

**FACTORS THAT INFLUENCE THE UPTAKE OF BREAST CANCER
SCREENING AMONG SECONDARY SCHOOL STUDENTS: A CASE OF KISII
SOUTH SUB-COUNTY, KENYA**

By

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Technology**

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DECLARATION/APPROVAL

Declaration

This thesis is my original work and has not been presented for an award of a diploma or conferment of for degree in any other university or institution.

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DEDICATION

This thesis is dedicated to my lovely late mother Rebacce Ondimu whose guidance and encouragement have been a great source of inspiration.

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ABSTRACT

Breast cancer kills about 519,000 women annually across the globe. Worldwide there is rise in new case of breast cancer; most of these cases are reported in developing countries. In Africa breast cancer is characterized by presentation with the advanced disease, inadequate information about breast cancer's incidence and inaccessibility of facilities significant for screening purposes. In Kenya, most cases of breast cancer are presented with stage 3 and 4 of the disease. It is important to examine the establishment of breast health education in the curriculum and school setting, the level of breast screening awareness, accessibility of screening facilities and the role socio-economic, demographic and cultural beliefs, students' attitude and fear of the uptake breast cancer screening. The aim of this study was to analyze the factors that affect the uptake of breast self examination among students in secondary schools in Kisii south sub-county. Health belief model formed the basis for this study and data was collected using interviews administered through questionnaires. The study used cross sectional survey research design. The study targeted secondary school students of ages 13 – 22 years. The sample size was 147 students picked randomly and proportionately from each of the 15 schools in the sub county. The schools from the sub-county were systematically sampled and data obtained was analyzed using both descriptive and inferential statistics. Descriptive statistics include frequency chart and table while inferential statistics include Pearson's chi-square (X^2) and correlation analysis. The statistical package for social science, SPSS, was used for computer statistical analysis. 75.5% of the respondents had never undertaken any form of breast screening. The research found significant association between SECD, psychological factors, institutional factors and student levels of knowledge about breast cancer with breast cancer screening uptake. Students with a lower social economic status were found to be less likely to undertake screening services. The study findings will help the ministries of Health and Education to formulate policies that are directed at promotion of early breast health seeking behaviour among the students. The study results also will be utilized by Ministry of health in combating breast cancer thus contributing to the Millennium development goal 6 and Vision 2030.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
BGH	Board of Global Health
BHE	Breast Health Education
BSE	Breast Self-Examination
CHMT	County Health Management Team
GOK	Government of Kenya
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
IEC	Information, Education and Communication
INCTR	International Network for Cancer Treatment and Research.
IUCC	International Union Against cancer
KBHA	Kenya Breast Health Association
KBHP	Kenya Breast Health Programme
KIE	Kenya Institute of Education
KEMRI	Kenya Medical Research Institute
KNH	Kenyatta National Hospital
LMIC	Low and Medium Income countries
MOE	Ministry of Education
MOH	Ministry of Health

N C R National Cancer Report

N G O Non-Governmental Organization

U N A I D S United Nations programme for HIV and AIDS

W H O World Health Organization

OPERATONAL DEFINITION OF TERMS

Breast cancer

This is a malicious development that occurs in the breast tissues and is characterized by uncontrolled and abnormal cell multiplication.

Breast self-examination

This is a technique in diagnosis that is commonly done on her breast in order to ascertain for the presence of lumps or other abnormal occurrences.

Clinical breast examination

This is the substantial assessment of the breast that is carried out by health care providers in order to check for lumps or other changes

Diagnosis

This involves the imaging, hormone status, pathology, and staging when confirming the occurrence of breast cancer in a patient.

Health promotion: This is the integration of both educational and environmental sustenance for action and condition of living conducive health.

Incidence: This refers to the regularity of breast cancer case appearances within a selected individual group in a given population at a specific place and time.

Screening

This is the type of examination that involves the techniques in diagnosis or a physical analysis to become aware of the presence of breast cancer.

Stigma: an attitude or feeling of disgrace test by those affected or infected with breast cancer.

Surveillance: careful observation of a group of people for detection of the presence of breast cancer.

1 CHAPTER ONE: INTRODUCTION

1.1 Background

Breast cancer kills about 519,000 people annually across the globe (WHO, 2014). Over 1.2 million people are diagnosed with by breast cancer on annual basis globally (*Ibid*,2014).There is a varying rate within the international with a range of between 3.9 individuals against 100,000 in Mozambique and 101.1 in the United States (American cancer society, 2012). 16.6 – 29.9 cases per 100,000 persons (*Ibid*, 2012). These low rates have been attributed to low screening rates and incomplete reporting. Breast cancer cases in Africa are characteristic of; high cost of screening, presentation with the advanced disease, inadequate information about breast cancer incidence, and inaccessibility of facilities significant for the screening purposes (McGrath *et al*, 2010).Between 2010 and 2012, this was the mainly diagnosed form of cancer amongst Kenyan with about 80% - 90% of the presented cases with stage 3 and 4 of the ailment, when treatment cost is high with low survival chances (Apffelstaedt,2012). One out of every nine Kenyan tested positive with breast cancer at its advanced levels (Neondo,2010). Majority Kenyan looks the diagnosis of breast cancer just as a death penalty, delaying their health seeking behaviour. The belief that breast cancer is incurable necessitates delay as other options that are culturally acceptable are excavated in tandem with the edifying characterization of the disease (Muchiri,2011). The emergence of breast disease and the subsequent development of cancer tend to be more aggressive in young people compared with breast cancer progression in the older population (Anders *et al.*, 2015). Young women aged 15-29 years with breast cancer experienced mortality rate of 72.4% from the diseases (Kenya National Cancer, 2014). The high mortality rate among young women mainly due to lack of breast cancer awareness (Anders *et al*, 2012).

Early detection of breast cancer plays an important role in reducing its morbidity and mortality. Breast self examination (BSE), mammography, and clinical breast examination (CBE) are considered as screening methods for early detection of breast cancer (Avci,2008). Although, there is debate surrounding the efficacy of routine BSE in early detection of breast cancer (Giridhara *et al*, 2011). BSE is still an important screening tool for early detection of breast cancer in developing countries, because it is

cheap, widely available, and does not require complex technical training (Giridhara,2011). Overall, practicing BSE could provide an opportunity for people to know how their breasts normally feel and able to notice any changes in their breast tissue (American Cancer Society, 2012). This complements the breast health awareness education and supplements people with knowledge on what to do when a lump is detected.

Despite the relative benefits of BSE, its application remains low (Canbulat,2015). Studies conducted among women in Bushehr, a city in south of Iran, showed that only 41.9% had performed BSE in the past and 7.6% of them performed it regularly (Noroozi,2011). Similar results were found among Malaysian female, which showed only 36.7% conducting BSE practice. In a recent research, young Malaysian female were noted not know how to perform a BSE (Akhtari-Zavareet,2011). In some, a lack of awareness regarding the necessity of regular BSE has an impact on the engagement of this screening practice (Avcı,2008). Therefore, understanding the student's beliefs regarding BSE can be used to design appropriate educational interventions to promote this screening behavior (Yarbrough et al, 2011).

According to a research report by the Kenya Medical Research Institute (KEMRI), in the year 2006, barely 2 out of 87 hospitals within Nyanza could provide expert breast screening services, suggestive of inaccessibility principally to the country populous. Very limited laboratories have the required equipment for undertaking the breast cancer research (Musimbi,2008) and the current infrastructure in cancer management that is unable to handle all recently diagnosed cases (*Ibid*, 2015). Based on a report by (UNAIDS 2014), schools are excellent points of contact for young people to acquire knowledge and attitudes. Moreover, they are receptive to information in school compared to any other environment, hence the need to explore the role of schools in promoting breast cancer screening.

(WHO 2015) proposed that, school health promotion should provide curricula to empower teenagers with competency in taking reproductive health actions and that screening be undertaken by qualified health personnel. The Ministry of Health (MOH) - gave recommendations on the establishment of youth friendly services in existing education facilities to promote their reproductive health (MOH, 2005).

Many factors however are bound to affect breast health awareness, Breast Self-Examination (BSE) and screening among secondary school students. It, therefore, becomes necessary to acquire information on the different factors that discourage screening among students, their allocation and how significant they are in the decision making process in the participation of breast cancer screening.

1.2 Statement of the Problem

Globally, there is a rise in the incidences of breast cancer and this is more prominent in the developing nations. The rising breast cancer incidence rate in Kenya is a major concern in the health sector, yet little research has been done to impede the rise (Kenya National cancer, 2014). The number of people referred from Kisii level 5 hospital to Kenyatta National hospital for specialized levels of cancer screening, diagnosis and the successive treatment raised from 54 in the year 2012 to 96 in 2013 which translated to approximately 78% increment. About 32% of the cases that had been referred were presented with stage 3 and 4 of the disease. 40.1% of those cases that were presented at stage 3 and 4 came from Kisii south sub county 59.1% came from the remaining eight sub county. This increase in incidence, high mortality and presentation with advanced cases of breast cancer raised gaps associated to the level of awareness of breast cancer, BSE and screening among the youths in the sub county, considering that BSE alone greatly decreases the incidence of late cancer presentation (Apffelstaedt, 2015). Yet perspectives of students regarding breast cancer haven't been widely studied. Though secondary schools are excellent agents for the socialization of the youth into responsible reproductive health, there was reluctance in adoption of Breast Health Education (BHE) in secondary schools and very little deliberate effort had been made to reach the students.

1.3 Justification

If the factors affecting BSE and clinical screening among students were not investigated, it would impede equity in access to healthcare among vulnerable youth in secondary schools hence increase the incidence and mortality associated to late breast cancer reporting. It would also be impracticable to understand the various factors that influence the uptake of BSE and clinical screening among the youths for which there is little

information. The study results also will be utilized by Ministry of health in combating breast cancer thus contributing to the Millennium development goal 6 and Vision 2030.

1.4 Objectives of the Study

1.4.1 Broad Objectives

The study was to examination on the factors that influence uptake of breast cancer screening among secondary school students in Kisii south sub-county.

1.4.2 Specific Objectives

(a) To determine the student's level of awareness about breast cancer, BSE, and Breast cancer screening.

(b) To establish the extent to which the secondary school curriculum and school setting address B.H.E (Breast Health Education), B.S.E and screening for breast cancer.

(c) To determine the extent to which secondary school student's access screening facilities, undertake BSE and breast cancer screening.

(d) To determine the role of socio-economic, cultural & demographic factors (SECDs), attitude, fear and embarrassment on the student's uptake of screening for breast cancer.

1.5 Research Questions

(a) What is the level awareness of secondary school students on breast cancer, BSE and screening for breast cancer?

(b) To what extent does the secondary school curriculum and school setting address Breast Health Education (B.H.E), BSE and screening for breast cancer?

(c) To what extent do secondary school students access Breast screening facilities and undertake BSE and screening for breast cancer?

(d) Do socio-economic, cultural and demographic factors (SECDs), attitude and feelings influence BSE and screening for breast cancer among secondary school students?

1.6 The Study Significance and Anticipated Output

BSE and screening remain fundamental in reducing breast cancer within the entire population. It was therefore significant to be conscious of the factors that affect BSE and early screening among secondary school students to enable teachers and school nurses devise and implement effective reproductive health promotion in accordance with WHO guidelines to promote equity in access to reproductive healthcare among girls.

Secondly, by analyzing the factors, this study offered a prospect to examine; the allocation of such factors, their role in the uptake of screening programs and the role of schools in creating awareness and reducing its incidence at the later stages of life.

Thirdly, the study provided policy makers at Ministry of Health (MOH) and Ministry of Education (MOE) with an adequate understanding of the factors affecting uptake in order to formulate policies and programs that promote early breast health seeking behaviour (WHO, 2006). This would enhance formulation of appropriate policies that encouraged youth participation in screening and improved their breast health seeking behaviour in adulthood.

Finally, this study contributed to the base of knowledge with considerations to the different factors that impact BSE and input in clinical screening by the students for which very little information is available, contrary to the view that breast cancer is associated with old age.

1.7 Delimitation

In this study limited literature was available especially linked to breast cancer screening uptake among the youth and breast self-examination, given that most research had been focused on older women.

The study focused on secondary school students within Kisii south sub-county alone due to the limited point in time and financial resources at the disposal for the research.

1.8 Limitation

This study covered Kisii south sub-county only due to the cost implication and limited time available for conducting the study.

1.9 Scope

The study was carried out among secondary school students in Kisii south sub-county.

2 CHAPTER TWO: LITERATURE REVIEW

2.1 Breast Health Promotion and Education

Breast health promotion entails a two dimensional approach; provide knowledge to try and prevent it from happening or if it has occurred to find it and take care of it at its earlier stages (David and Rassaby,2015). A knowledgeable public; carries out breast self-examination and talks to medical specialists about the appropriate age to start breast screening (Ibid, 2015).People choose to adopt healthier ways of living, if they get dependable information from the systems they trust, supported by vigorous holistic debate. According to (Teresa de Perez 2013), decentralization of health promotion through personalized action plans in Cuba achieved tremendous lifestyle changes especially through face to face education in order to keep the public informed and by creating a generation of space for distribution and social exchange of breast health knowledge. Accordingly, an effective BHE program targeting the youth should include; educational handouts, seminar programs, guides for health promotion and education prepared by MOE, television programs and a commission to co-ordinate educational activities (Ibid, 2003).Working, with principals to schedule educational sessions around class schedules empowers high school girls to take control of their bodies through detection skills (Goode, Sockalingan and Lopez, 2013).

The KBHP educates women to care for their breasts through regular self-examination and organizes workshops for exchange of information with the public (Neondo,2015).However, not so much effort has been put in place to reach secondary school students. Health promotion talks are given regularly by medical professionals in Kenya through the media outlets but not all regions of the country get the broadcasts (Musimbi,2015).

Educational approaches such as; repetition, reinforcement and hands on learning introduced in a modified curriculum have been demonstrated not only to increase mastery of B.S.E but also to increase breast screening uptake (Thelma *et al* 2013). (Carolyn *et al* 2002) argue that breast health education in schools is a vital step towards normalizing discussions about breasts, promoting breast awareness and countering misconceptions about breast cancer screening that are common among teenage girls.

Educational interventions should be designed to improve breast cancer screening among teenage girls (Bailey *et al*, 2012).

(Cohen *et al*, 2010) found that during an 8 week advertisement campaign in inner Glasgow for breast screening, 97% of the women attending the screening liked the images and found the messages reassuring, supportive and credible. They stated that advertisement should create awareness of the service, make women more aware of the benefits and change the public perception of screening. Screening acceptance improved in the areas that were covered by the advertisement and campaigns by 2-13%. Despite the benefits associated to regular BSE, few women actually examine their breasts, infact a majority do not even know how to do BSE (Stamler *et al*, 2010).

(Chan H. S. *et al* 2008) has demonstrated that a lower education level among women is a vital variable associated with low breast screening uptake, therefore the need to examine the extent to which education influences BSE and screening uptake among students.

2.2 Socio- Economic, Cultural and Demographic Factors

Studies have demonstrated that breast cancer screening uptake may be impacted by socio-economic and demographic factors (SEDs) that include; income status (Bouchardy,2010) and economic deprivation (Macleod *et al*, 2010). The uptake of breast screening tends to be lower in socio-economically deprived inner cities of England (Breast Screening Program-England, 2004/05). (Banks *et al*, 2012) observed that out of the 1064 women invited for screening in London, 55% of the non-attende'e's came from the most deprived areas. In a study of the association between uptake of breast screening and socio-economic poverty, spatial disparities, rural-urban status, the setting and nature of the screening units, the strongest association was with socio-economic deprivation with significantly lower uptake from deprived areas (Maheswarab,2015).

Culture affects both the risk factors for cancer and the meaning of the disease, yet it establishes time norms for behavior and guides members to respond emotionally, cognitively and socially to the disease. (Sadler *et al*, 2011).

In some cultures, cancer is a white man's disease, while some believe that breast cancer is caused by the devil or is a curse from God, whereas others believe in not exploring the

unknown. Therefore if a lump in the breast is not addressed, it will never happen (Bailey *et al*, 2012).

Cancer control strategies targeting women and girls must therefore include messages that are consistent with their beliefs, attitudes and experiences (*Ibid*, 2012). Culture influences women's practice of BSE (Facione, 2010). BSE is also influenced by among other factors, cultural beliefs about breast cancer (Smiley, 2010). The believe in invulnerability to breast cancer, by which young women link the occurrence of breast cancer to tragic luck, also delays reporting and screening uptake (*ibid*, 2010). Others believe that breast cancer isn't a serious illness, whereas others believe that susceptibility to breast cancer is the will of God which can moderate the effect of perceived seriousness of the disease on BSE practice and screening uptake (Smiley, 2010). Others believe that talking about the disease will cause its' onset hence delay reporting and screening uptake (Bailey *et al*, 2012).

(Bulaporn and Clark 2015) found that among Thai women, the cost of screening and the distance to screening facilities play a major role in determining the uptake of screening services for breast cancer. The high cost of clinical breast examination and mammography especially in developing countries is a big hindrance to the uptake of such services by women and girls (WHO, 2014).

(Maxwell 2010) reported that following the relocation of a mobile screening unit in Bolton, the overall attendance fell by 1% and for each kilometre further from the screening unit, attendance decreased by 2% but there was a 6.4% difference between the highest and lowest district attendance rates with highest rates in least deprived areas.

(Barter and Taket 2015) however found no association with their sample nearness to the screening site and attendance, reporting access as a concern due to decline of appointment on the basis of inconvenience.

A study undertaken in southern London found that old age was robustly linked to reduced uptake of mammography (Harris, 2012).

(Jepson, 2000) observed that a negative attitude towards breast screening and the perception that breast screening is not personally important are hindrances to the uptake

of screening for breast cancer. The most common reason influencing the decision for breast cancer screening in Ol-kalou, Nyandarua district-Kenya was that many women did not associate it to any direct benefits. Given that breast cancer isn't prevalent in the area; few people do not see the reason to take breast cancer screening (Muchiri,2015).

The presence of a qualified nurse in an institution to provide intensive educational interventions and avail information about the benefits of B.S.E and breast screening can improve uptake of breast cancer screening (WHO, 2014).

2.3 Fear and Embarrassment

The fear of finding something wrong has been cited as an obstacle to screening especially among the black Americans and the feeling that it is better not to know is a reported barrier among several European samples (Lastan,2011). Other studies have suggested that greater fear(s) is associated with higher likelihood of screening uptake Shyness and embarrassment have been cited as barriers to the uptake of breast cancer screening among Jordanian women (*Ibid*,2010).

2.4 Challenges to Breast Cancer Control in Africa

Cultural myths are the greatest impediment to breast cancer screening and many women are afraid to discuss the disease openly (WHO, 2014). Women would rather consult gods or pray to know why and who is behind the conditions, delaying presentation for screening and treatment (*Ibid*, 2014).

Breast health awareness campaigns have been inadequate coupled with lack of affordable screening facilities especially in most rural centres (McGrath, 2014).

Where screening facilities are available the cost is prohibitively high (WHO, 2014). Due to lack of logistics and funds, health agencies can only provide BHE and promotion (Huertha and Grey, 2015). Lack of major cancer registries in Africa pose a major challenge in providing statistics about breast cancer reports for effective planning (Neondo,2015).

2.5 Education Issues

(Nevin,2015) demonstrate that BSE accuracy of the students increased after education, besides their positive attitude and behavior towards BSE were improved; hence they

suggest that the main reasons why the students were not performing BSE were lack of knowledge and motivation prior education. Teaching in social settings has also been shown to improve knowledge of BSE (Neondo,2015).This findings illustrate the need for an organized curriculum to improve the uptake of BSE and breast cancer screening among high school students. (Carolyn ,2012) have proposed the introduction of a breast health strategy through multidisciplinary approach incorporating the school and the community to normalize discussions about breast health and promoting breast awareness.

(The royal college of nursing,2012) suggested that it is the health providers' responsibility to educate, encourage women and girls' to be familiar with their breasts, identify breast changes and help them decide what to do if the change is identified. They empower women by providing information, advice and support with an organized curriculum, however many schools lack nurses and the current secondary school curriculum is already overloaded. Most schools acquire books majorly for academic excellence and rarely for breast health awareness. Undergraduate cancer study programs in Kenya are quite short and are mainly held in outpatient clinics raising issues about the suitability of nurses in breast health instruction (Musimbi,2015).

2.6 Theoretical and Conceptual Framework

The Health Belief model (Barnyard, 2002) formed the hypothetical basis for this kind of study.

2.6.1 H.B.M (The Health Belief Model), (Barnyard, 2002)

The model took presumptions that populace are frightened of diseases and the health actions of people are provoked by the extent of professed threat (fear) and the anticipated dread reduction action plan, so long as the probable lessening strategy outweighs the physical and psychological delimitations to the net benefits to make easy the participation in rewarding health actions.

This form of study can be outlined using the four constructs of the health model;

Perceived susceptibility: this was the opinion of the student on their chances of being affected or developing breast cancer disease. This might drive them to engage in early breast examination and screening to prevent developing breast cancer or being affected

later in life. This was the student's believe that they may be at risk to develop breast cancer motivating them to take up breast screening and BSE for breast cancer to facilitate appropriate timely intervention.

Perceived severity: This was the student's opinion on the seriousness of developing terminal breast cancer. Students would change their health behaviors and take up breast screening and BSE for cancer depending on how serious they consider the consequences of developing terminal breast cancer.

Perceived benefits: This was the student's opinion of the effectiveness of early breast examination and breast screening as a gauge of sinking the impact of breast cancer in the future. Students would take up breast screening for cancer when guaranteed that it is very gainful to them by protecting them from developing breast cancer.

Perceived barrier: this was the student's belief of the tangible and psychological outlay of engaging in early breast examination and screening against not taking it up. These include the physical, psychosocial, economic and demographic variables that may inhibit breast screening uptake. After a cost/ benefit analysis, such barriers can be overcome to take up screening for breast cancer.

Cues to action: The students' own conscience can internally drive him/her to undertake early breast examination or rather breast screening in order to impede the chances of emergent incurable breast cancer strains. Peripheral factors such as advertisements through the print and non-print media, creation of awareness through health campaigns and posters prompt the students to take up screening for breast cancer.

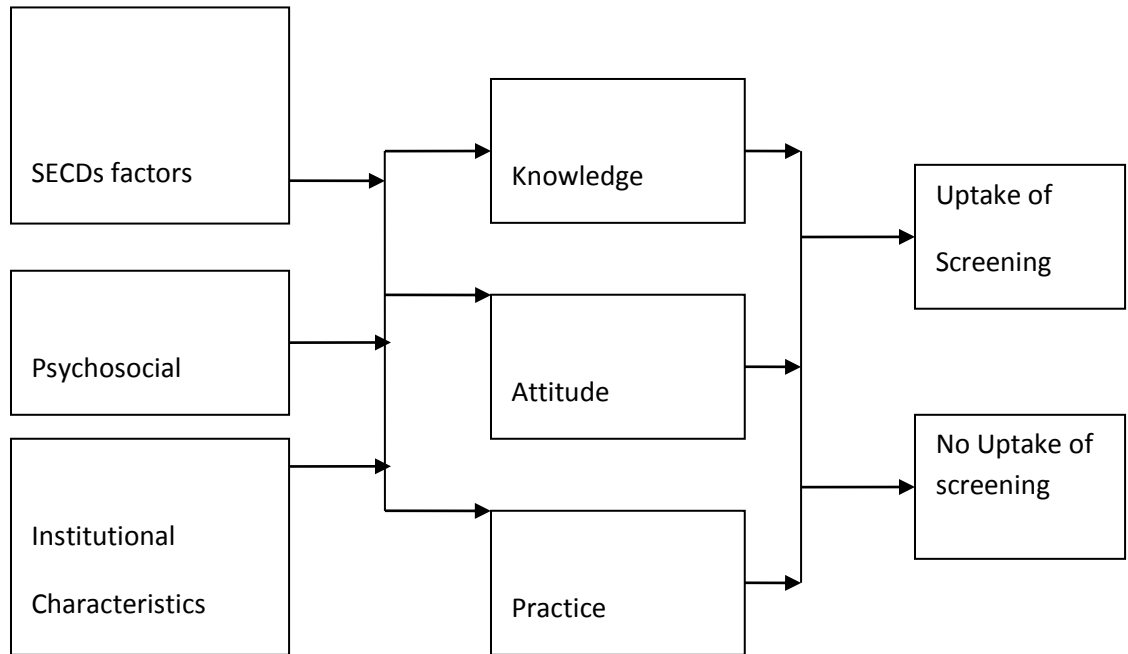
2.6.2 Conceptual Framework

The conceptual framework below shows the factors that affect B.S.E and breast screening

Uptake in secondary school;

(Independent variables)

(Dependent variables)



Modified from (Carolyn, 2002)

Fig 2:1 Conceptual framework showing the factors that affect BSE and breast cancer screening uptake in secondary school.

3 CHAPTER THREE: METHODOLOGY

3.1 Research Design

This study used cross sectional survey research design. This design was preferred in to obtain diverse information about the students' attitudes, opinions and habits related to breast screening uptake using questionnaires and interviews. It was also flexible, easy to administer and cheaper in data collection. In this study, information about the factors that influence early screening for breast cancer among secondary school students was sought from students and teachers using questionnaires and interviews respectively, supplemented by secondary data sources which included; the secondary school syllabus, ministerial policy frameworks and the WHO school health policy framework. This data was processed to provide descriptive data.

3.2 Variables

The dependent variable was the uptake of breast screening for breast cancer, whereas the independent variables was; the secondary school curriculum and setting, distance to screening facilities, SECDs, attitude, perceptions and feelings about breast cancer, BSE and breast cancer screening.

3.3 Study Area

This study was carried out in, Kisii south sub-county Kenya. It is located on latitude 0.6° and longitude 34.75° See map attached (appendix II). All the 15 secondary schools within the sub-county were identified and included in the study.

3.4 3.4 Study Population

The target population was the secondary school students in Kisii south sub-county. All the students aged 13 - 22 years in the selected schools were targeted. The study area had an estimated secondary school student population of 7100. See attached list of secondary schools within the study region (appendix III).

3.5 Sampling Procedure

3.5.1 Schools

All secondary schools in the sub-county were identified and included in the cross sectional survey research to provide a larger and more representative sample.

3.5.2 Students

The students were picked from each secondary school by simple random sampling and proportionately (to the entire student population in the sub-county) until the desired sample Size was attained. This guaranteed that extra students were picked from schools with more students. Equally, the proportionate percentage of students in each form was used to determine the participants within each school. Simple random numbers were assigned to all students from class registers and using the Table of random numbers the students were selected for inclusion in the study until the desired percentage was found in each form and school respectively.

3.5.3 Sample Size

This was determined by using Fisher's formula;

$$n = \frac{Z^2 pq^D}{d^2}$$

Whereby; n = the preferred sample size (if the target population is greater than 10,000)

Z = the standard normal deviate 1.96 at 95% confidence interval

P = estimated prevalence of breast cancer in the population,

0.11 (Neondo,2006)

q = 1 – p = 0.89

d = level of statistical significance set at 0.05.

D = design effect = 1 and therefore;

$$n = \frac{1.96^2 \times 0.11 \times 0.89}{(0.05)^2} = 150$$

Since the target population was less than 10,000, the final sample estimate (n_f) was calculated using the formula:

$$n_f = \frac{n}{1 + n/N}$$

Where:

n_f = the desired sample size (when the population is less than 10,000)

n = the preferred sample size (when the population is greater than 10,000)

N = the estimate of the population size, hence;

$$n_f = \frac{150}{1 + 150/7100} = 147$$

Therefore the minimum sample size obtained was 147 students picked randomly and proportionately from each of the schools.

3.6 Construction of Research Instruments

Structured and open ended questionnaires to be used in the study were constructed from the objectives of the study. This ensured that each item related to a specific objective. Considerations were made for how information obtained from each item was to be analyzed. The items were concise, in a logical sequence and with adequate information. Some items were to be rated on the Likert scale.

3.7 Pilot Study

The questionnaire were pretested in 3 of the 12 randomly selected secondary schools in Kitutu Chache south sub-county whose sample was similar to the actual sample. The questionnaires were self-administered and participants were encouraged to make suggestions about the instructions, clarity of questions and relevance.

3.8 Validity and Reliability

3.8.1 Validity

The validity of the questionnaire was based on expert opinion and a field test. The supervisors and a panel of experts examined the questionnaire and the appropriate changes they recommended on; content, construct, criterion and face validity will be made in consideration of the field test results.

3.8.2 Reliability

A pilot test was carried out involving at least 30 respondents not included in the actual sample to obtain data that was analyzed by SPSS to determine the reliability coefficient. Furthermore, the split-half technique was utilized in assessing the reliability of the questionnaire.

3.9 Data Collection and analysis

3.9.1 Data Collection

Sources of data were both primary and secondary. Secondary data was obtained by analyzing the K.I.E Syllabus to examine extent of the integration of Breast Health Education in the secondary curriculum. Primary data was collected using pretested structured and open-ended questionnaires. Interviews were used to get in accurate data. The type of data to be gathered included; awareness and practice of B.S.E and breast cancer screening, Level of establishment of B.H.E in the curriculum and school setting, role of socio - economic, cultural & demographic factors, role of fear and attitude in the uptake of BSE and breast screening uptake.

3.9.2 Data Analysis

The data collected was analyzed using the statistical package for social sciences (SPSS). Frequency charts and proportions were used to compare the student's responses to B.S.E and breast cancer screening uptake. Chi square coupled with correlation analysis were used to determine the association between; Level of breast cancer, BSE and screening awareness with uptake of screening Curriculum, school setting and breast health education with BSE and screening uptake. Access to screening facilities with screening uptake, SECDs with students' uptake of BSE and breast screening and the relationship that do exist between the variables themselves Students' attitude and fear on uptake of BSE and breast cancer screening. In analyzing secondary data, the total number of subtopics that cover to any extent B.H.E was identified from the syllabus and policy statements and then percentages were used to find out how frequent B.H.E and screening were presented to students in the secondary curriculum and school settings.

3.9.3 Ethical and logistical considerations

Permission to carry out the study was sought from the Board of post Graduate of JOOUST and the University of Eastern Africa Baraton Ethical Review committee also from Kisii teaching and referral hospital, further clearance was sought from Kisii south sub county Education officer. Information consent from the respondent was sought by adequate the objective was studied and completed consent form. Informed consent from the respondents was sought by informing them the objectives of the study and completing consent form. The respondents were assured of confidentiality with all the information that they provided in the questionnaire.

4 CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the characteristics of the respondents, the main results obtained from the result analyses of the research findings discussion and conclusions.

4.2 Demographic factors

4.2.1 The age of the respondents.

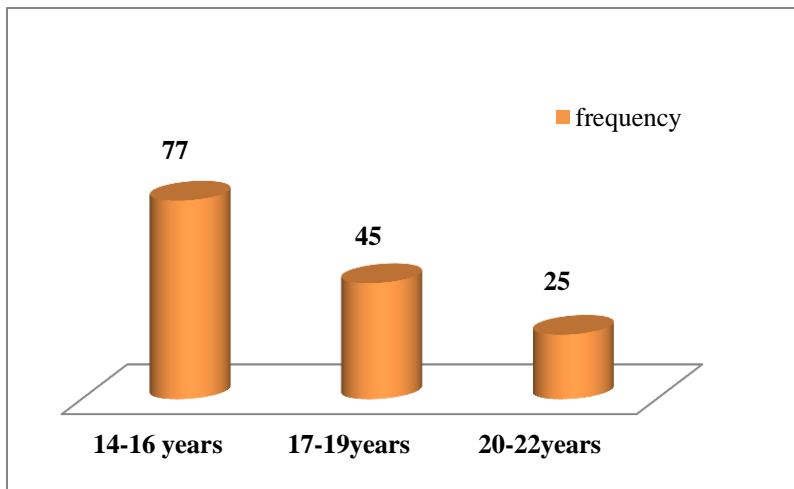


Fig.4.1 :Age of the respondents

Figure:4.1 above illustrates the age groups of the respondents, majority being those ones falling between the age group 14-16 years at 52.4% followed by the ones aged between 17-19 years at 30.6% and lastly at 17% are those ones aged between 20-22 years.

4.2.2 Gender of respondents

Table 4.1: Gender

Respondents gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	71	48.3	48.3	48.3
	Male	76	51.7	51.7	100.0
	Total	147	100.0	100.0	

Table 4.1 above gives the frequency of the gender of the individuals who turned out for the interview which can be clearly illustrated by fig.4.2 of a pie-chart showing the proportion of male and female respondents during the process of data collection in various schools within the sub- county of Kisii south. Clearly the number of male students stood at 52% which surpasses the 48% of their female counterparts. This low number of female students can be attributed to the alleged male chauvinism in the region which only sees the male child as the viable creature to be educated as opposed to women whose roles are meant to sit at home and wait for time to come so as to be married.

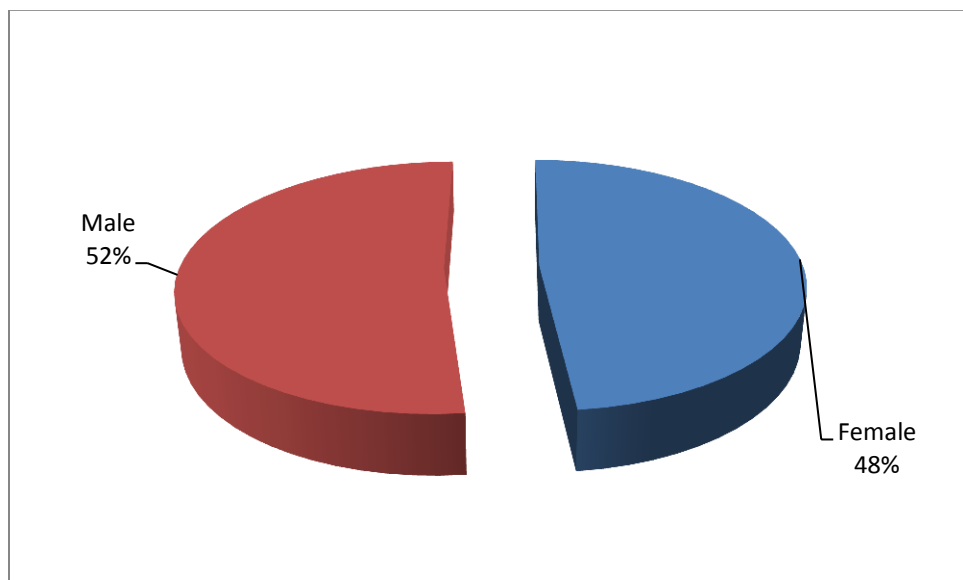


Fig.4.2:gender of respondent

4.3 Student's level of awareness

4.3.1 The source of information about breast examination and screening

Table 4.2: Have you ever heard of breast cancer screening?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	67	45.6	45.6	45.6
	No	80	54.4	54.4	100.0
	Total	147	100.0	100.0	

Out of the 147 respondents, 67 conquered to have heard of the existence of the breast cancer screening either within the sub- County or outside the county a number which in percentage form translates to 45.6%. This number raised the curiosity about the source of information for breast cancer screening. This information, as illustrated in fig.4.3 below, radio at 29.25% turned out to be the major source of information within the region owing to its outstanding advantages such as one being able to tune into the station of their choice and to the language which they are well acquainted to. This was surprisingly closely followed by internet at 27.89%.

It is quite surprising as everyone wouldn't have wished internet to have come before television. However it is vital to embrace the fact that technology has come up so fast such that a lot of affordable internet enabled phones are readily available in the market together with the low costs of acquiring data bundles among the renowned mobile service providers such as Safaricom, Orange and Airtel. The last in the list is Nurse/Doctors who at 4.76% are rarely seen prior to booking appointments and even if one had to see them a consultation fee has to be paid as always the case which to me draws the needy at bay from accessing the necessary information from them.

It surprises me and even the reader that only 11.56% of this information is accessed from the teachers who are always in constant contact with the students from the region. This

mean one thing the education curriculum has put less emphasis on this menacing disease amongst many other factors to be addressed in later in the chapter.

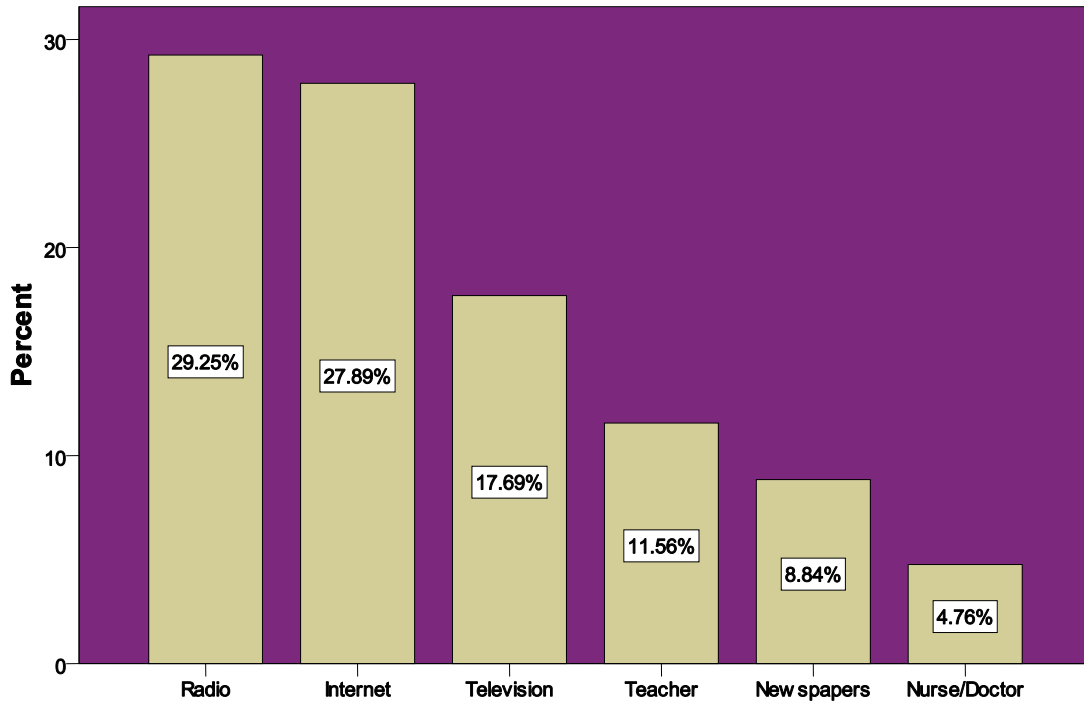


Fig. 4.3 :Source of information about breast cancer screening

4.3.2 Uptake of self-breast screening examination

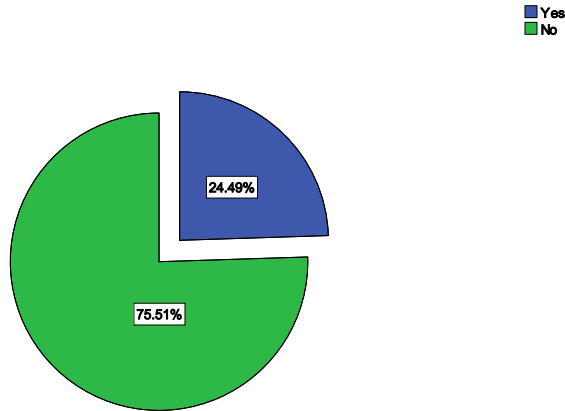


Fig.4.4: Have you ever carried self-breast examination

From fig.4.4 above one can clearly see that very few have ever thought of carrying out or rather have carried out self –breast examination reasons coming out clearly towards the end of this analysis.

Out of those who managed to carry out self-breast examination a greater percentage had the ability to do so without any problem as seen from table 4.3 below.

Table 4.3: Ability to do self-breast examination.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	16	10.9	44.4	44.4
	Good	16	10.9	44.4	88.9
	Fair	4	2.7	11.1	100.0
	Total	36	24.5	100.0	
Missing	System	111	75.5		
Total		147	100.0		

4.3.3 Clinical breast examination/screening.

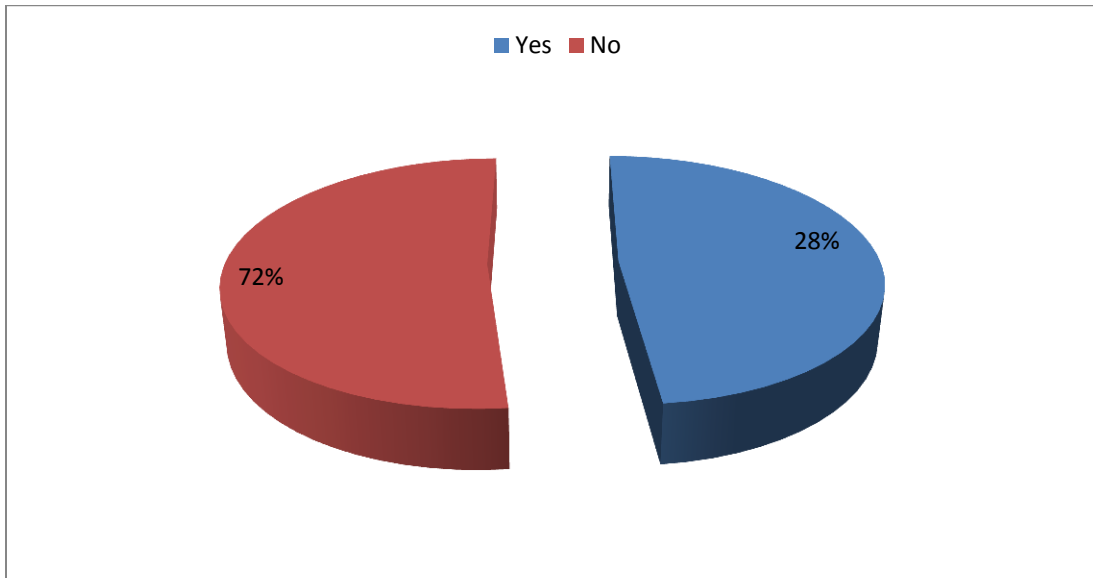


Fig.4.5: Uptake of clinical breast examination/screening

Majority of the respondents confirmed to have not taken breast screening/examination in the clinics within the region. 72% of them confirmed to have not done so either by self-examination or availing themselves to be examined or screened at the clinics within the region as shown in fig.6 above.

4.3.4 Educational sessions about breast health and screening

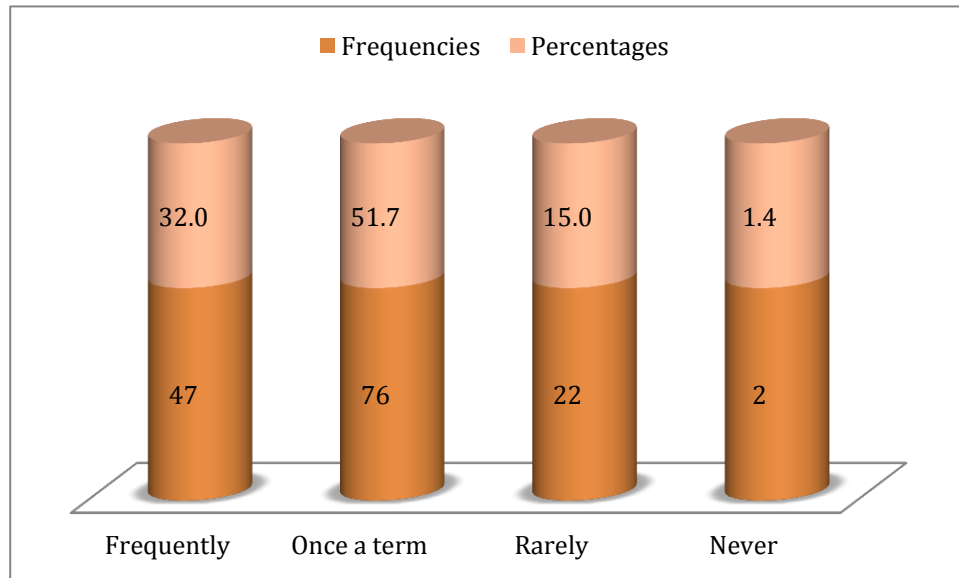


Fig.4.6 Frequency of educational sessions about breast health and screening organized by health officers/nurses

Most of the times that health officers/nurses do organize breast health and screening educational sessions, majority of the students only attended once as exhibited in fig.4.6 above owing to the fact that may be the don't always see the relevance of doing so or rather poor of channel of communication within the school or still this can be attributed to location of the school from the health facility among other factors.

4.3.5 Training/seminars on breast self examination and breast screening.

Table 4.4 Would you attend a training/ seminar on breast self-examination and breast cancer screening if you were given a chance now?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	48	32.7	32.7	32.7
	No	99	67.3	67.3	100.0
	Total	147	100.0	100.0	

Other factors held constant majority would expect that most of individuals to attend a training/seminar on breast self-examination and breast cancer screening given a chance at the moment. However this would not be the case as about 67.3% of the respondents still opted not to avail themselves should such an opportunity present itself as illustrated in the table 4.4 above.

4.3.6 Curable of breast cancer.

Table 4.5 Early breast cancer is curable

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	86	58.5	58.5	58.5
	No	61	41.5	41.5	100.0
	Total	147	100.0	100.0	

Something to smile about is that at least 58.5% of the respondents are aware that early breast cancer is curable as summarised in table 4.5 above. However majority still are not well acquainted with the consequences of presenting themselves with advanced breast cancer as illustrated in table 4.6 below.

Table 4.6 Aware of consequences of presenting with advanced breast cancer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	48	32.7	32.7	32.7
	No	99	67.3	67.3	100.0
	Total	147	100.0	100.0	

4.4 Secondary school curriculum on breast self-examination and breast screening.

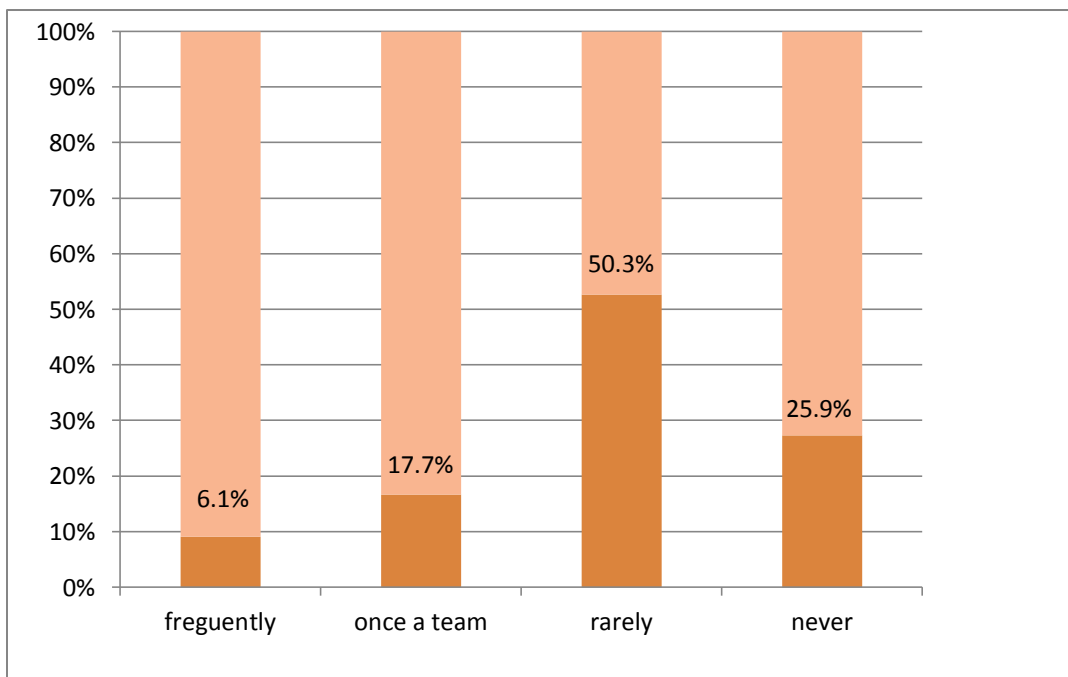


Fig.4.7 how often do you learn about breast self-examination and breast screening in the secondary school curriculum?

Rarely do students learn about breast self-examination and breast screening in the secondary school curriculum as highlighted by the high frequency in the fig 4.7 above may be because the curriculum developers never taken into account the issue of breast-

self examination and screening as a matter of great importance to the students at still a tender age.

4.5 Influence of institutional factor on breast cancer screening uptake

Table 4.7 Correlation on uptake of clinical breast screening and institutional factors

Correlations				
		Have you ever gone for clinical breast screening?	Proximity of breast cancer screening facilities from home/school	What is the cost of breast cancer screening and clinical breast examination in the hospital facilities?
Have you ever gone for clinical breast screening?	Pearson Correlation	1	-0.032	-0.332
	Sig. (2-tailed)		0.002	0.001
	N	147	147	147
Proximity of breast cancer screening facilities from home/school	Pearson Correlation	-0.032	1	0.097
	Sig. (2-tailed)	0.002		0.021
	N	147	147	147
What is the cost of breast cancer screening and clinical breast examination in the hospital facilities?	Pearson Correlation	-0.332	0.097	1
	Sig. (2-tailed)	0.001	0.021	
	N	147	147	147

A table of correlation above highlights on the extent and nature of the relationship that exists between the dependent variable which is the uptake of breast screening and other variables of interest. It can be clearly observed from table 4.7 above that both dependent variable and the variables proximity of the health facilities from home or school and cost of breast cancer screening is positively correlated with all the values lying within the accepted region of -1 and 1. This is further confirmed by their respective levels of significance which are well below the 0.05 set probability value.

Table 4.8: model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.154	0.024	0.003	0.501

Table 4.9: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.865	3	0.288	1.150	0.031
	Residual	35.842	143	0.251		
	Total	36.707	146			

Predictors: Proximity of the health facility from home/school, Media used for advertisement and Education on relevance of breast screening in control of cancer.

Both table 4.8 and 4.9 emphasize on the significance of our model with all the variables, which can be termed as institutional factors being significant as 0.031 is less than the accepted probability value of .05. This in essence confirms that the uptake of breast cancer screening being our dependent variable is influenced by the above named institutional factors. Virtually each variable describes a 2.4% variation of the dependent variable as shown under the column of R square in table 4.8. Each factor's influence on the dependent variable is explained by the beta values in the table of co-efficient below.

Table 4.10 :Table of co-efficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.193	0.275		4.334	0.000
	Proximity of the health facility	0.241	0.067	0.020	0.236	.013
	Media used to advertise breast cancer examination/screening	0.051	0.050	0.034	1.815	0.002
	Education on relevance of breast screening in control of breast cancer	0.091	0.085	0.151	0.180	0.010

The Standardized beta coefficients column in table 4.10 explains the impact of each variable in determining the dependent variable. As one can see education explains about 15.1 percent of the dependent variable. This means that uptake of breast cancer screening is much relevant to the educated than the less educated. Also of importance is the appreciation of media contribution towards uptake of breast screening as it explains about 3.4% of the dependent variable. Proximity which is also key affects 2% of the uptake of breast cancer screening.

4.6 Socio-Economic, Demographic and Cultural influence on uptake of breast cancer screening/ examination among school respondents.

There are significant associations between socio – economic and cultural factors on breast screening uptake respectively as exhibited by the outcome of the chi-square test carried on the relevant variables as shown in table 4.13.

Table 4.11: correlation on clinical breast examination/screening and socio-economic and culture influence

Correlation					
		Have you ever gone for clinical breast examination/screening	some cultural beliefs and practices in the community may prevent breast examination and screening for breast cancer	Some religious belief may prevent students from carrying out breast examination and screening for breast cancer	The cost of breast cancer screening may prevent student from going for early breast cancer screening in hospital
Have you ever gone for clinical breast examination/screening	Pearson correlation	1	-0.052	0.152	-0.332
	Sig.(2-tailed)		0.001	0.001	0.001
	N	147	147	147	147
some cultural beliefs and practices in the community may prevent breast examination and screening for breast cancer	Pearson correlation	-0.052	1	0.056	0.026
	Sig.(2-tailed)	0.001		0.000	0.000
	N	147	147	147	147
Some religious belief may prevent students from carrying out breast examination and screening for breast cancer	Pearson correlation	0.152	0.056	1	0.106
	Sig.(2-tailed)	0.001	0.001		0.001
	N	147	147	147	147
The cost of breast cancer screening may prevent student from going for early breast cancer screening in hospital	Pearson correlation	-0.332	0.026	0.106	1
	Sig.(2-tailed)	0.001	0.001	0.001	
	N	147	147	147	147

Table 4.11 exhibits the relationship that exists between the uptake of breast cancer screening and the socio-economic and cultural influence. A highly significant positive correlation occurs between the religious beliefs that prevent students from taking breast examination/ screening of breast cancer and the uptake of clinical breast screening (Chi-square value=76.973, df = 3, p < 0.05), (r = 0.152, p =0.001) and out of 72% of the total respondents who did not undertake clinical breast examination, 85.03% attributed this to the existing religious beliefs in their respective communities (Tables 4.11 and 4.14). Socio – cultural factors have significant negative correlation with clinical breast examination (Chi-square value= 57.837, df = 2, p < 0.05), (r = - 0.052 , p = < 0.05) and again another 85.03% of the total respondents did not undertake clinical breast screening due to socio – cultural factors (Tables 4.14 and 4.11).

Table 4.12: cultural beliefs and practices that prevent student from undertaking breast examination and screening for breast cancer

Some Cultural beliefs and practices in the community may prevent students from undertaking breast examination and screening for breast cancer			
	Observed N	Expected N	Residual
Agree	33	49.0	-16.0
Strongly	92	49.0	43.0
Disagree	22	49.0	-27.0
Total	147		

Table 4.13: Some religious beliefs may prevent students from carrying out breast examination and screening for breast cancer

	Observed N	Expected N	Residual
Agree	71	36.8	-29.8
Agree Strongly	54	36.8	-21.8
Disagree	15	36.8	17.3
Disagree strongly	7	36.8	34.3
Total	147		

Table 4.14: Chi-Square test

Test Statistics		
	Cultural beliefs and practices in the community	Religious beliefs
Chi-Square	57.837	76.973
Df	2	3
Asymp. Sig.	0.001	0.001

Table 4.15: Correlation on BSE and Age

		Have you ever gone for clinical breast screening?	Age of the respondents
Have you ever gone for clinical breast screening?	Pearson Correlation	1	-0.032
	Sig. (2-tailed)		0.002
	N	147	147
Age of the respondents	Pearson Correlation	-0.032	1
	Sig. (2-tailed)	0.002	
	N	147	147

Clearly from the table above, age has negative significant association with BSE among the student who participated in the study. The reasons for this phenomenon are outlined in the chapter five of the study.

4.7 The influence of psychosocial factors on breast cancer screening uptake

The table 4.15 below presents psychosocial factors that influence breast cancer screening uptake. Fear, Anxiety, embarrassment, social pressure and stigma are significantly associated to breast cancer screening uptake.

Table 4.16: Fear, Anxiety and Embarrassment prevent students from going for breast cancer screening

	Observed N	Expected N	Residual
Agree	33	49.0	-16.0
Agree Strongly	92	49.0	43.0
Disagree	22	49.0	-27.0
Total	147		

Table 4.17 Social pressure and stigma associated to breast cancer may prevent students from going for early breast cancer screening

	Observed N	Expected N	Residual
Agree	33	49.0	-16.0
Agree strongly	92	49.0	43.0
Disagree	22	49.0	-27.0
Total	147		

Table 4.18: Correlations on clinical breast examination/screening and psychosocial factors

				Social pressure and stigma associated to breast cancer may prevent students from going for early breast cancer screening
		Have you ever gone for clinical breast examination/screening?	Fear, Anxiety and Embarrassment prevent students from going for breast cancer screening	
Have you ever gone for clinical breast examination/screening?	Pearson Correlation	1	-0.152	-0.533
	Sig. (2-tailed)		0.001	0.002
	N	147	147	147
Fear, Anxiety and Embarrassment prevent students from going for breast cancer screening	Pearson Correlation	-0.152	1	1.000
	Sig. (2-tailed)	0.001		0.000
	N	147	147	147
Social pressure and stigma associated to breast cancer may prevent students from going for early breast cancer screening	Pearson Correlation	-0.533	1.000	1
	Sig. (2-tailed)	0.002	0.001	
	N	147	147	147

Table 4.19: Chi-Square test

	Fear, Anxiety and Embarrassment	Social Pressure and Stigma
Chi-Square	57.837	57.837
Df	2	2
Asymp. Sig.	0.001	0.001

There is significant association between fear, anxiety, Embarrassment and breast screening uptake (Chi square= 57.837, df =2, $p < 0.05$) and 62.59%% of the total respondents did not undertake breast screening examination due to the fear associated to finding breast cancer (Table 4.15 and Table 4.18). Social pressure and stigma is highly associated to clinical breast screening uptake (Chi square value= 57.837, df =2, $p < 0.05$) and 62.59% of the total respondents who did not undertake breast screening attributed it to the social pressure and stigma associated to it (Table 4.17).

Table 4.20: Correlations on clinical breast examination/screening and knowledge

Correlations				
			Social and Educational Commitment deny students enough time to undertake early breast cancer screening in specialized health facilities.	The teaching of breast health, Breast self-examination and screening for breast cancer should be carried out by other professionals outside the school rather than teachers.
Have you ever gone for clinical breast examination/screening?	Pearson Correlation	1	-0.152	0.995
	Sig. (2-tailed)		0.002	0.001
	N	147	147	147
Social and Educational Commitment deny students enough time to undertake early breast cancer screening in specialized health facilities.	Pearson Correlation	-0.152	1	0.085
	Sig. (2-tailed)	0.002		0.02
	N	147	147	147
The teaching of breast health, Breast self-examination and screening for breast cancer should be carried out by other professionals outside the school rather than teachers.	Pearson Correlation	0.995	0.085	1
	Sig. (2-tailed)	0.001	0.02	
	N	147	147	147

There is a significant relationship between uptake of breast screening examination, student commitment and imparting knowledge to the student to outsiders as opposed to their studies the more their chance of undertaking BSE uptake is reduced. On the latter case student prefer to be addressed by stranger on matter that touches on their well being as opposed to their teachers something of which a time make them too shy off or even stop communicating their problems if there did exist any.

4.8 Discussion of the findings

4.8.1 The influence of Social-economic factors on breast cancer screening uptake

Social-economic have significant negative association with clinical breast cancer examination. From my findings it was observed that 85.03% individuals of the total respondents would never attend breast cancer screening and examination as some of them probably were economically deprived and therefore priorities were given to acquisition of basic needs as opposed to auxiliary requirements of breast screening.

A significant negative association occurs between the cost of screening and the uptake of clinical breast screening and 21.08% of the respondents did not undertake clinical breast examination due to the high cost of screening. As earlier mentioned high consultation fee amongst the doctors/nurses in the neighbouring health facilities explains the low numbers of individuals carrying out breast cancer screening and examination uptake. This further explains the lower percentage of 4.76% of information on breast cancer screening uptake amongst nurses and doctors. This reduction of breast screening uptake amongst individuals from Kisii region is attributed to the fact that majority are believed to be living below US dollar per day and considering the high cost of clinical screening for breast cancer/ examination. The high cost of clinical breast examination and Breast cancer screening uptake especially in developing countries is a big hindrance to the uptake of such services by women (WHO, 2015).

4.8.2 The influence of Socio – cultural factors on breast cancer screening uptake

Socio – cultural beliefs have significant negative association with clinical breast examination and 26% of the respondents did not undertake clinical breast screening due to it. From the African perspective, a number of communities are associated with myths about the cause of breast cancer within the community. The condition is stigmatized hence hindering presentation and open discussion of the condition in its early stages of development when treatment is possible. Breast cancer is not understood to be a disease but as a misfortune whose explanation lies further than treatment in a hospital facility. In a nutshell some Cultural belief or rather myths are seen to be the greatest barriers to uptake of breast screening among communities in Africa. According to *Ibid* (2015), most individuals especially women resort to consulting the gods to identify the reason and whoever is behind the plague thus a delay in presentation for screening and treatment. Religious beliefs plays a significant role in determining the individuals choice of taking breast screening examination or not as it has a positive significant relationship of 0.152 with the uptake of breast screening examination.

(Deshpand,2014) point out that in some studies, religiosity has been negatively associated with breast health promoting behavior, while others have found spirituality to be positively associated with such health behaviors. Cancer control strategies targeting women must therefore include messages that are consistent with their beliefs, attitudes and experiences (Baron *et al.*, 2015). The belief in invulnerability to breast cancer also delays reporting and screening uptake (Cullati,2014). Other individuals believe that breast cancer isn't a serious illness, which can moderate the effect of perceived seriousness of the disease on BSE practice and screening uptake. Others believe that talking about the disease will cause its' onset hence delay reporting and screening uptake (*ibid*, 2015).

4.8.3 The influence of psychosocial factors on breast cancer screening uptake

There is a negative significant association amongst fear, anxiety, embarrassment and breast screening uptake and 22% of the respondents did not undertake BSE due to fear, anxiety or embarrassment associated to finding breast cancer. The students at some point

fear for the outcome of the screening, given that breast cancer is heavily stigmatized in the community. This fear is further accelerated the resultant psychological stress and social rejection that would occur should breast cancer be detected, hence shun away from breast screening. Women in certain communities regard breast screening as a death sentence and will therefore prefer not to know the status of their breast health. This is due to fear for the screening's outcome and the resultant stress associated with cancer in the breasts. The fear of finding something wrong and the feeling that it is better not to know, have been reported as barriers to breast cancer screening among Iranian women (Lamyian *et al.*,2015). However, (Hay *et al.* 2006)found a positive relationship between breast cancer worry and the screening behavior of women.

It is worth noting that aspect of embarrassment comes out clearly especially when male health professionals conduct clinical examination of the breasts, and the confirmation that a female student has breast cancer after the screening not only embarrasses her, but the entire family and community due to the implications. Some of them feel shy to explain their condition to male attendants and strangers whose confidence they are not guaranteed in screening facilities. Shyness, embarrassment and feelings of discomfort if breast cancer screening is conducted by a male or a strange health professional have been cited as barriers to the uptake of breast cancer screening among Asian American women (Tzu –Yin Wu *et al.*, 2015).

4.8.4 The influence of knowledge on breast screening uptake

There is a significant positive association between the respondents' knowledge concerning breast cancer screening and the uptake of screening and 89.1% of the respondents who did not undertake screening had low knowledge about breast cancer and the screening process. Low knowledge about causation and vulnerability of the respondents to breast cancer imply that the respondents are unaware of the implications of breast changes, the necessity of early breast screening and where to obtain the screening services. Knowledge about the vulnerability of an individual, the severity of late breast cancer and the importance of early screening may bring about the uptake of early screening among the students. The key informant said that lack of information on what to do in case of a lump being felt in the breasts may greatly influence early uptake

of breast screening. (David and Rassaby,2008), acknowledges that a knowledgeable public not only carries out BSE, but also consults medical experts about any breast changes and the appropriate health actions to take in order to avoid the complicated effects of late breast cancer.

4.8.5 The influence of social commitments on breast screening uptake

Commitments are significant and negatively associated to the uptake of clinical breast examination among the respondents and 23.8% of the respondents who indicated that socio – commitments may influence uptake did not undertake clinical breast examination. Most students in the sub-county are normally committed to their studies owing to their priorities in performing at school and therefore hardly find time to go for clinical breast screening. This coupled with the fact that the lumps in the breasts are not painful, makes most students to wish them away with time, thus reducing screening uptake. (Aygul and Ayse,2011) observed that among individual's especially female individuals of child bearing age, postponement and neglect due to lack of physical signs and feeling of well being were barriers to breast screening.

5 CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENTIONS

5.1 Introduction

The main focus of the study was to investigate on the factors that influence the uptake of cancer screening among secondary school students in Kisii South sub-county. The findings of the study will contribute some knowledge to stakeholders, policy makers on how to come up with more effective curriculum to promote/enhance impede the looming cases of breast cancer not only among the students in the county but also the entire country and to great extent the entire world.

This chapter presents summary of the study and research findings as per the specific objectives of the study, conclusion and recommendations on the possible ways of addressing breast cancer.

5.1.1 Students level of awareness about breast cancer, BSE and breast cancer screening

Most of the respondents precisely 54.4% were unaware of the existence of breast cancer, BSE and breast cancer screening. This can be attributed the factors that have already been mentioned in chapter four.

5.1.2 Institutional characteristics in breast screening uptake among students

Significant associations were found between: Breast health education at school and breast screening uptake, guidance and follow up by nurses on BSE and the uptake of screening, advertisement on breast cancer screening and the uptake of breast screening, and the respondents' knowledge concerning breast cancer screening and uptake of screening. Eighty nine point one percent of the respondents who did not undertake screening had low knowledge about breast cancer and the screening process and 85.4% of the students who did not undertake clinical breast examination had never been provided with breast health education either at a hospital facility or at school. Nurses or teachers had never guided Eighty eight percent of the students who did not undertake BSE on the necessity and agility of conducting BSE.

5.1.3 Psychosocial factors in breast cancer screening uptake

A significant association was found between: fear and breast screening uptake, the anticipated pain during a breast cancer screening uptake among the respondents, socio – stigma and clinical breast screening uptake, the concern that breast screening is embarrassing and the uptake of clinical breast examination. Thirty eight point seven percent of the respondents did not undertake BSE due to the fear associated to finding breast cancer, whereas 94.7% of the respondents held that the pain and discomfort associated to breast cancer screening was a deterrent to its uptake, especially among students. Only 26.4% of the respondents held that embarrassment inhibits breast-screening uptake.

5.1.4 Cultural and religious practices in breast screening uptake among the students

There is significant association between cultural practices and breast screening uptake among the respondents. Religious practices and clinical breast screening uptake have significant positive association. Ninety two point eight percent of the respondents who undertook clinical breast examination held that some cultural practices may influence breast screening uptake.

5.1.5 Socio-Economic and Cultural factors in breast cancer screening uptake

There is significant association between; travel distance to the screening facility and clinical breast screening uptake, the cost of screening and the uptake of clinical breast screening, Commitments and the uptake of clinical breast examination among the respondents. 41.9% of the respondents did not undertake breast screening due to the long distance to screening facilities, whereas 47.3% of the respondents did not undertake clinical breast examination due to the high cost of screening. In addition, there was a significant association between; the socio - economic status of the respondents and breast screening uptake, Socio – cultural factors and clinical breast examination, educational level of the respondents and breast screening uptake. 36% of the respondents who did not undertake breast screening attributed it to the socio – stigma associated to breast cancer.

5.1.6 Demographic factors

Demographic factors such as age and travel distances to breast screening uptake were found to be significantly associated to breast screening uptake among students. There is actually a negative association between age and clinical screening uptake. From the descriptive analysis done on age illustrated in fig 4.3, the respondents within the age bracket of 14-16 years had the highest uptake while the respondents in the age bracket 20-22 years had the least uptake of breast screening uptake considerably the least breast feeding hence breast screening uptake considerably decreases with increase in age an aspect which can be attributed to loss of keenness about breast health on assumption that all is okay.

Most respondents within the age bracket 14-16 years are believed to be active on issues related to breast health and to a greater extent its uptake may be to the closeness to the nurses and matrons in the boarding schools who sensitize students on ways of how to conduct BSE and vitality of breast cancer screening as opposed to students in the same age bracket but coming from the mixed day schools in the rural areas. This can be due to other factors that can be generally be categorized as the institutional factors and proximity which also has a negative association with the uptake of the BSE.

Majority pointed out that the distance to the screening facility played an important aspect in terms of whether they would take BSE or not. The greater the distance the higher cost which would not be met by the school going students.

5.2 Implication of the study findings

45% of the students interviewed indicated that they had never undertaken any form of breast screening for some reasonable duration, hence the need for more innovative and aggressive ways to improve breast cancer screening uptake among the female students in school.

A majority of the respondents (29.25%) received information about breast cancer and screening through the radio, hence the need to explore the diversification of radio programmes and advertisements on breast cancer screening to create greater awareness, correct misconceptions and promote breast screening uptake. Forty one point nine percent

of the respondents did not undertake breast screening due to long travel distance to screening facilities, hence the need to explore the introduction of mobile screening units to mitigate the influence of long distances to screening facilities on screening uptake.

5.3 Conclusions

- The proportion of students in Kisii Sub County that have ever undertaken any form of breast cancer screening in the past is 24.49%.
- Socio – Economic Cultural factors, travel distance to screening facility, cost of screening, most cultural practices and socio – commitments have significant negative correlation with breast cancer screening uptake. However educational level, socio – economic status, most religious practices and socio – cultural factors have a significant positive association with breast cancer screening uptake.
- Psychosocial variables such as fear, anxiety, stigma and concern for embarrassment were found to be significantly associated to breast cancer screening uptake among the respondents.
- Institutional characteristics such as Breast Health Education, guidance and follow up by nurses on BSE, Advertisements on breast cancer and screening have significant and positive correlation with breast cancer screening uptake.
- The level of respondent’s knowledge about breast cancer and screening has a significant positive association with breast screening uptake.

This study therefore affirms that socio-economic and cultural factors have association with the student’s uptake of breast cancer screening. There is association between psychosocial factors and breast screening uptake among female students. There is association between institutional and breast screening uptake. There is association between the student’s knowledge about screening and the uptake of breast cancer screening.

5.4 Recommendations

This study makes the following recommendations:

- The Ministry of Health in collaboration with the Ministry of Education should intensify advertisements on breast cancer and screening through; radio, internet,

television, issue of brochures and posters to bring about increased awareness and an attitude change to promote uptake.

- The Ministry of Health should come up with a breast cancer screening policy to facilitate subsidies of consultation and screening fee to enable student who come from poor social economic status to uptake breast cancer screening
- The Ministry of Health should introduce mobile screening units to bring services closer to the students willing and are unable to do uptake breast cancer screening due to proximity so as to improve the students well-being health wise improve uptake.
- The Ministry of Education and that of Health should work on a policy framework to disseminate breast cancer screening information to the students at the school level through an integrated curriculum and public forums to counter fear and misconceptions about breast cancer.

5.5 Suggestions for further research

- I. Study on the factors that influence the adoption of breast health education in middle level colleges
- II. study factors that hinder the formulation and implementation of breast screening education in the secondary school curriculum and to some extent in the tertiary lever colleges

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APPENDICES

Appendix I –Questionnaire

DEAR RESPONDENT,

This research questionnaire seeks to obtain data for the purpose of knowledge improvement on breast cancer screening among students and for the attainment of Masters Degree in Public Health (Epidemiology and disease control) JOOUST(Kenya).This research seeks to assess the Factors that affect the Uptake of Breast Cancer screening among Secondary School Students in Kisii south sub-county, Kenya. You have been specifically selected to participate in the study to assist the researcher achieve the goals of the study. The data is for educational research; therefore your responses to the items in this questionnaire will be treated with absolute confidentiality and shall be used for the study alone. The results obtained at the end of the study will be communicated to you.

Thanks.

Ondimu Thomas

Tel. No. 0726513637

FOR INFORMATION OR ANSWERS CONCERNING YOUR RIGHTS AS A RESEACH SUBJECT, YOU MAY CONATCT

To chair person of the University of Eastern Africa Baraton Ethical Review committee

P.O Box 2500; 30100-Eldoret Kenya

IF THERE IS ANY PORTION OF THIS CONSENT EXPLANATION SHEET THAT SHOULD NOT BE UNDERSTAND ASK THE INVESTIGATOR BEFORE SIGNNING.

I acknowledge receipt of this agreement including the consent explanation and informed consent agreement.

Volunteer's Signature _____ Age _____ Date _____

Volunteer's Printed Name _____ Age _____ Date _____

Parent Printed Name _____ Age _____ Date _____

Witness Signature _____ Age _____ Date _____

Witness Printed _____ Age _____ Date _____

A. Background information about school

Tick the most appropriate response (√)

1. What is the type of your school?

Boys Girls mixed

2. To which category does it belong?

Day Boarding Boarding and day

3. To which group does your school belong?

Urban Rural

B. Background information about the student

4. What is your gender?

Female Male

5. To which age category do you belong?

14-16 years 17-19 years 20-22 years

6. Have you ever heard of breast cancer screening?

Yes No

7. If your answer in 5 above is yes, through which media did you get information about breast cancer screening?

Radio Television Newspapers
Internet Teacher Nurse/Doctor
Other

Please specify

8. Have you ever carried out self-breast examination?

Yes No

If your answer in (6) above is No, give reason(s) for your answer.

9. If your answer in (7) above is yes, how do you rate your ability to do a self Breast Examination?

Excellent Good Fair Low
Not Sure

10. Have you ever gone for clinical breast examination /screening?

Yes No

11. How often do you have educational sessions about breast health and screening organized by health officers/nurses?

Frequently Once a term rarely never

12. How often do you learn about breast self-examination and breast screening in the secondary school curriculum?

Frequently once a term rarely never

13. Do you think breast self-examination and screening should be taught in secondary schools?

Yes No

Give a reason for your answer.

14. Would you attend a training/seminar on breast self-examination and breast cancer screening if you were given a chance now?

Yes No

15. Is early breast cancer curable?

Yes No

16. Are you aware of the consequences of presenting with advanced breast cancer?

Yes No

17. How close are breast cancers screening facilities to your home/school?

Within 1KM between 2-4KM between 5-14 KM beyond 15KM

18. What is the cost of breast cancer screening and clinical breast examination in the hospital facilities?

Expensive very expensive cheap very cheap no idea

C. EDUCATION

19. Have you ever been taught the role of breast self examination and breast screening in the control of breast cancer?

Yes No

If your answer in (16) above is no, give a reason(s) for your answer.

20. Have you ever been shown or given pamphlets/ hand outs/ video programmes

Featuring breast self-examination, breast screening and breast cancer in your school?

Yes No

21. How often do you access and use breast health education materials in

Learning?

Every day Weekly Monthly Termly yearly

Never

22. How often does the school buy breast health education materials and books?

Weekly monthly Termly yearly

never Other

Specify _____

23. Equipping the school with breast health education materials is not a priority

Compared to equipping the school with other academic materials.

Agree agree strongly disagree disagree strongly

D Socio- Economic, Demographic, Cultural Factors, Attitude And Feelings

24. Some cultural beliefs and practices in the community may prevent students from undertaking Breast Examination and Screening for Breast Cancer.

Agree strongly Disagree Disagree strongly

25. Some religious beliefs may prevent students from carrying out breast Examination and screening for breast cancer.

Agree Agree strongly Disagree Disagree strongly

26. Social pressure and stigma associated to breast cancer may prevent students from going for early breast cancer screening.

Agree Agree strongly Disagree Disagree strongly

27. The cost of breast cancer screening may prevent students from going for early breast cancer screening in hospitals.

Agree Agree strongly Disagree Disagree strongly

27. The distance from school/ home to breast cancer screening facilities may discourage students from going for early breast cancer screening in hospitals.

Agree Agree strongly Disagree Disagree strongly

28. Fear, Anxiety and Embarrassment prevent students from going for Breast Cancer Screening.

Agree Agree strongly Disagree Disagree strongly

29. Social and Educational commitment deny students enough time to undertake early breast cancer screening in specialized health facilities.

Agree Agree strongly Disagree Disagree strongly

30. Breast Self-examination and Breast cancer awareness may promote uptake of early breast cancer screening among students in secondary schools.

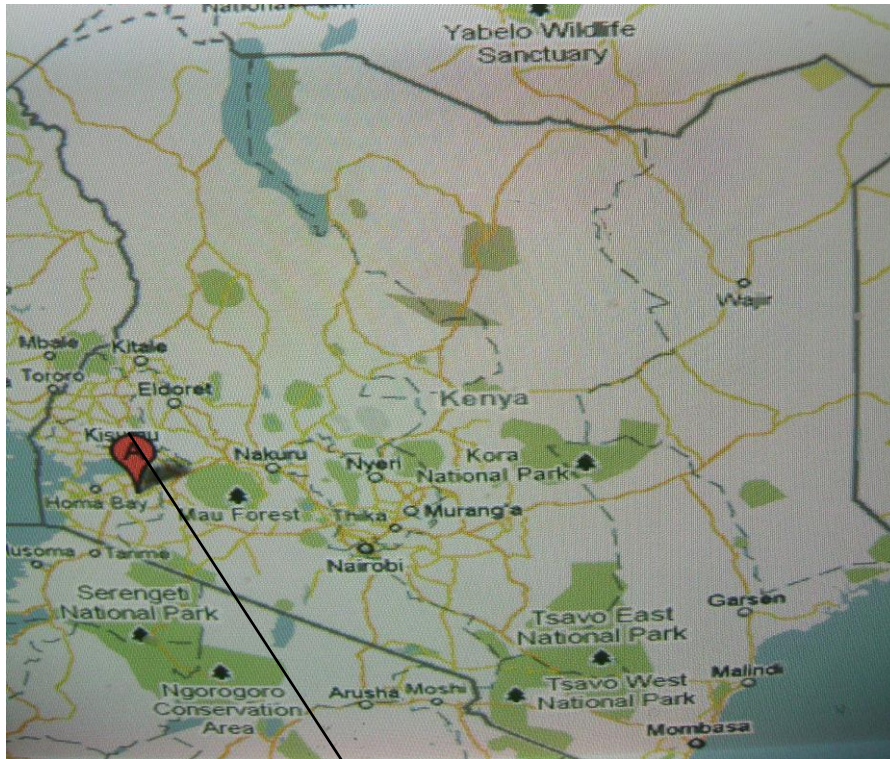
Agree Agree strongly Disagree Disagree strongly

31. The teaching of breast health, Breast self-examination and screening for breast cancer should be carried out by other professionals outside the school rather than teachers.

Agree Agree strongly Disagree Disagree strongly

Give a reason(s) for your answer

Appendix II – Google Map Showing Location of the Study Region.



KEY

A-Kisii south sub-county

Appendix III- List of Secondary Schools in Kisii south sub county and Their Student Population.

SCHOOL	STUDENT POPULATION
1 Itiero boys High School	1200
2 Itiero girls high school	900
3 St Peter's Suneka (Mixed)	950
4 Ekerore sec (Mixed)	150
5 Ekerubo Sec (Mixed)	410
6 St paul' Igonga Sec (Mixed)	455
7 Botoro(Mixed)	350
8 Mosando Sec (Mixed)	230
9 Bishop mongendi Sec (Mixed)	550
10 Iruma Sec (Mixed)	357
11 Nyangonge High (Girl's)	400
12 Rianyabaro centre of ext	300
13 Kerina Sec (Mixed)	250
14 Omweri sec (Mixed)	298
15 Isamwera sec (Mixed)	300
Total	7100

Appendix IV – Research Authorization by University of Eastern African Baraton



**OFFICE OF THE DIRECTOR OF GRADUATE STUDIES
AND RESEARCH**

UNIVERSITY OF EASTERN AFRICA, BARATON

P. O. Box 2500-30100, Eldoret, Kenya, East Africa

4 February, 2015

Thomas Orindi Ondimu
School of Health Sciences
Jaramogi Oginga Odinga University of Science and Technology

Dear Thomas

Re: ETHICS CLEARANCE FOR THESIS PROPOSAL (REC: UEAB/015/002/2015)

Your thesis proposal entitled *"Factors that influence the uptake of Breast Cancer Screening among secondary school students: A case of Kisii South Sub-County, Kenya"* was discussed by the Research Ethics Committee (REC) of the University and your request for ethics clearance was granted approval.

This approval is for one year effective 4 February 2015 until 4 February 2016. For any extension beyond this time period, you will need to apply to this committee one month prior to expiry date.

We wish you success in your research.

Sincerely yours,

A handwritten signature in blue ink that reads 'Jackie Obey'.

Mrs. Jackie Obey - Gear
Chairperson, Research Ethics Committee



A SEVENTH-DAY ADVENTIST INSTITUTION OF H IGH ER LEARNING
CHARTERED 1991

Appendix V-Authorization by Board of postgraduate studies



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
BOARD OF POSTGRADUATE STUDIES
Office of the Director

Tel. 057-2501804
email: bps@jooust.ac.ke
Our ref; **H152/4207/2013**
Your ref;

P.O. BOX 210 - 40601
BONDO

Date: Monday, December 1, 2014

TO WHOM IT MAY CONCERN

RE: ONDIMU THOMAS ORINDI- H152/4207/2013

The above person is a bona fide Masters student of Jaramogi Oginga Odinga University of Science and Technology in the School of Health Sciences pursuing a degree in Public Health. He has been authorized by the University to undertake research on the topic; "*Factors that Influence the Uptake of Breast Cancer Screening among Secondary School. A case of Kisii South Sub-County, Kenya*".

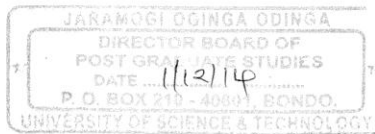
Any assistance accorded to him shall be appreciated.

Thank you.

Prof. Judith Miguda-Attyang

DIRECTOR, BOARD OF POSTGRADUATE STUDIES

Copy: DVC, AA
Dean, SHS



Appendix vi-Authorization to collect data in kisii south sub-county

KISII COUNTY GOVERNMENT



MINISTRY OF HEALTH

Telegrams:
Telephone:
E mail: kisiihospital@gmail.com
Ref: KL5/DRE/14/30/VOL.1
Date: 9th December., 2014

DEPARTMENT OF RESEARCH
KTRH
P.O. BOX 92-40200
KISII

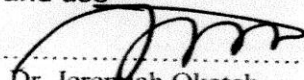
✓ Thomas Orindi Ondimu

RE: Data a Collection at Kisii South Sub-Couty

This is to inform you that the department of research at KTRH has reviewed your proposal titled: **Factors that influence the uptake of breast cancer screening among secondary school students:A case study of Kisii South sub-county.** The following are our comments:

You are authorized to proceed with data collection.upon payment of **Kshs.two thousand(2,000/-)**

Please ensure a copy of final Study report is sent to us for retention, information and use


.....
Dr. Jeremiah Okatch
Department of Research

CC: CEO.KTRH
SMOH KISII SOUTH

*All proposed
secondary schools
Permission for
Research granted
19/12/2014*

