on breast cancer

Table 4.17 below shows that eighty one respondents (47.1%) had heard of breast self-examination through radio/TV, 28 (16.3%) through newspapers, 33 (19.2%) through medical professionals and 23 (13.4%) through family or friends. Those who got the information from the internet were 4.1%. Further, 52.9% of these respondents claimed the procedure of Breast Self-examination was demonstrated to them. Research shows that medical involvement in community education is relatively limited in third world countries. Less than half of the respondents have not practiced BSE though most of them have heard about it.

Table 4.17: Indication of source of information on breast cancer

Sources of information	Frequency	Percentage
Radio/ TV	81	47.1
Newspaper	28	16.3
Medical professional	33	19.2
Friends/family	23	13.4
Internet	7	4.1
Total	172	100.0

Insufficient knowledge as well as ignorance has been identified by Lancet (2002) as a major reason for not practicing BSE. Thirty two of them (18%), who were already practicing the procedure themselves, various items they were looking for in the examination as shown in Table 4.18 below:

Table 4.18: Items respondents were looking for during breast self-examinations

Items they were looking for	Frequency	Percentage
Lumps in the breast	8	25.0
Inverted nipples	5	15.7
Nipples abnormal discharges	9	28.1
Change in the breast skin textures such as redness, pain and tenderness	7	21.9
Change in the size and shape of the breasts	3	9.4
Total	32	100.0

According to the Table 4.18, 25.0% of respondents were looking for lumps in the breast, 15.7% for inverted nipples, 28.1% for nipples abnormal discharges, and 21.9% for changes in the breast skin textures like redness, tenderness as well as pain. The rest were looking for changes in breast shape and size.

4.5.2 Reasons for not practicing BSE

Those who were not practicing breast-self-examination cited reasons listed in Table 4.19 below.

Table 4.19: Reasons cited for not practicing BSE

Reason	Frequency	Percentage
BSE makes me feel so funny	13	9.3
BSE will be embarrassing to me	11	7.9
It will make me feel unpleasant	8	5.7
Lack of knowledge on how to do BSE	56	40.0
I don't have time for that	52	37.1
Total	140	100

From the table above, 9.3% claimed that BSE would make them feel so funny, it was embarrassing (7.9%), unpleasant (5.7%), and did not know how to do it (40.0%). About thirty seven percent of them confessed they did not have time to do BSE. One of the key informants who is a lecturer in health studies and a health worker in the ministry of health stated that, *'I have observed that many females do not practice BSE due to lack of knowledge on how to do it, or why it is important to practice it. Majority of the female students are aware of the term BSE but they do not know how to go about it in terms of the procedure.'* The table below represents the views of respondents on the right age for practicing BSE;

4.5.3 Age group of practising BSE

Table 4.20 below shows the age brackets for breast self-examination.

Table 4.20: Age group of respondents in breast self-examination

Age group	Frequency	Percentage
15-19 years	34	22.5
20-29 years	55	36.4
30 and above	62	41.1
Total	151	100.0

Those who felt that BSE should be carried out by women from the age of 15 years were 22.5%, while those aged 20-29 years were 36.4%. Forty one percent claimed that it should happen when a woman is above 30 years while the rest did not have a clue on what age was best. The following were given as the advantages of BSE;

4.5.4 Advantages of BSE

In Table 4.21 below, twenty three percent of respondents claimed BSE would help women understand breast's size and shape 23.3%, 7.6% believed it would make breasts more firm and majority (69.2%) mentioned the practice helps in detecting breast lumps at an earlier stage.

Table 4.21: Advantages of BSE

Advantages	Frequency	Percentage
It helps to know the shape and size of the breast	40	23.3
It is done to make it more firm	13	7.6
It helps to detect breast lump earlier	119	69.2
Total	172	100.0

According to a key informant who is a physician, *it is a known fact that BSE can lead to women detecting breast lumps at an early stage as many breast cancer patients in Kenya had reaped the benefits of early detection through BSE practice and moreover, BSE is painless, easy to do, does not involve any cost, non-invasive and can be practiced by all women irrespective of literacy level.*

When asked what they could do when they notice a lump on the breast, the respondents gave the following views;

4.5.5 Action to take upon discovery of a lump in the breast

Table 4.22 below shows various actions taken by respondents upon discovery of a lump in the breast.

Table 4.22: Action upon discovery of a lump in the breast

Action to take	Frequency	Percentage
I go for treatment from a traditional healer	8	4.5
Ignore	16	9.1
Visit a clinic for further diagnosis	123	69.9
Don't know	29	16.5
Total	176	100.0

From this table, 4.5% would seek treatment from a traditional healer, 9.1% would ignore, and 69.9% would visit a clinic for further diagnosis while the remaining 16.5% would not know what to do in the event they discovered a lump on their breast. These actions were reiterated by a key informant (Nurse) who remarked that, *'internationally, breast cancer is killing many women. Therefore, in case of any detection of a lump in the breast one should immediately rush to the nearest health facility. This is because there is need to seek early medical attention in order to detect the disease at an early stage so as to increase chances of a cure of the deadly*

disease.’ The fact that some respondents would ignore or did not know what they ought to do if they discovered a lump in their breast is a guide to providers of health education not to limit information to elderly ladies who feel more vulnerable but also to younger women in order to create awareness. For those who conducted the procedure of BSE, the researcher wanted to know how frequent they did so and the following results were collected;

4.5.6 Frequency of BSE procedure

From table 4.23 below, 25.0% of respondents practiced BSE daily, 53.1% weekly, 15.6% monthly and 6.3% yearly.

Table 4.23: Frequency of BSE procedure

Frequency	Frequency	Percentage
Daily	8	25.0
Weekly	17	53.1
Monthly	5	15.6
Yearly	2	6.3
Total	32	100.0

Only 43.8% of respondents knew other possible methods used for detecting the disease, could talk of mammography, ultrasound, CBE and BSE are used as screening tools.

About 90% of the respondents admitted that they were afraid to think about breast cancer and termed the disease as expensive and with stigma. A key informant (Doctor) stated that, ‘*women should practice BSE once a month around four to five days after the first day of their menstrual cycle when the swelling of the breasts have*

gone back to normal. Very few women follow this frequency due to lack of knowledge of the required frequency.'

4.5.7 Availability of Educational Materials

Table 4.24 below represents views of respondents concerning availability of public educational materials at health facility that would educate on breast cancer prevention;

Table 4.24: Availability of Educational Materials on Breast Cancer Prevention

Response	Frequency	Percentage
Yes	45	25.6
No	55	31.3
Not sure	76	43.1
Total	176	100.0

Those who acknowledged availability of educational materials on breast cancer prevention were 25.6% and commented that those materials were adequate while those who disagreed were 31.3%. Forty three percent of respondents were not sure of the availability of these materials in health facilities near them. Fifty two percent of respondents acknowledged reading materials regarding health promotion and prevention of breast cancer.

4.5.8 Frequency of Listening to Radio

Ninety seven percent who owned a radio gave the following responses as their frequency of listening to radio;

Table 4.25: Frequency of Listening to Radio

Frequency	Frequency	Percentage
Three to four times a day to specific programmes	78	45.6
Three to four times a day to specific programmes but never heard information regarding breast cancer prevention being delivered on radio	44	25.7
Three to four times a day to specific programmes and heard information regarding prevention of breast cancer prevention being delivered	49	28.7
Total	171	100.0

In Table 4.25 above, less than half of the participants listed to specific programs 3 to 4 times a day. In addition 25.7 percent listened to specific programs but never heard about the breast cancer. The table also shows 28.7 percent of the respondents heard prevention methods on the radio. A key informant (public health worker) said, ‘*radio is one of the most popular media that could reach a wide audience.*’

4.5.9 Frequency of Watching Television

Those who owned a television were 43.2% and these were their responses on how often they watched. Findings are shown in table 4.26 below;

Table 4.26: Frequency of Watching Television

Frequency	Frequency	Percentage
Evenings in a day I watch specific programmes	41	53.9
Three to four times a day I watch specific programmes but never viewed information regarding breast cancer prevention being delivered on television	17	22.4
Three to four times a day I watch specific programmes and view information regarding prevention of breast cancer being delivered on television	18	23.7
Total	76	100.0

From table 4.26 above, 53.9% of the respondents watched television during evenings in a day to specific programmes. About 22% watched television three to four times a day to specific programmes but never viewed information regarding breast cancer prevention being delivered on television. Research has shown that visual media has played a big role in creating more awareness on the disease. Therefore, it has made more women to have regular screening thus minimizing the deaths that are associated with this monster.

4.5.10 Presence of religious/feminist organizations

Table 4.27 below, shows that 31.8% of respondents agreed that religious/feminist organizations existed near them which distributes information to females as well as improving their participation in screening programs while 21.6% claimed that such organizations never existed near them.

Table 4.27: Presence of religious/feminist organizations that disseminate information on breast cancer screening

Response	Frequency	Percentage
Yes	56	31.8
No	38	21.6
Not sure	82	46.6
Total	176	100.0

Over 46% were not sure. Regarding whether the women shared the acquired information with their peers as well as educating them on the issues concerning the disease, more than half of the respondents admitted this as a fact while the rest denied citing that every woman was expected to get the knowledge out there by themselves.

4.6 Breast self-examination by female students in Mount Kenya University

About 90% of respondents could remember and mention the health facility they usually attend for the purpose of screening. Results are as shown in table 4.28 below;

Table 4.28: Screening frequency for breast cancer

Response	Frequency	Percentage
Everyday	31	19.6
One day per week. Specify	28	17.7
Two days per week. Specify	17	10.8
Three days per week. Specify	22	13.9
No knowledge	60	38.0
Total	158	100.0

Results from the table above indicate that 19.6% of respondents claimed screening of breast cancer was done every day, 17.7% claimed every Wednesday of the week, 10.8% claimed it was done every Wednesday and Friday of the week, 13.9% claimed Mondays, Wednesday and Friday of the week while majority (38.0%) had no knowledge.

Only 29% of respondents acknowledged that health workers ever gave them information to encourage them to be screened and this happened during the cancer awareness week in the university where the main message was to encourage early screening for detection so as prevent breast cancer, a message which was clear, concise, and well accepted. It is commendable to note that most of them were willing to practice BSE if taught.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter reviews the summary of the study outcomes, conclusions and recommendations in line with the research objectives.

5.2 Summary

5.2.1 Awareness on Risk Factors of Cancer

According to the findings of the study, several risk factors to breast cancer were pointed out such as exposure to x-rays before the age of 30 years, overweight after menopause (26.8%) and the prolonged use of contraceptives (40.2%).

Other risk factors according to the respondents' beliefs were, 70.9 percent was associated on inactivity and sedentary lifestyle. 7.9 percent and 10.9 percent associated the risk of the disease with excessive consumption of alcohol and smoking respectively. 10.3 percent associated breast cancer risk with use of bleaching soaps and creams.

Other risk factors that were cited include exposure to medical radiation and cigarette smoking. Lack of exercise and eating of fatty meals were pointed out as risk factors.

Findings revealed there is a vast lack of knowledge relating to the risk factors associated with breast cancer. Respondents who revealed knowledge about a victim of the disease had slight knowledge than their counterparts without such experience.

The other research variables like academic level, marital status, age, high school attended, and gender had minimal impact in affecting understanding of the disease's risk factors. Furthermore, differences emerged between students in medical programs and their counterparts in other programs. Family history served as the primary risk

factor of breast cancer. However, respondents were generally unaware of the long-run risks associated with early menarche, oral contraceptives, obesity, hormone replacement therapy, or possible benefits associated with early child birth and breast feeding.

5.2.2 Perceptions of Female Students on Breast Cancer

Female students in Mt. Kenya University have the following perceptions on breast cancer, 11.9% of the respondents strongly agreed and only, 6.8% were in agreement that a curse was one of the causes of the disease, 23.9% of respondents strongly agreed and only, 5.1% agreed that breast feeding was a cause of breast cancer, 11.9% respondents strongly agreed and only 5.7% agreed that breast cancer was as a result of witchcraft. These responses are attributable to cultural beliefs.

It was reported that 20.5% respondents strongly agreed and 12.5% agreed that smoking increased the risk of breast cancer, 30.7% of the respondents strongly agreed and only 6.8 agreed that breast cancer might be inherited. One would have expected a high response, hence the need for enhanced health education.

It was further discovered that 26.7% of the study participants strongly agreed and only, 12.5% agreed breast cancer was a result of breast injury, 2.3% respondents strongly agreed and only, 0.6% respondents agreed that early screening prevents prevented breast cancer, 43.8% respondents strongly agreed and only, 4.5% agreed that screening led to loss of breasts. These responses are too high, one would have expected very low or no agreement at all. Thus, there is need for health education.

Majority of the respondents who did not practice BSE had fear of being diagnosed with breast cancer as well as having no symptoms after practicing BSE, were the main barriers of not practicing BSE. This study shows there is need for more training

programs on breast cancer. The programs are meant to attract attention of women on early detection of the disease. Thus, they should undergo regular screening of their breasts.

5.2.3 Knowledge Level of Breast Self –Examination

About 98% of respondents had knowledge about BSE in Mount Kenya University but less than half of them practiced it. About 31% of females had satisfactory knowledge about the frequency of BSE, and when to start practicing BSE. Findings revealed there is a vast lack of knowledge relating to the risk factors associated with breast cancer. Respondents who revealed knowledge about a victim of the disease had slight knowledge than their counterparts without such experience.

5.2.4 Reliability of practice used by female students in breast self examination

Findings reveal that only 18% of the respondents practice BSE .The respondents cited the following reasons as to why they do not practice BSE. From the table above, 9.3% claimed that BSE would make them feel so funny, it was embarrassing (7.9%), unpleasant (5.7%), and did not know how to do it (40.0%). About (37%) of them confessed they did not have time to do BSE.

The respondents were asked about the frequency of BSE, 25.0% of respondents practiced BSE daily, 53.1% weekly, 15.6% monthly and 6.3% yearly.

It is evident that most female students in Mt. Kenya do not practice BSE due to lack of knowledge on BSE procedure, how often it should be practiced and its Reliability.

5.3 Conclusion

In conclusion, most of the respondents in this study were aware of BSE but very few practice it. The students' knowledge level on BSE was generally unsatisfactory which could have affected the practice of BSE.

Breast self-examination has been recognized as the only practicable as well as rational methodology in timely detection of breast cancer particularly in third world countries. Bearing in mind the considerable role that can be played by BSE in settings that have insufficient resources; there is a pressing necessity for interventions to implement in addition to strengthening BSE in the current cancer wakefulness as well as screening platforms. Similarly, in order to bond the widespread knowledge - application gap, health training in addition to wakefulness movements should be systematized to empower the community on the roots, risk factors as well as methods of preventing breast cancer from affecting them.

Though, the indication on BSE is flawless, there is no help to breast cancer transience and outcomes propose that BSE might do extra damage than good. The awareness on breast cancer makes women to have knowledge of the role they can play in fighting breast cancer.

5.4 Recommendations

Programs on making the community more aware of breast cancer can make women to prevent more deaths that are associated with this menace. More training programs should be introduced in order to create more awareness to women in developing countries. The programs will make them to detect the disease at an early stage thus reducing deaths that are related with this disease. Lastly, Health workers should promote BSE during their interaction with female patients.

REFERENCES

- Abdel-Fattah, M., Zaki, A., Bassili, A., El-Shazly, M., & Tognoni, G. (2000). Breast Self- Examination practice and its impact on breast cancer diagnosis in Alexandria, Egypt. *Eastern Mediterranean Health Journal*, 6 (1), 34-40.
- Adami, H. O., Hunter, D., & Trichopoulos, D. (2002). *Textbook of Cancer Epidemiology*. Oxford: Oxford University Press.
- Agars, R. N., & McMurray, A. (1993). An evaluation of comparative strategies for teaching Breast Self-Examination. *Journal of Advanced Nursing*, 18, 1595-1603.
- Ajzen, I. (1988). *Attitudes, personality and behavior*. Chicago: Dorsey.
- American Cancer Society (2003). *Cancer Facts and Figures 2003*. Atlanta, Georgia, American Cancer Society.
- Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A
- Ashton, L., Karnilowicz, W., & Fooks, D. (2001). The incidence of belief structures associated with Breast Self- Examination. *Social Behavior and Personality*, 29 (3), 223-230.
- Australian National Breast Cancer Centre. (2004). *Clinical Practice Guidelines for the Management and Support of Younger Women with Breast Cancer*. Camperdown, NSW: National Breast Cancer Centre.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50, 248-287.
- Baum, M., Saunders, C., & Meredith, S. (1994). *Breast cancer: A guide for every woman*. Oxford: Oxford University Press.
- Baxter, N., & Canadian Task Force on Preventive Health Care. (2001). Preventive HealthCare, 2001 update: Should women be routinely taught Breast Self - Examination to screen for breast cancer? *Canadian Medical Association Journal*, 164, 1837-1846.
- Berglund, G., Bolund, C., Gustafsson, U. L., & Sjoden, P. O. (1994). One-year follow-up of the —Starting Again! group rehabilitation programme for cancer patients. *European Journal of Cancer*, 30 (12), 1744-1751.
- Bryan, A. D. (2001). Performance of breast self-exam: An interaction with age. In: Wechsberg, W. M. (Ed.) *Prevention Issues for Women's Health in the New Millennium*. New York: Haworth Press.
- Buxton, J. A., Bottorf, J. L., Balneaves, L. G., Richardson, C. G., McCullum, M., Ratner, P. A., & Hack, T. (2003). Women's perceptions of breast cancer risk: Are they accurate. *Canadian Journal of Public Health Ottawa*, 94 (6), 422-426.

- Buxton, J. A., Bottorf, J. L., Balneaves, L. G., Richardson, C. G., McCullum, M., Ratner, P. A., & Hack, T. (2003). Women's perceptions of breast cancer risk: Are they accurate? *Canadian Journal of Public Health Ottawa*, 94 (6), 422–426.
- Calle, E. E., Martin, L. M., Thun, M. J., Miracle, H. L., & Heath, C. W. Jr. (1993). Family history, age and risk of fatal breast cancer. *American Journal of Epidemiology*, 138 (9), 675–681.
- Cancer Association of South Africa. Department of Health (2006). *Research Report of the Cancer Association of South Africa*. Johannesburg: Cancer Association of South Africa
- Carney, P. A., Miglioretti, D. L., Yankaskas, B. C., Kerlikowske, K., Rosenberg, R., Rutter, C. M., Geller, B. M., Abraham, L. A., Taplin, S. H., Dignan, M., Cutter, G., & Ballard-Barbash, R. (2003). Individual and combined effects of age, breast density, and hormone replacement therapy use on the accuracy of screening mammography. *Annals of Internal Medicine*, 138 (3), 168–175.
- Colditz, G. A. & Stein, C. J. (2004). *Handbook of Cancer Risk Assessment and Prevention*. Sudbury, Massachusetts: Jones and Bartlett Publishers.
- Dixon, J. M., & Hortobagyi, G. (2000). Treating young patients with breast cancer: The evidence suggests they should all be treated with adjuvant therapy. *British Medical Journal*, 320, 457–458
- Dundar, P. E., Ozmen, D., Ozturk, B., Haspolat, G., Akyildiz, F., Coban, S., & Cakiroglu, G. (2006). The knowledge and attitudes of Breast Self - Examination and mammography in a group of women in a rural area in Western Turkey. *Bio-Medical Central Cancer*, 6, 43-55.
- Edgar, L., Rosberger, Z., & Nowlis, D. (1992). Coping with cancer during the first year after diagnosis. Assessment and intervention. *Cancer*, 69, 817-828.
- Fishbein, M. & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behaviour: An Introduction to Theory and Research*. Reading, Massachusetts: Addison-Wesley.
- Forte, D. A. (1995). Community-based breast cancer intervention program for older African American women in beauty salons. *Public Health Reports*, 110, 179–183.
- Golden-Kreutz, D. M., Browne, M. W., Frierson, & Anderson, B. L. (2004). Assessing Stress in Cancer Patients: A Second-Order Factor Analysis Model for the Perceived Stress Scale. *Assessment*, 11, 216-223
- Graham, M. E. (2002). Health beliefs and self breast examination in black women. *Journal of Cultural Diversity*, 23, 123-127
- Harvey, P. & Darbre, P. (2004). Endocrine disruptors and human health: Could oestrogenic chemicals in body care cosmetics adversely affect breast cancer incidence in women? A review of evidence and call for further research. *Journal of Applied Toxicology*, 24 (3), 167–176.

- Heaney, C. A., & Israel, B. A. (2002). Social networks and social support. In: Glanz K., Rimer, B. K., & Lewis, F. M. (Eds), *Health Behavior and Health Education: Theory, Research, and Practice*. San Francisco, California: Jossey-Bass.
- Hochbaum, G. M. (1958). *Public Participation in Medical Screening Programs: A Sociopsychological Study (Public Health Service Publication no. 572)*. Washington, DC: Government Printing Office
- Johnson, N., & Dickson-Swift, V. (2008). 'It usually happens in older women': Young women's perception about breast cancer. *Health Education Journal*, 67 (4), 243-257.
- Kohler, C., Grimley, D., & Reynolds, K. (2003). Theoretical approaches guiding the development and implementation of health promotion programs. In: Raczynski, J., Kreuter, M. W., Steger-May, K., Bobra, S., Booker, A., Holt, C. L., Lukwago, N., & Skinner, C. S. (Eds), *Sociocultural Characteristics and Responses to Cancer Education Materials Among African American Women. Cancer Control – Cancer, Culture and Literacy Supplement*, 10 (5), 37–44.
- Kroman, N., Jensen, M. B., Wohlfahrt, J., Mouridsen, H. T., Andersen, P. K., & Melbye, M. (2000). Factors influencing the effect of age on prognosis in breast cancer: Population based study. *British Medical Journal*, 320, 474–478.
- Kurebayashi, J. (1994). The practice of Breast Self- Examination results in the earlier detection and better clinical course of Japanese women with breast cancer. *Surgery Today*, 24 (4), 337–341.
- Levin, J. S., & Taylor, R. J. (1997). Age differences in patterns and correlates of the frequency of prayer. *The Gerontologist*, 37, 75-88.
- Lewis, J. (2005). *Your Guide to Breast Cancer*. London: Hodden Arnold.
- Lincoln, C. E., & Mamiya, L. H. (1990). *The black church in the African American experience*. Durham, North Carolina: Duke University Press.
- Mason, T. E. & White, K. M. (2008). Applying an extended model of the theory of planned behaviour to breast Self-Examination. *Journal of Health Psychology*, 13, 946-955
- Mason, T. E. & White, K. M. (2008). Applying an extended model of the theory of planned behaviour to breast Self-Examination. *Journal of Health Psychology*, 13, 946-955.
- Meissner, H. I., Breen, N., Coyne, C., Legler, J. M., Green, D. T., & Edwards, B. K. (1998). Breast and cervical cancer screening interventions: An assessment of the literature. *Cancer Epidemiology, Biomarkers & Prevention*, 7, 951-961.
- Michael N Okobia, Clareann H Bunker, Friday E Okonofua and Usifo Osime: Knowledge attitude and practice of Nigerian women towards breast cancer: A cross sectional Study. *World Journal of Surgical Oncology*, 4:11

- Miller, A. B., Baines, C., & Harvey, B. (2001). We disagree with Baxter's criticism of previous studies. *eCanadian Medical Association Journal*, Sep 17
- Okobia MN, Bunker CH, Okonofua FE, et al. *Knowledge, attitude and practice of Nigerian women towards breast cancer: A cross sectional study*. *World J SurgOncol* 2006; 4:11-6.
- Omolase Charles Oluwole . (2008). Awareness, knowledge and practice of breast-self-examination amongst female health workers. *A Nigerian Community. Sudan JMS*, 3 (2), 199-201
- Orbell, S., Hodgkins, S., & Sheeran, P. (1997). Implementation intentions and the theory of planned behavior. *Personality and Social Psychology Bulletin*, 23 (9), 945–954.
- Ozturk, M., Engin, V. S., Kisioglu, A. N., & Yilmazer, G. (2000). Effects of education on knowledge and attitude of Breast Self-Examination among 25+ years old women. *Eastern Journal of Medicine*, 5 (1), 13-17.
- Ozturk, M., Engin, V. S., Kisioglu, A. N., & Yilmazer, G. (2000). Effects of education on knowledge and attitude of Breast Self-Examination among 25+ years old women. *Eastern Journal of Medicine*, 5 (1), 13-17.
- Parkin, D. and Fernàndez, L. (2006). Use of statistics to assess the global burden of breast cancer. *The Breast Journal*, 12 (1), 70–80.
- Parkin, D. and Fernàndez, L. (2006). Use of statistics to assess the global burden of breast cancer. *The Breast Journal*, 12 (1), 70–80.
- Patterson, R. E., Neuhouser, M. L., Hedderson, M. M., Schwartz, S. M., Standish, L.J., & Bowen, D. J. (2003). Changes in diet, physical activity, and supplement use among adults diagnosed with cancer. *Journal of the American Dietetic Association*, 103 (3), 323-328.
- Paul, C., Barratt, A., Redman, S., Cockburn, J., & Lowe, J. (1999). Knowledge and perceptions about breast cancer incidence, fatality and risk among Australian women. *Australian and New Zealand Journal of Public Health*, 23 (4), 396–400.
- Pillay, A. L. (2002). Rural and urban South African women's awareness of cancers of the breast and cervix. *Ethnicity and Health*, 7, 103-114.
- Poss, J. E. (2001). Developing a new model for cross-cultural research: Synthesizing the health belief model and the theory of reasoned action. *Advances in Nursing Science*, 23, 1-15.
- Press, N., Fishman, J. R., & Koenig, B. A. (2000). Collective Fear, Individualized Risk: the social and cultural context of genetic testing for breast cancer. *Nursing Ethics*, 7 (3), 237-249.
- Prestwich, A., Conner, M., Lawton, R., Bailey, W., Litman, J., & Molyneaux, V. (2005). Individual and collaborative implementation intentions and the promotion of Breast Self- Examination. *Psychology and Health*, 20 (6), 743–760.

- Rees, G. (2005). *Understanding Cancer*. Dorset: Family Doctor Publications.
- Resnicow, K., Braithwaite, R., Ahluwalia, J., & Baronowski, T. (1999). Cultural sensitivity in public health: Defined and demystified. *Ethnicity and Disease*, 9, 10–21.
- Agho, A. O., Mosley, B. W., Rivers, P. A., & Parker, S. (2007). Utilization of mammography services among elderly rural and urban African American women. *Health Education Journal*, 66 (3), 245-261.
- Rosenberg, R., & Levy-Schwartz, R. (2003). Breast cancer in women younger than 40 years. *International Journal of Fertility*, 48, 200–205.
- Rosolowich, V., & Winnipeg, M. B. (2006). Breast Self- Examination. *Journal of Obstetrician and Gynaecology Canada* 28 (8), 728–730.
- Siegel, K., Gluhoski, V., & Gorey, E. (1999). Age-related distress among young women with breast cancer. *Journal of Psychosocial Oncology*, 17 (1), 1–20.
- Smith, R. A., Saslow, D., Sawyer, K. A., Burke, W., Costanza, M. E., Evans, W. P., Forster, R. S., Hendrick, E., Eyre, H. J., & Sener, S. (2003). American Cancer Society Guidelines for Breast Cancer Screening: Update 2003. *A Cancer Journal for Clinicians*, 53 (3), 141-169.
- Stern, T. A. & Sekeres, M. A. (2004). *Facing Cancer. A Complete Guide for People with Cancer, their Families and Caregivers*. New York: MacGraw Hill Companies.
- Stolley, M. R., Sharp, L. K., Wells, A. M., Simon, N., & Schiffer, L. (2006). Health Behaviours and Breast Cancer: Experiences of Urban African American Women. *Health Education Behaviour*, 33, 604-624
- Terry, D., & O'Leary, J. (1995). The theory of planned behavior: The effects of perceived control and self-efficacy. *British Journal of Social Psychology*, 34, 199-220.
- The Breast Cancer Advocacy Coalition.(2008). *Position statement on breast cancer*. Cancer Association of South Africa. The Breast Cancer Advocacy Coalition.
- Thomas, D. B., Gao, D. L., & Ray, R. M. (2002). Randomized trial of breast self-examination in Shanghai: Final results. *Journal of National Cancer Institute*, 94, 1445–1457.
- Thomas, D. B., Gao, D. L., & Self, S. G., Allison, C. J., Tao, Y., Mahloch, J., Ray, R., Qin, Q., Presley, R., & Porter, P. (1997). Randomized trial of Breast Self-Examination Shanghai: Methodology and preliminary results. *Journal of the National Cancer Institute*, 89 (5), 355–365.
- Tolma, E. L., Reininger, B. M., Evans, A. & Ureda, J. (2006). Examining the Theory of Planned Behaviour and the Construct of Self-Efficacy to Predict Mammography Intention. *Health Education Behaviour*, 33, 233-251.
- Vahabi, M. (2005). Knowledge of breast cancer and screening practices. *Health Education Journal*, 64 (3), 218–228.

- Voroboif, D. A., Sitas, F., & Voroboif, G. (2001). *Breast Cancer Incidence in South Africa. Journal of Clinical Oncology, 19 (18)*, 125-127.
- Walker, A. R. P., Adam, F. I., & Walker, B. F. (2004). Breast Cancer in Black African women: A changing situation. *The Journal of the Royal Society for the Promotion of Health, 124 (2)*, 81-85.
- World Health Organisation. (2003). *Bulletin of the World Health Organization*. Geneva. World Health Organisation

APPENDICES

APPENDIX A: QUESTIONNAIRE FOR FEMALE STUDENTS IN THE UNIVERSITY OF NAIROBI

I am a student undertaking a master's program in Medical sociology at University of Nairobi. I am conducting a research on extent of awareness of risk factors that cause cancer among female students. Kindly, provide responses as instructed in all the sections.

SECTION A. SOCIAL AND DEMOGRAPHIC INFORMATION

1. Indicate your age

18-20	
21-25	
26-30	
31-50	

2. Marital status

Response	Tick
Single	
Married	
Widow	
Divorced/separated	
Cohabiting	

3. What is your highest level of education?

Doctorate	
Masters	
Bachelor degree	
Diploma	
Certificate	
Form iv	
Others (specify)	

4. A) Do you belong to any religion?

Response	
Yes	
No	

b) If yes, which one?

Response	
Roman catholic	
Anglican	
Hindu	
Islam	
Other (s) (please specify)	

5. Employment status

Response	
In school	
Non-employed	
Employed	
Self employed	
Other (specify)	

6. What is your year of study?

Rank	Tick
5 th	
4 th	
3 rd	
2 nd	
1 st	
Others (specify)	

7. Where do you reside?

Residence	Tick	
University hostels		
Outside but within university		
At home		

SECTION B: RISK FACTORS TO CANCER

8. A) Have you ever heard of breast cancer?

Response	
Yes	
No	

b) If the answer is yes, what did you hear about breast cancer?

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c) How did you hear about it?

Response	
Radio/ TV	
Newspaper	
Medical professional	
Friends/family	
Internet	
Others (specify)	

d) Have you ever heard of its causes?

Response	
Yes	
No	

e) If yes, what did you hear about breast cancer causes?

Response	
Exposure to gamma rays (sun)	
Is inherited	
Exposure to ex-rays before 30 years	
Overweight post-menopause	
Extended or early usage of oral contraceptives	
Witchcraft	
Other (specify)	

9. A) Did anyone in your family have breast cancer?

Response	
Yes	
No	

b) If yes, indicate which family member

Response	
Mother	
Grandmother	
Sister	
Aunt	
Cousin	
Extended family member	
Any other (specify)	

10. A) Please indicate whether risk factors were explained to?

Response	
Yes	
No	

b) If yes, of these, which were explained to you?

(Tick an answer/s that is most suitable)

Response	
Excessive consumption of alcohol	
Excessive smoking of cigarette	

Idleness and sedentary routine (lifestyle)	
Usage of cream and soap to change the color of skin	
Any other (specify)	

11. A) Were the early signs and symptoms of breast cancer ever explained to you?

Response	
Yes	
No	

B) If yes, indicate what was explained to you regarding breast cancer?

(Please tick the most appropriate responses)

Response	
Presence of lumps on the breast	
Change in size of breast	
An alteration of breast skin colour	
Alteration of breast nipples	
Abnormal discharges from nipples.	
Pain around the breasts	

12. How do you think cancer can be prevented?

Response	
Dieting	
Exercise	
Vaccination	
Breast examination	

13. A) Do you have own or are covered by a medical health insurance?

Response	
Yes	
No	

B) If yes, does it cover the financing of both screening methods of breast cancer?

Response	
Yes	
No	
Don't know	

SECTION C: PERCEPTION OF FEMALE STUDENTS ON BREAST CANCER

14. Please tick the number that best describes your opinion about breast cancer and screening. The numbers represent the following responses; 1= disagree strongly, 2=disagree, 3=neutral, 4=agree, 5=agree strongly

Perceived causes of breast cancer and their effect on early screening	1	2	3	4	5
Is a curse					
Results due to breast feeding					
Caused by witchcraft					
Smoking increases its risk					
May be inherited					
Results due to breast injury					
Early screening prevents breast cancer					
Screening leads to loss of breasts					

15. Using the scale below complete the table to indicate the factors that are likely to Influence your decision on clinical breast examination and mammogram/ breast scan Next year; 1 = Disagree strongly, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Agree strongly.

Possible factors that are likely to influence ones decision on clinical breast cancer examination	1	2	3	4	5
Family history of breast cancer					
Consequence of presenting with advanced cancer					
Serious concern that BSE will be painful					
Fear of finding cancer					
Valuability and importance of breast cancer screening					

16. Use the scale provided below to show the degree of your Response; 1 = Disagree strongly, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Agree strongly

Probable factor(s) that influence cancer screening uptake among women	1	2	3	4	5
Cultural practices					
Religious practices					
Stigma associated to cancer					
Cost of a breast scan					
Socio-economic status					
Distance to screening facilities					
Level of education					
Perception that breast screening is not important					
Social and work related commitments					

SECTION D: KNOWLEDGE LEVEL OF BREAST SELF EXAMINATION

17. A) Have you ever heard of breast self-examination?

Response	
Yes	
No	

B) If yes, by whom?

Response	
Health professional	
Family	
Friend	
Any other (specify)	

C) Was the procedure ever demonstrated to you?

Response	
Yes	
No	

18. A) Have you ever done the procedure of BSE yourself?

Response	
Yes	
No	

B) If yes, what kind of things were you looking for during self -examination yourself?

Response	
Lumps in the breast	
Inverted nipples	
Nipples abnormal discharges	
Change in the breast skin textures such as redness, pain and tenderness	
Change in the size and shape of the breasts	

C) If not, why?

Response	
BSE makes me feel so funny	
BSE will be embarrassing to me	
It will make me feel unpleasant	

19. At what age should breast self- examination be practiced?

Response	
From 15 years	
From 20 years	
Above 30 years	
Others (specify)	
Don't know	

20. What are the advantages of BSE?

Response	
It helps to know the shape and size of the breast	
It is done to make it more firm	
It helps to detect breast lump earlier	
Other (specify)	

21. If you noticed a lump in your breast, what is the most likely thing you would do?

Response	
I go for treatment from a traditional healer	
Ignore	
Visit a clinic for further diagnosis	
Don't know	

22. How often do you do the procedure of BSE?

Response	
Daily	
Weekly	
Monthly	
Yearly	
Never	

23. A) Do you know of any other possible methods used for detection of breast cancer?

Response	
Yes	
No	

B) If yes, explain

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.....
.....

If no, why?

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.....

24. A) Are you afraid to think about breast cancer?

Response	
Yes	
No	

B) If yes, explain your reasons

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.....

25. What are the barriers to breast self -examination?

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.....

26. A) Are there any public educational materials available at health facility near you to inform women of breast cancer prevention?

Response	
Yes	
No	
Don't know	

B) If yes, are they adequate?

.....

27. Do you read books, health materials and newspapers regarding health promotion and prevention of breast cancer?

Response	
Yes	
No	
Cannot read	

28. A) Do you own a radio?

Response	
Yes	
No	

B) If yes, how often do you listen to radio?

Response

Three to four times a day to specific programmes

Three to four times a day to specific programmes but never heard information regarding breast cancer prevention being delivered on radio

Three to four times a day to specific programmes and heard information regarding prevention of breast cancer prevention being delivered

29. A) Do you own a television?

Response	
Yes	
No	

B) If yes, how often do you watch television?

Response	
Evenings in a day I watch specific programmes	
Three to four times a day I watch specific programmes but never viewed information regarding breast cancer prevention being delivered on television	
Three to four times a day I watch specific programmes and view information regarding prevention of breast cancer being delivered on television	

30. A) Are there any other churches /religious or feminist organizations available near you disseminating information to women and improve their participation in screening programs?

Response	
Yes	
No	
Don't know	

B) If the answer is yes, what are they and what kinds of activities are undertaken by the respective institutions?

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C) Are these activities undertaken throughout the year or only during special campaigns?

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31. A) Are women themselves involved in communicating messages to their peers and educating other women about breast cancer?

Response	
Yes	
No	
Don't know	

B) If not, why do you think they don't?

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SECTION E: BREAST SELF EXAMINATION BY FEMALE STUDENTS IN MOUNT KENYA UNIVERSITY

32. What is the name of your nearest health facility?

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33. When is the date for screening procedures of breast cancer at your nearest health facility?

Response	
Everyday	
One day per week. Specify	
Two days per week. Specify	
Three days per week. Specify	
No knowledge	

34 A) Did the health workers ever give you information to you to encourage you to be screened for breast cancer at your nearest health facility?

Response	
Yes	
No	

B) If yes, how was the knowledge delivered?

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C) What was the main message?

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D) Was the message clear and accepted by you as a woman?

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Thank you for participating in this research

APPENDIX B: KEY INFORMANT INTERVIEW SCHEDULE

SECTION A: RISK FACTORS TO BREAST CANCER

1. What are the risk factors to breast cancer?

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2. What are the early signs and symptoms of breast cancer?

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3. How can breast cancer be prevented?

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SECTION B: PERCEPTION ON BREAST CANCER

4. In your opinion, what factors are likely to influence the ability of women of reproductive age to undertake breast examination and screening for cancer?

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5. How does attitude about breast cancer (such as its cause and urgency) and breast cancer screening (such as its necessity) affect breast cancer screening uptake?

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6. What are the barriers to breast self-examination?

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SECTION C: KNOWLEDGE AND PRACTICE OF BREAST SELF EXAMINATION

7. Do you think women regularly undertake breast self -examination within the division as required?

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8. How do cultural practices (such laceration and consulting herbalists) and religious practices (like prayer and consulting pastors) affect the uptake of breast cancer screening?

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9. How does the level of education, marital status, and distance to screening facilities, income status and the cost of screening influence breast self-examination uptake among women?

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10. What should be done to increase awareness of BSE among female students?

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