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RWANDA

**FACTORS INFLUENCING BREAST CANCER SCREENING PRACTICES AMONG
WOMEN OF REPRODUCTIVE AGE IN SOUTH KAYONZA, RWANDA**

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DISSERTATION

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REPRODUCTIVE AGE IN SOUTH KAYONZA, RWANDA**

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**A dissertation submitted in partial fulfillment of requirements for the degree of the
Masters of sciences in Nursing (Oncology track)**

In the College of Medicine and Health Sciences

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2019

DECLARATION

I, the undersigned, declare that this dissertation is my original work, has not been presented this or any other University and that all the source materials used for this thesis have been duly acknowledged.

Pierre Céléstin IGIRANEZA R/N: 211804419

Signature

DEDICATION

This work is dedicated:

To God Almighty,

To my wife Uwamwezi Francine, my Parent, sisters, and, Brother's in law Rwamamara Dennis and his family whose affection and support have been a great source of motivation.

My special gratitude and deepest appreciation to my friends for giving me their time and support in study process.

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ABSTRACT

Introduction: Breast cancer in Rwanda is a major concern in the woman's health, most breast cancer are diagnosed at an advance stage when screening of breast can be done early.

Aim: To assess factors influencing breast cancer screening practices among women of reproductive age in south Kayonza.

Methodology: The study was a quantitative conducted on 246 women from four Health centers in south Kayonza. The targeted population was the women aged from 16 to 49. This was a descriptive, cross-sectional study using convenience sampling technique. SPSS version 21 was used for data analysis including descriptive statistics to describe participants' socio-demographic characteristics using tables, graphs, percentages and chi-square was used to present the results and approval to conduct research was obtained from Institution Review Board (IRB) of University of Rwanda, College of Medicine and health sciences. The data collection tool was structured questionnaire.

Result: The knowledge mean score among women in south Kayonza were 60.2% on breast cancer risk factors, 55.5 % of influence about screening practices while knowledge on BSE were 28% and knowledge on CBE and breast ultrasound scan were 16.4% which is poor knowledge. The practice of breast screening practices in last two years, (72%) of respondents had never practiced BSE whereas 81.3% of respondents surveyed were not used CBE or breast ultrasound scan. The main source of information was 30.4% of respondents. The results found significant relationships between age group and marital status on breast cancer screening practices.

Conclusion: Promotion of breast cancer screening practices are in need for knowledge and practices improvement among women in south Kayonza.

Recommendations: Health promotion and health dialogue is the remarkable framework for women to acquire knowledge basic knowledge related to breast cancer. Educate should be delivered to the public with deficiency education to improve their level of knowledge about breast cancer screening. Education of women will be the bottom-line to the basic steps of breast self-examination and clinical breast examination in their respective health facilities.

Key word: Breast cancer screening, influence, practice

LIST OF SYMBOLS AND ACRONYMS/ABBREVIATIONS

ACS: American Cancer Society

B SE: Breast Self-Examination

CBE: Clinical Breast Examination

MOH: Ministry OF Health

HER2: Human Epithelium Growth Factors Receptors 2

SPSS: Statistical Package for Social Sciences

WHO: World Health Organization

NISR: Nation Institute of Statistics of Rwanda

HMIS: Health Management Information System

SSA: Sub-Saharan Africa

IRB: Institution Review Board

BCCOE: Butaro Cancer Center of Excellence

HBM: Health Belief Model

NCDs: Non Communicable Diseases

MCH: Maternal Child Health

Table of Contents

DECLARATION.....	i
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
LIST OF SYMBOLS AND ACRONYMS/ABBREVIATIONS	v
List of Tables.....	viii
List of Figures	ix
CHAPTER ONE: INTRODUCTION.....	1
1.0 Introduction.....	1
1.1 Background to the study.....	1
1.2 Problem Statement.....	2
1.3 The aim of the study.....	3
1.4. Research objectives	3
1.5 Research questions	3
1.7 Definition of key term	4
1.8 Organization of study.....	4
CHAPTER 2: LITERATURE REVIEW	5
2.0 Introducion	Error! Bookmark not defined.
2.1 The Burden of Breast Cancer	5
2.2. The influence of knowledge on breast cancer screening practices	6
2.3 Socio-economic and cultural factors influencing breast cancer screening practices	7
2.4. Breast self-examinations and screening practices.....	8
2.5 Breast cancer risk factors in Risk factors	8
2.6 Barriers to breast cancer screening practices	9
2.7 Theoretical and conceptual framework	10
CHAPTER 3: RESEARCH METHODOLOGY	13
3.1 Introduction.....	13
3.2 Research design	13
3.3 Research settings	13
3.4 Study Population	13
3.5 Sampling and sampling strategy.....	13
3.5.1 Sub-sample calculation.....	14
3.5.1 Sampling Procedure	14
3.5.2 Locations and Households	14
3.6 Inclusion and exclusion criteria	15

3.7 Data Collection instruments	15
3.8 Reliability and Validity	15
3.9 Data collection procedure	15
3.10. Data analysis	16
3.11 Data management	16
3.12 Ethical consideration	16
3.13 Problem and Limitation of study	17
CHAPTER FOUR: PRESENTATION OF RESULTS	18
4.0 Introduction	18
4.4.0 Knowledge on breast cancer screening methods	20
Table 4.8 Relationship between health facilities influence and breast screening examination	24
CHAPTER 5: DISCUSSION	26
5.1 Introduction	26
5.2. Influence of Knowledge on breast cancer screening and source of information	26
5.3 The influences of health facilities on breast screening practices	28
5.4 Socio-economic and culture barrier to breast cancer screening practices	28
CHAPTER SIX: CONCLUSION AND RECOMMENDATION	29
6.1 Introduction	29
6.2. Recommendations	29
6.3 Limitation of the study	30
LIST OF REFERENCE	a

List of Tables

Table 1 below illustrates: Risk factors for breast cancer believes regarding causes and breast examination practice and symptoms of breast cancer	9
Table 2 Number of selected households location and the sampled households.....	14
Table 3 Respondent Demographic data	18
Table 4 Presents the percentage of Knowledge about breast cancer risk factors.....	19
Table 5 Respondents knowledge score on breast cancer risk factors.....	19
Table 6 Respondents knowledge on influence of breast cancer screening practices	Error!
Bookmark not defined.	
Table 7 Relationships between education level and being thought to conduct breast self-examination Chi-square test.....	Error! Bookmark not defined.
Table 8 Relationships between age categories and Breast Self-examination practices.....	21
Table 9 Ability for breast-self-examination among respondent.....	21
Table 10 Respondents Breast ultrasound scan and clinical Breast examination Practices.....	22
Table 11 Relationship between health facilities influence and breast screening examination ..	Error!
Bookmark not defined.	
Table 12 Socio-economic and culture factors to breast cancer screening practices.....	25

List of Figures

Figure 1. THE HEALTH BELIEVE MODEL..... 10

Figure 2. Conceptual Framework..... 11

Figure 3. Plan to undertake clinical breast cancer examination and breast ultrasound scan22

Figure 4. Respondents of being heard of breast cancer screening23

Figure 5. Respondents Source of information about breast cancer and screening..... 24

List of Appendices

Appendix 1 Consent form in Englishd

Appendix 2 Women consent form e

Appendix 3 QUETIONNAIRE ENGLISH VARSION..... f

Appendix 4 Consent form /Kinyarwanda vasion..... j

Appendix 5 Questionnaire Kinyarwanda Varsionk

Appendix 6 Approval letter for data collectionm

Appendix 7 Ethical Clearancen

Appendix 8 Map of Kayonza District..... o

CHAPTER ONE

1.0 Introduction

This chapter comprises of general overview of the study background, problem statement, objectives of the study, Research questions, research significance and the scope of the study.

1.1 Background to the study

Breast cancer is type of cancer which is proliferation of malignant cells that arises in the breast tissues and diseases arises entirely in female, but men can develop it, too (Susan *et al*, 2016). The lump is cancer if the cell develops in neighboring tissues and metastases to distant parts of the body. This types of cancer develops in different portions of breast, most breast cancers arises in the duct that conduct milk to the nipple (American Cancer Society, 2012).

Worldwide, commonest cancer in female is breast cancer and the primary causes of cancer death for women which estimated to 23% of all women cancer (Preventive and Task, 2015) . In 2012 Globally, approximately 1.7 billion of females were diagnosed breast cancer and approximately 522.000 females deceased due to breast cancer (Opeyemi, 2014) . Death rates related to breast cancer have massively increased, overtime and it is documented to be the common types of cancer among female and classified as fifth primary source of death, as well as the commonest cancer in females globally (Ounoha and philip, 2014).

Breast cancers, initially deliberated as a disease of developed country, higher mortality are being reported in developing countries while the 5years survival rate in female with newly diagnosed breast cancer in the United States has extended to eighty-nine percent and it estimated that 40% of cure rate of breast cancer in developing countries are likely to be below (Miesfeldt *et al.*, 2014). Breast cancer is preventable and manageable with early diagnosis and treatment. Evidence suggested that breast self-examination is consistent screening tools when used as adjunct to clinical breast examination and mammography (Vieira *et al.*,2012).

In sub-Saharan Africa, estimated data that, ninety-four thousands of women diagnosed breast cancer and forty- eight among them deceased due to breast cancer. Approximations of standardized age prevalence rates per hundred thousand of women were thirty point four in Eastern Africa, twenty six in Central Africa, thirty eight point six in western Africa and thirty eight point nine in southern Africa (Figueroa *et al.*, 2014) . Breast cancer remains the leading cause of death among women in Africa. An estimated 882900 Cases in developing country were diagnosed, of which 324300 women died, the higher prevalence rate is noted in East , North and west Africa (Tfayli *et al.*, 2010). Breast cancer standardized of diagnosis in Africa was identified among young women , with approximates that most of breast cancer rises in females less than fifty age a suggestively young age than in Caucasian countries (Figueroa *et al.*, 2014). Early detection of changes in the

breast and prompt intervention results to good prognosis, decreased in morbidity and mortality related to breast cancer. The American Cancer Society provided strategies for primary detection of breast cancer through screening practices according to female ages (Donkor *et al.*, 2015).

In East Africa, GLOBOCAN estimated that breast cancer new cases were 19.9 % in female all ages and incidence rate per 100.000 in Kenya and Uganda were 52% and 34% respectively (Bray.F *et al* ,2018). In Rwanda a study done in Butaro Cancer Center of excellence revealed that 82% of women diagnosed with breast tumors, fifty-five percent diagnosed with breast cancer and thirty-six percent were diagnosed with benign tumors. Patient diagnosed with breast cancer , approximates 20% had one stage or two of breast cancer at diagnosis, forty six percent had locally progressive of breast cancer, and thirty one percent had metastatic breast cancer (Pace *et al*, 2016).

Late detection of women with breast cancer for treatment continues to be major challenges to reduction of the burden of disease in many low income countries, Rwanda inclusive. Women in the reproductive phase of their lives and should have the opportunity of having information and skills for preventive and management behaviors to women for early breast screening practices and prompt treatment of breast cancer. Little is documented to the point to which female are using breast cancer screening practices. The study intended to assess factors influencing breast cancer screening practices among women of reproductive age in South Kayonza.

1.2 Problem Statement

In Rwanda each year around 550 cases of breast cancer patients who seek treatment. Among them only 30% are seeking medication at an early stage while 70% remaining cases seek treatment when condition is in advanced stage (RBC, 2013). A study conducted in Butaro Cancer Center of Excellence revealed that women experienced median of delays fifteen months between the starting of breast warning sign and being receipt breast cancer diagnosis and treatment (Pace, Park and Shulman, 2018) .

Breast cancer is considered as the 2nd most common cancer among female in Rwanda, consist of 8.9 % of cancer cases (after cervical cancer) with most women with breast cancer diagnosed at the end stage of breast cancer (WHO, 2012). In south Kayonza, data from Health Management Information System report in 2016 estimated that annually eight to ten women were diagnosed with breast mass and most of them reporting in late stage where they present with signs and symptoms of breast cancer (Internal Annual Report, Rwinkwavu Hospital, 2016).

To meet these gaps this study was conducted to assess factors influencing breast cancer screening practices among women of reproductive age in south Kayonza as to provide evidence for comprehensive intervention.

1.3 The aim of the study

To assess factors influencing breast cancer screening practices among women of reproductive age in south Kayonza.

1.4. Research objectives

1. To determine influence of knowledge on breast screening practices among women in south Kayonza.
2. To assess sources of information as related to breast screening practices among women in south Kayonza.
3. To determine health facilities influences on breast screening practices of women in South Kayonza
4. To determine socioeconomic and culture factors that prevent women to performing breast screening in south Kayonza.

1.5 Research questions

This research intends to answer the following questions:

1. What are influences of knowledge on breast screening practices among women who live in south Kayonza?
2. What are the sources of information as related to breast screening practices among women in South Kayonza?
3. What are the influences of health facilities on breast screening practice of woman in South Kayonza?
4. What are socio-economic and cultural factors that prevent women from performing breast screening practices in south Kayonza?

1.6 Significance of study

This study will contribute in generation of knowledge; The study findings will provide readers the knowledge about factors influencing breast cancer screening practices among female. It is will be used in strategies and development projects to empower beneficiaries for sustainable use of breast cancer prevention and management strategies.

The study finding will be a baseline for further research and work will add to the existing knowledge on this subject matter and the related research may be carried out stemming from this particular one. To the future studies, the study will also help other researchers within the same field in identifying other areas of interest that this study may not cover. Also findings will provide clinicians, leaders,

policy makers, stakeholders and other health planners in Kayonza district with orientation on exact the influence of breast cancer screening practices among women in order to orient preventive and control strategies. It is important for principal investigator as it is required for partial fulfilment to get master's degree.

1.7 Definition of key term

1. **Screening practices:** Define as test and exam utilized to discover diseases, including such as cancer, in normal clients without any signs and symptoms
2. Defined as belief of utilizing a method that reads breast cancer easy to treat and diagnose in earlier before their occurrence.
3. **A Clinical breast exam (CBE):** Is an examination of entire physical breasts often used by health care providers.
4. **Breast self-examination (BSE):** Defines as breast cancer exam done by women every month in order to discover abnormalities in the breasts.
5. **Breast cancer:** is malignant growth that begin in the tissue of breast and it characterized by abnormal cell multiplying in an uncontrolled manner.
6. **Breast Screening:** Examination involving diagnostic technique or physical test to detect the presence of breast cancer.

1.8 Organization of study

This study is divided into parts. Introductory parts give background information with the nature of the problem statement, the study objectives to be achieved and the operational definition of the core variables in the study.

The second part presents the literature review using the objectives of the study as guides to theoretical and empirical review and the theoretical conceptual framework guiding the study. Chapter three covered the research methodology with a description of the research design and approach, population of reference, sampling technique and samples for the study, the instruments for data collection, ethical clearance process, data analysis, data management and dissemination. The fourth chapter presented the results of study and chapter five was the interpretation of results while chapter six were conclusions and recommendations.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter consist of significant and related literature review in comparison with the study, the information is gathered from different source such as book, reports and electronic sources.

2.1 The Burden of Breast Cancer

Globally, Breast cancer is the commonest non- communicable diseases of female, and its incidence is increasing commonly in low and middle nations (Kantelhardt and Sefonias, 2015). The burden of breast cancer in female are estimated by using death rates and financial expenditure, is considerable on the rise. It approximated that around 1 million are affected with breast cancer annually (Tfayli *et al.*,2010).

Formerly, Breast cancer is classified as diseases of developed countries due to high breast cancer survival rates which is estimated on 80% of breast cancer cases in Sweden, Japan and North America whereas 40% of breast cancer survival rate were in low income countries and 60% in high income countries (Tabrizi, 2015). Currently, breast cancer is the main cause of death among female with 198,000 mortality annually which represents 15,4% of all death among women in developed countries whereas in developing countries , it considered as the primary main cause of morbidity and mortality rates among women with 324,000 death which equivalent 15,4% of all death (Balekouzou *et al.*, 2016).

Annually, approximation of 1,7 million new cases of breast cancer are diagnosed. They were an estimate that 60% of mortality rates are caused by breast cancer most of them occurred in developing countries, whereas every year around 249,260 new cases of breast cancer are tested and conformed in the United State of America however in developing countries represents one half of all breast cancer and 62% of breast cancer mortality rates (Trupe *et al.*, 2017) .

The WHO Recently reported that breast cancer death was main reason of mortality 24,5% among Central Africa in 2012, the breast cancer in Asia and Africa were 27 per 100,000 women while Europe it was 96 per 100,000, and in sub-Saharan Africa death rates were twenty two per hundred thousand of female each year in 2011 (Balekouzou *et al.*, 2016). In Africa, data in 2012 estimated that 63,000 death occurred each year and 48,000 death of women were estimated in sub- Sahara Africa (Figueroa *et al.*, 2014).

In Rwanda breast cancer is ranked as 2nd most common cancer among female, consist of 9.6% of cancer causes after cervical cancer (Global Health, 2013). Risk reduction will be achieved through prevention when women are informed and engage in preventive screening practices like regular breast cancer clinical examination, mammography and breast self-examination. Better outcome,

reduce morbidity, better survival rate, and reduced mortality rates will be achieved when women engage in effective management of breast lesion among Rwanda women.

Women are strategic to early detection in order to improve breast cancer outcome and survival rate as the corner stone of breast cancer control and eliminates late diagnosis of breast cancer in Rwanda as they practice breast cancer screening in early stage of their productive lives.

2.2. The influence of knowledge on breast cancer screening practices

Breast cancer survival rates are low survival rates in developing states can be described primary by deficiency of knowledge, nonexistence of early detection schemes, deficiency breast cancer clinic and diagnostic modalities facilities, which causing high morbidity and mortality rates of females and presenting with advanced stage of breast cancer (WHO, 2014). Survival rates of cancer greatly differ all over the world, ranging less forty percent in developing countries, around sixty percent in middle income and eighty percent in developed countries. (Tabrizi, 2015).

In Africa breast cancer is leading cause of death in women and main community health challenges, most of developing countries cancer registries are deficiency and absent may however, the estimates from World Health Organization revealed that breast cancer incidence rate in Africa has progressively rises over decades (Donkor *et al.*, 2015).

It has reported that female aged twenty years and less must be educated the importance of doing early breast self-examination, and encourage all females to present early in health facilities and having breast cancer awareness also they must have basic health information about breast cancer symptoms, (Davis *et al.*, 2002), as cited by (WHO, 2011).

The study regarding knowledge about methods of breast cancer screening revealed that, 45.4% did not have any knowledge about breast self-examination, 75.8% never used self-examination practice, whereas 70.7% of participants were practicing it were doing it once per month and only 29.3% were doing breast self-examination only in the presence of complain (El-nasr, 2017). The study estimated that there is deficiency of breast cancer knowledge and poorer survival rate among breast cancer patient in most African countries. Survival rate of breast cancer are still low in Gambia 12.5%, and 12 and 12.5% in Gambia (Donkor *et al.*, 2015).

In Africa Breast cancer prevalence remain highest with an estimate of 882900 case in developing countries and it estimated that 324300 females deceased. The incidence rate is high in East, West and North African countries (Nambile *et al.*, 2017). Early detection of current results in successful of diagnosis and treatment before metastasis and signifies a better outcome and preventive measures to decrease the burden of disease, by using breast self-examination which is cheap tool that can be used by women themselves in daily activities, diagnostic mammography to detect breast lesion, clinical breast examination of bilateral breasts, axillae, supraclavicular and infraclavicular areas (WHO, 2014).

It is necessary to take further action focusing not only on informing women about the possibility of taking part in examination but also increase knowledge of females about disease prevention behavior also, a further perspective, changing women's way of thinking of the issues (Sielska *et al.*, 2015). Knowledge and early detection are very important to women in order to enhance early breast screening practices which will decrease incidence and prevalence rate of breast cancer and increases survival rate.

2.3 Socio-economic and cultural factors influencing breast cancer screening practices

According to America cancer society, lack of health insurance, less education and poverty are most leading causes of breast cancer low survival. The five years survival rate of breast cancer are low in developing countries compared to the high income at each diagnostic stage due to the different awareness, economic status, health facilities and diagnostic modalities (Cumber *et al.*, 2016). Low economic status, deficiency of knowledge, inadequate health facilities, shortage staff and shortage of community health workers are associated factors of low survival rate in sub Saharan Africa (Nambile *et al.*, 2017).

In Africa breast cancer are characterized with expensive cost of screening, deficiency information about breast incidence, cancer of high cost of screening, inadequate information about breast cancer incidence, and long distance to health facilities are main cause for the screening purpose (Cumber *et al.*, 2016). Low breast screening practice knowledge, religious and culture beliefs, Challenging health needs and low socioeconomic position are associated with low poor health seeking behaviors in Africa (Kohler *et al.*, 2017). A study done in Cameroon revealed that thirteen percent of female agreed that vaccination can prevent breast cancer whereas 38% of respondents are familiar to the effectiveness of breast health education as an important component to prevent breast cancer (Figueroa *et al.*, 2014).

In eastern Africa breast cancer active management is delayed by females due to primarily consulted with tradition healers and receiving traditional medicine. Breast cancer is considered as a diseases of the spirit, and female frequently, uses conventional care when herbal medicine has unexpected result of anticipated effect (Balekouzou *et al.*, 2016).

In West Africa, cultural and religious belief system of the of females is a leading cause of ineffective control, prevention and management of breast cancer. In addition, several females exhibited deficiency of knowledge about breast cancer screening, and considered breast cancer as a condition caused by the will of God (Nambile *et al.*, 2017).

2.4. Breast self-examinations and screening practices

The American Cancer Society (ACS) recommended some diagnostic tests for breast cancer and are scheduled for women by age categories: A female aged forty to forty-four could start each year breast cancer examination with mammograms whereas females aged 45-54 must be screened with mammograms annually and female aged 55 and above mammograms should be screened every 2 years and all females must be educated and be aware with known limitations, benefits and potential harms associated to breast cancer diseases. (Cammie *et al.*, 2014).

The importance of daily breast examination done by health providers (clinical breast examinations) or by clients herself (breast self-exams). The evidence has been shown a little evidence that these screening help find breast cancer early in early stage motivates female also to attend mammograms screening. Mostly the signs and symptoms are often detected during daily activities such as dressing and giving a bath (American Cancer Society, 2017).

A study done in university of Buea in Cameroon revealed that nine percent knew how to perform whereas 13.9 % respondents know what to look for while only 3% of respondents performed breast self-examination regularly basis. Moreover, lack of knowledge, socioeconomic and culture perspective was mentioned as the leading causes which prevent breast screening practices among female students (Birhane *et al.*, 2017).

The study done in South Africa on breast cancer knowledge revealed that 53,1% of respondents agreed that breast lesion as crucial symptoms, 97% of respondents identified that breast self-examination and early consultation were seen as profit and will help to detect breast changes only 33.3 of respondents started to perform breast self-examination and 24.3% were screened by using a clinical breast examination (Trupe *et al.*, 2017).

2.5 Breast cancer risk factors in Risk factors

A number of factors are frequently linked with an increased risk of breast cancer among those risk factors some are unmodifiable such as sex more than 99% of breast cancer occur in women, risk factors increased with age which is most common risk factors, personal history of breast cancer, family history of breast cancer, inherited genetic mutation account five to ten percent all breast cancer, being null parity and menarche before twelve or menopause after age fifty five and dense breast tissues on mammography (American Cancer Society, 2017).

Breast cancer risk factors should be modifiable such as use of oral contraceptive before 20 years, hormone replacement therapy, overweight and obese the higher incidence of breast cancer, cigarettes smoking, use of alcohol, risk specific to man includes radiation exposure, obesity, testicular disorder and klinefelter syndrome (Nambile *et al.*, 2017).

Table 1 below illustrates: Risk factors for breast cancer beliefs regarding causes and breast examination practice and symptoms of breast cancer

Knowledge on breast cancer risks factors	Beliefs on cause of breast cancer	Breast examination practices	Symptoms of breast cancer
<p>Modifiable risk factors:</p> <p>Cigarettes smoking</p> <p>Use of alcohol</p> <p>Overweight and obese</p> <p>Oral Contraceptive use</p> <p>Physical inactivity</p> <p>Diet</p> <p>Unmodifiable risk factors:</p> <p>Sex: Being women</p> <p>Risk increases with age</p> <p>Family history</p> <p>Personal history</p> <p>Inherited genetic mutation</p> <p>Hormonal factors:</p> <p>Menarche before 12 years</p> <p>Menopausal after 55 years</p>	<p>Placing money under breast</p> <p>Enemy revenge</p> <p>Disease of spirit</p> <p>Rubbing of breast</p> <p>Child bites during breast feeding</p> <p>Big breast</p> <p>Breast which is Small</p> <p>Extensive breast feeding</p>	<ul style="list-style-type: none"> • Heard of it do not practice • Practice occasional • No family history • Never perceived it • Exercised once a month • First time to hear it • Not ever recognized and had exams • Recognized and practiced it. 	<ul style="list-style-type: none"> • A firm, possible immobile lump • Uncommon pain in early stage • Breast change of size, shape and swelling • Nipple discharges • Presence of lymph nodes • Skin changes of breast • Back pain • Thickening

Source (Nambile *et al.*, 2017)

2.6 Barriers to breast cancer screening practices

Delays in diagnosis and treatment of breast cancer in low-income county are related to ineffective health care system, lack health facilities, deficiency cancer specialist and lack of diagnostic facilities this leads to a barrier of early consultation and increases mortality and morbidity rate of breast cancer (Miesfeldt *et al.*, 2014).

In Africa , most common barriers of breast early detection are awareness due to deficiency health literacy , deficiency political will , lack diagnostic plans , insufficient funds to breast screening programs , social barrier to early consultation, treatments , low priority for female in breast health related issues (Tfayli *et al.*, 2010) .

The study argues that deficiency knowledge of breast cancer tends to impact breast examination which linked with late detection and treatment in several women. Again anxiety of diagnosis, deficiency of health care quality services, embarrassment, poor breast health education has been cited

as obstacles to early consultation of the disease in African American women. Breast cancer not only affect the women' health but also their family, children, community and the county at large (Akuoko *et al.*, 2017).

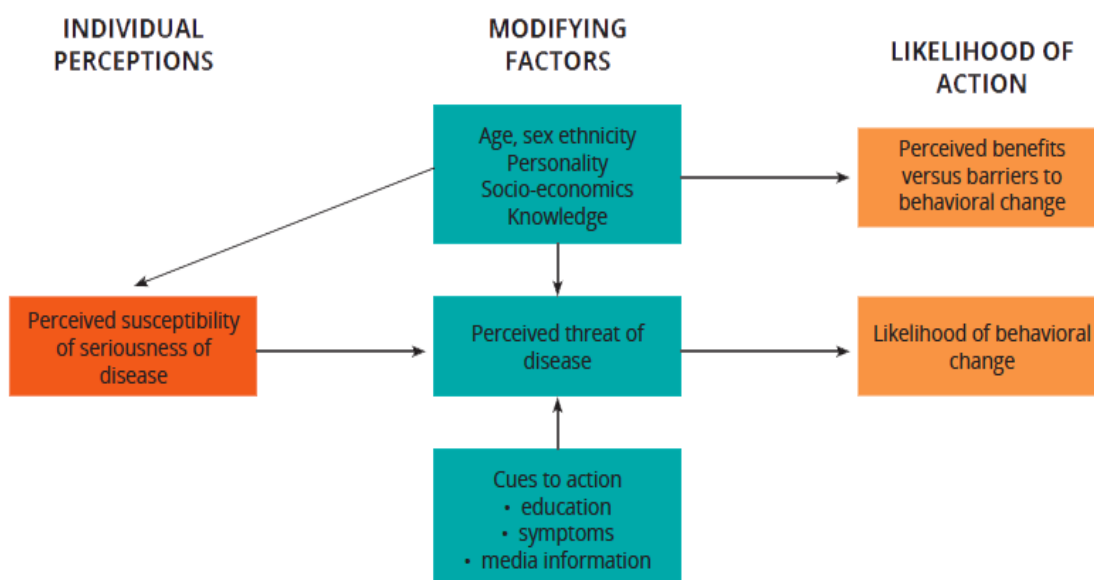
In Africa high mortality and morbidity from breast cancer could be attributed to poverty because health care is not free and as results, there is a delay of attending to hospitals timely, the limited health literacy of female who lack basic health literacy information may have difficulties to obtain processes, and understanding breast cancer related skills. Health illiterates of female mostly may not recognize the symptoms of breast cancer or possessing basic information to choose adequate breast cancer diagnostic and prevention decisions (El-nasr, 2017).

The barriers to breast cancer should be decreased due to effectiveness of early consultation of breast cancer which can play significant role in reducing incidence, and burden, mortality, morbidity of breast cancer when the cases are diagnosed and treated before. Barrier to constant self- examination, clinical examination and mammograms, breast self-examinations and clinical examination nevertheless do not avoid breast cancer, but these diagnostic modalities facilitates its early consultation; when treatment is most expected to be operative (Angahar L.T, 2017). Preverence and low survival rate of breast cancer are attributed to deficiency documentation of cancer cases , lack of awerenes of breast cancer ,most breast cancer are commonly diagnosed at end stage during consultations (Nambile *et al.*, 2017).

2.7 Theoretical and conceptual framework

The Health Believe Model (Barnyard, 2002), formed the theoretical basis for this study

Figure 1 THE HEALTH BELIEVE MODEL



(Barnyard, 2002)

Figure 2.1: Chart explaining the association among the figures of the Health Belief Model.

The chart in fig 1.1 above summarizes the constructs of health belief model.

The model anticipated that female worried about disease and health activities of female are encouraged with the way they perceived the threat and anticipated anxiety reduction action as long as that potential reduction is more than psychology and physical obstacles to make decision these will lead to engage in health action. This study was defined by using the 4 constructs of health belief model;

Perceived susceptibility

This will be awareness of women at risk to have breast cancer, these will encourage them to perform breast cancer screening. when the women are aware of being at risk of having breast cancer, they will be a baseline for women to practice early breast cancer screening when any breast abnormalities are noted.

Perceived severity

This is the women believe on how seriousness they can pretend to develop fatal breast cancer. Consequently, they can change their perception and practice breast cancer screening due to the way on how they deliberate the significance of having fatal breast cancer

Perceived benefit

This is the women believes on how they consider efficiency of early breast consultation as measures to reduce the high effect of late breast cancer. Consequently, breast cancer screening will be practiced when assured that early consultation would be achievable and useful.

Perceived barrier

Is defines as the women believes of tangible and mentally cost of practicing breast screening contrast to not performing it. Those barriers involved psychosocial, socioeconomic, education background, culture that will impede breast the late of low breast cancer screening practices.

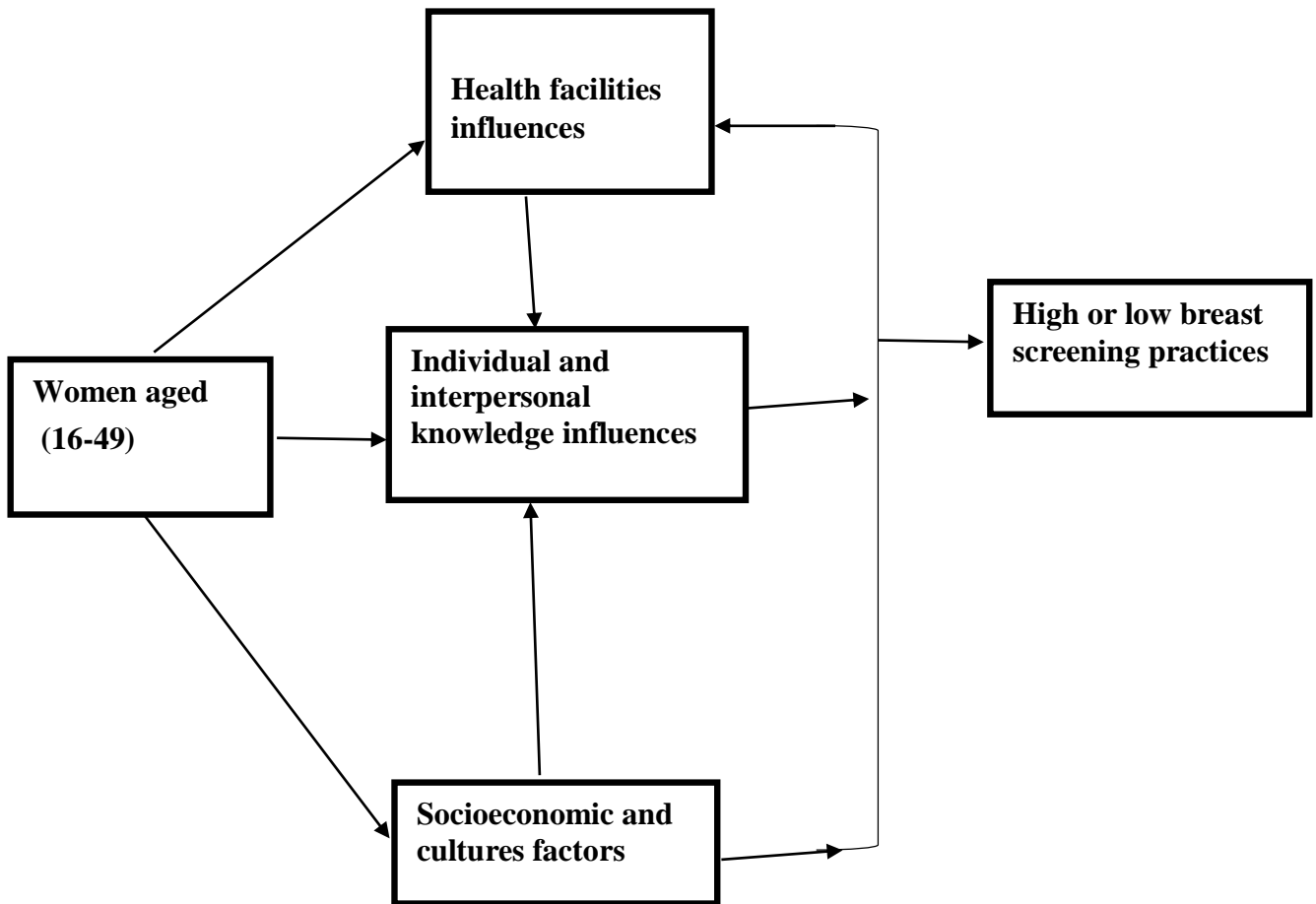
Cues to action

This is conscience of women should have inner motivation to early practice of breast screening in order to decrease the chance of having breast cancer, other externally factors like media advertisements, awareness health promotion, and pictures would prompt the women to practice screening for breast cancer. These cues action should will improve perception of breast cancer screening practices.

Figure 2 Conceptual Framework

The conceptual framework below will be used to operationalize the health belief model in the study to investigate the factors influencing breast cancer screening practices among women.

Figure 2. 3: Framework of influence of breast cancer screening practices among women



(Modified from Barnyard, 2002)

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter defines the research methodology, which include the research design, settings, population, process of sample and sampling strategy, sample size, fieldwork preparation, data collection tools, data analysis, ethical, data management, data dissemination and limitation and challenges.

3.2 Research design

This study used a multiple cross sectional survey research design and quantitative approach. The design was preferred to obtain diverse information about the women's practices to breast cancer screening using administered questionnaire. In this study, information about influences breast cancer screening practices among women was sougheed out. The data were processed to provide descriptive information.

3.3 Research settings

The study was done in catchment area of Rwinkwavu district hospital, southern part of Kayonza district, located in eastern province of Rwanda, populated by 211,251 people. The economy of Kayonza district is mostly grounded on agriculture and the local livestock is dominated by banana (29%), maize (16%), beans (24 %), cassava (12%) and vegetables (4%), while main livestock being cattle raising (NISR, 2012).

However, local produced food, the population have geographical access to food bought from other parts of Rwanda through road transport where they are sold in different markets and trade stores. (NISR, 2012). Population are receiving health care service in fourteen Health Centers, eight health post with community health workers providing curative and health promotional services in villages (NISR, 2012).

3.4 Study Population

The study population consisted of 246 women who is residing in Rwinkwavu Hospital catchment area which is southern part of Kayonza District. The population in district has an estimate of 26,392 of women aged 16-49 years (NISR, 2012).

3.5 Sampling and sampling strategy

A representative sample of 246 women were chosen from four health Centers with convenience sample technique (CI=95%).

The sampling frame was the women aged 16-49 year, out patients' women who was attended the health centers during data collection was participated in the study.

Calculation of sample size was used the formulae from Fisher's *et al.* (1998).

$$n = Z_{1-\frac{\alpha}{2}}^2 \frac{p(1-p)}{d^2}$$

Where; n = the desired sample size

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

P = Estimated prevalence of mother in Rwinkwavu catchment area 20 %

d = Precision of errors is 5%

$$n = \frac{1.96^2 \times 0.2 \times 0.8}{0.05^2} = 246$$

3.5.1 Sub-sample calculation

Simple size of 246 women were chosen from four strata, to get sub-sample size the following formulae was used to calculate sample size in each stratum

Sub-sample size formula: $nk = (nl \times NK): N$

nl: is the simple size , **nk:** stratum population ,**N:** The study population

3.5.1 Sampling Procedure

3.5.2 Locations and Households

Households were sampled using convenience sampling technique from each of the 4 locations proportionate to the number of households in the location for inclusion, until the desired sample size was attained.

Table 2 Number of selected households location and the sampled households

Serial Number	Facility	Households per location	Sampled Households
1.	Rwinkwavu Health center	6955	65
2.	Nyamirama Health Center	7484	70
3.	Ruramira Health Center hc	4185	39
4.	Kabarondo Health Center	7768	72
	Total	26392	246

Table 2.0 above represents the households selected and the sampled households per locations

3.6 Inclusion and exclusion criteria

The sample collected to the women with reproductive age from 16 to 49 years old and who were attending public health centers during the time of the data collection and who volunteered to contribute in the research study were used. Those women who were seriously ill or had problems of communication (who had problems of hearing or speaking) were excluded to this study.

3.7 Data Collection instruments

The instruments of data collection adapted by researcher after being reviewed with a team of expert. As it was used previously with other researchers in Nigeria and Kenya and it was adopted in Rwandan context. A detailed self-administered questionnaire used in this study, the data instrument tool was comprised of close - ended and Likert types of questions that was anticipated to meet with objectives of research. Consideration was made for how information obtained, analyzed from each items in logical sequence and concise. Data collection tool was designed in English and translated in local language.

3.8 Reliability and Validity

The assessment of instrument tool reliability was done by using a pilot test involving twenty-five Respondents from four health centers. The pilot test data attain and analyzed by using Statistical package for social sciences version 21.0 to control the reliability coefficient of 0.8. The questionnaires were distributed and participants were invited to give ideas about the guidance, and precision of questionnaire. The reactions of participant were used to develop significance and consistency of data collection instrument tool.

The face and content reliability of research instruments tool for this study was tested and researcher was consulted experts in the field of oncology nursing. This was done to make sure if the research instrument tool measure what they were expected to measure by analyzing each point of the questionnaires and observation on the whole data instrument tool to the extent it was appropriate or not appropriate. Thus, those facilitated the researcher to reduce bias in the progress of the study.

3.9 Data collection procedure

Data collection was done in two months after Institution Review Board approval CMHS/IRB/037/2019 to conduct research and permission of collecting data from Director of Rwinkwavu. The researcher chosen one assistant registered nurses in each Health facilities, and researcher provided training on how research instrument tool was operated.

Researcher and those research assistants (registered nurse) was gone on field to meet with participant. They met with heads of health facilities and presented approvals to collect data. They clarified the objective and process of research to targeted respondents, and get signed informed consent from

them. After explaining the purpose of research and rights of participants, the assistant first was requesting the participants to sign informed consent forms one by one.

Then the assistant administered the questionnaires and assistant submitted filled questionnaires and signed informed consent forms to the researcher. Data was corrected during the period of data collection.

3.10. Data analysis

The collected data was transformed into meaningful information for easy interpretation and understanding. The data from research instrument tool grouped, organized, revised, ordered and retained into coding sheet and analyzed using Microsoft Excel. The entry and analysis was done using Microsoft excel and SPSS version 21.0 commonly through chart, tables and graphs.

To determine knowledge of respondents concerning breast risk factors, influence screening practice and screening methods, several question was asked for correct responses a score of “one” was given whereas “zero” score awarded to wrong responses.

The median score was calculated for knowledge; the score great than median or equal to median was defined high score and considered as having ‘good knowledge’ and divided in two group those who were in greater than eight percent considered as “good knowledge” whereas score less than eighty percent were considered as “moderate knowledge” and score less than mean score are “poor knowledge” (Balouchi, 2016).

The inferential statistic (chi square) was used to examine relationships between dependents (breast screening practices and independent variables (health facilities influence, women’s knowledge influence, women’s source of information and social economic and culture to breast cancer screening practice.

3.11 Data management

The collected data tools were handled to the researcher, the data were recorded into software and retained by researcher in protected way locked with password which known by researcher in order to prevent further access. The questionnaires were kept in locked container in order to prevent disclosure information of participant.

3.12 Ethical consideration

Authorization to conduct research was gotten from Institution Review Board (IRB) of University of Rwanda, College of Medicine and health sciences. Authorization to collect data were obtained from Director General of Rwinkwavu District Hospital.

A signed informed consent form to show women’s agreement to participate in the study was gotten after explaining the purposes and objectives of the research women and research data collection tool handled to them in order complete it accordingly.

The women were explained about their right to withdraw and participate to the study. Privacy was provided during data collection, no identification of women was written on data collection tools, data was used for academic propose.

3.13 Problem and Limitation of study

The problem and limitation was to get remuneration of research assistant, transport issues during data collection, the study were not funded and there was no standardized questionnaire found on factors influencing breast cancer screening practices.

Reluctance and uncooperativeness of the respondents, who felt that they might be disturbed. To restrict those matters, I explained to participants that this academic research intends to impact the future awareness and breast cancer screening practices.

3.14 Data dissemination

Data dissemination will be done by using different method, presentation in different conferences, general staff meeting, organized training, publication and organized community outreach.

CHAPTER FOUR: PRESENTATION OF RESULTS

4.0 Introduction

The chapter four outlines the results the study. A whole 246 of women were contributed in this study, their demographic characteristics, influence of knowledge, health facilities influence and socioeconomic and culture factors on breast cancer screening practices. The purpose of this study was to assess factors influencing breast cancer screening practices.

Table 4.1 Respondent socio-demographic characteristics data

<i>Women's age categories</i>	<i>Frequency (n=246)</i>	<i>Percent (%)</i>
16-19	70	28.5
20-29	76	30.9
30-39	81	32.9
40-49	19	7.7
Education level		
No basic education	35	14.2
Primary	152	61.8
Secondary	50	20.3
University level	9	3.7
Marital status		
Single	58	23.6
Married	153	62.2
separated	18	7.3
Widowed	17	6.9
Ubudehe (social categories)		
Category 1	26	10.6
Category 2	82	33.3
Category3	138	56.1
Category 4	0	0
Health Insurance		
Others	7	2.8
CHBI	191	77.6
RAMA	28	11.4
MMI	8	3.3
UAP	3	1.2
NONE	9	3.7

Table 4.1 shows that the highest percentage of respondents 32.9% of women was in the age bracket 30-39 years women where least percentage 7.7 % were in 40-49 years. Whereas 61.8% of women surveyed were attended only primary education. The mothers attended secondary, university education and no basic education were 20.3%, 3.7% and 14, 2 % respectively. However, 56.1% of women surveyed were in three categories of ubudehe (social categories). Those were categorized in category 2 and 1 category were 33.3 % and 10 % respectively. In addition, 77.6 % of women were

used community health based insurance, while 2.8% the least number of women used other insurances.

Table 3.2 Percentage and frequency of knowledge on breast cancer risk factors

<i>Knowledge about breast cancer risk factors N</i>	<i>Strongly Disagree n (%)</i>	<i>Disagree n (%)</i>	<i>Neutral n (%)</i>	<i>Agree n (%)</i>	<i>strongly Agree n (%)</i>
1.Physical inactivity	30(12.2)	46 (18.7)	52(21.1)	106(43.1)	12 (4.9)
2.use of alcohol	8 (3.3)	34 (13.8)	35(14.2)	133(54.1)	36(14.6)
3.Breast feeding	9(3.7)	57(23.2)	31(12.6)	112(45.5)	37(15.0)
4.Witchcraft	8.1(20)	66 (26.8)	45(18.3)	85(34.6)	30(12.2)
5.Smoking	13(5.3)	46 (18.7)	21(8.5)	119(48.4)	47(19.1)
6.Breast cancer are inherited	23(9.3)	57(23.2)	38(15.4)	98(39.8)	30(12.2)
7.Injury of breast	17(6.9)	50(20.3)	30(12.2)	109(44.3)	40(16.3)
8.Early onset of menstruation	30(12.2)	77(31.3)	29(11.8)	77(31.3)	33(13.4)
Total	7.6	22.0	14.3	42.6	13.5

Table 4.2 shows that 56.1% of respondents surveyed were knowledgeable about breast cancer risk factors (N=246). Those who are not knowledgeable about breast cancer risk factors were 43.9% of respondents. No statistical significantly found with sociodemographic

4.3 Respondents knowledge on influence of breast cancer

<i>VARIABLES</i>	<i>Strongly Disagree n (%)</i>	<i>Disagree n (%)</i>	<i>Neutral n (%)</i>	<i>Agree n (%)</i>	<i>strongly Agree n (%)</i>
1. Having breast pain	20(8.1)	43(17.5)	9(3.7)	136(55.3)	38(15.4)
2. Family history	39(15.9)	74(30.1)	14(5.7)	84(34.1)	35(14.2)
3. Breast mass	20(8.1)	45(18.3)	7(2.8)	130(52.8)	44(17.9)
4.Abnormal discharges	19(7.7)	35(14.2)	9(3.7)	136(55.3)	47(19.1)
5. Importance and value	24(9.8)	62(25.2)	14(5.7)	96(39.0)	50(20.3)
6.Failure of herbal medicine	30(12.2)	103(41.9)	15(6.1)	73(29.7)	25(10.2)
Total	10.3	24.5	4.6	44.4	16.2

Table 4.3 shows that 74,4% of respondents surveyed were agreed that abnormal discharges should influence them to undertake CBE or ultrasound scan and 70.7% of respondents agreed that breast

mass and pain should influence them. Only 39.9% of respondents influenced with failure of herbal medicine.

Figure 4.1: Respondents knowledge mean score on influence and risk factors

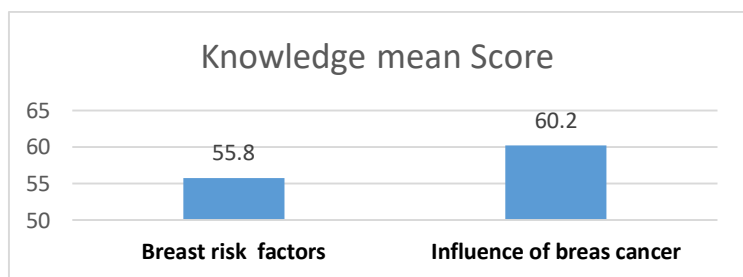


Figure 4.1 show knowledge of respondents concerning breast risk factors, influence screening practice and screening methods, several question was asked for correct responses a score of “one” was given whereas “zero” score awarded to wrong responses. If knowledge mean score is above 80% there is a good knowledge, score knowledge 50% to 80%, there is moderate knowledge, if less is poor knowledge. Among all respondents 55% had moderate knowledge of about breast cancer risk factors whereas only 60.2% of respondents had also moderate knowledge on influence of breast cancer screening.

4.4.0 Knowledge on breast cancer screening methods

Table 4.4.1 Relationships between education level and being thought to conduct BSE

VARIABLES	Being taught to conduct self-breast examination		Total	Pearson Chi-Square			
	Yes	Not		χ^2	df	P-value	
Women's Education level	No basic education	2	33	22.457	3	0.000	
		.8%	13.4%				14.2%
	Primary	21	131				152
		8.5%	53.3%				61.8%
Secondary	20	30	50				
	8.1%	12.2%	20.3%				
University level	3	6	9				
	1.2%	2.4%	3.7%				
Total	46	200	246				

The *table 4.4.1* above shows that $\chi^2 = 22.457$; $P = 0.000$ which is less than 0.05. This means that the relationship between education level of respondents and being thought to conduct BSE is statistically significant

Table 4.5 Relationships between age categories and Breast Self-examination practices

<i>Variables</i>	<i>Breast Self-examination practices</i>					<i>Pearson Chi-Square</i>		
	Once a year	Once a months	Once a week	Never	Total	χ^2	df	P-value
Women age categories	n (%)	n (%)	n(%)	n(%)	n (%)			
16-19	15(6.1)	4 (1.6)	3(1.2)	48(19.5)	20 (28)			
20-29	16(6.5)	5 (2.0)	3(1.2)	52(21.1)	76(30.9)	15.175	9	0.020
30-40	12(4.9)	2(0.8)	9(3.7)	58(23,6)	81(32.6)			
40-49	0 %	0%	0%	19(7.7)	19 (7.7)			
Total	43 (17.5)	11(4.5)	15 (6,1)	177 (72,0)	246(100)			

According to data provided in *table 4.5*, within the last two years, 177 respondents had never practiced BSE, representing 72% of the total respondents, whereas 17.5 % of the total number of respondents had BSE in once a year. However, it was 6.1% of the 15 respondents that had undertaken the examination once a week and, 6.1 % were performed breast self-examination once month. There is statistical significance between age and breast self-examination ($\chi^2 = 15$, $p = < 0.020$),

Table 4.6 Ability for breast-self-examination among respondent

<i>Ability of breast self - examination</i>	<i>Frequency (n= 246)</i>	<i>Percent (%)</i>
Extremely confident	20	8.1
Confident	43	17.5
Not confident	99	40.2
Extremely not confident	84	34.1

Table 4.6 shows that 40.2 % of respondents surveyed were not confident in breast self-examination. While 34.1% of respondents were extremely not confident and 17.5 % of respondents were confident about breast self examination. Only 8.1% of respondent were extremely confident.

Table 4.7 Respondents Breast ultrasound scan and clinical Breast Examination Practices

CBE and breast ultrasound scan	Frequency (n)	Percent (%)
Once in more than year	20	8,1
Once a year	16	6,5
Never	200	81,3
Not sure	10	4,1
Total	246	100,0

Table 4.7 shows that 81.3% of respondents surveyed were not used clinical breast examination or breast ultrasound scan and 6.5% were used clinical breast examination once more than year. Those whose respondents use clinical breast examination or ultrasound once in more than year and once year were 8.1% and 4, 1 % respectively.

Figure 4.2 Respondents General knowledge mean score

To determine knowledge of respondents concerning breast risk factors, influence screening practice and screening methods, several question was asked for correct responses a score of “one” was given whereas “zero” score awarded to wrong responses. The mean score was calculated for knowledge; the score great than mean or equal to median was defined high score and considered as hiving ‘good knowledge ‘and divided in three group those who were in greater than 80% considered as “good knowledge” whereas score less than 80% were considered as “moderate knowledge” and score less than mean score are “poor knowledge” .

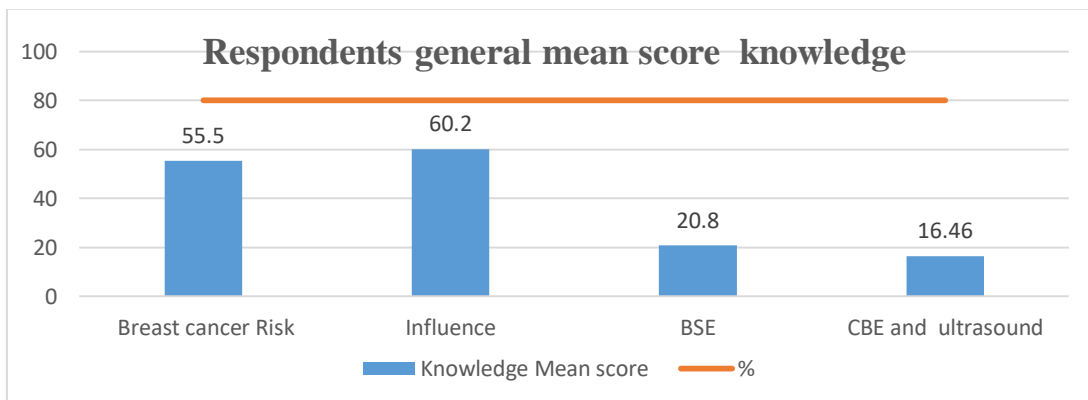


Figure 4.2 had moderate knowledge on influence of breast cancer screening and knowledge was poor to BSE, CBE represents 55% of respondents was having moderate knowledge on risk factors of breast, also 60.2% of respondents and ultrasound scan which were 20.8%,16.46% respectively.

Figure 4.3. Plan to undertake clinical breast cancer examination and breast ultrasound scan

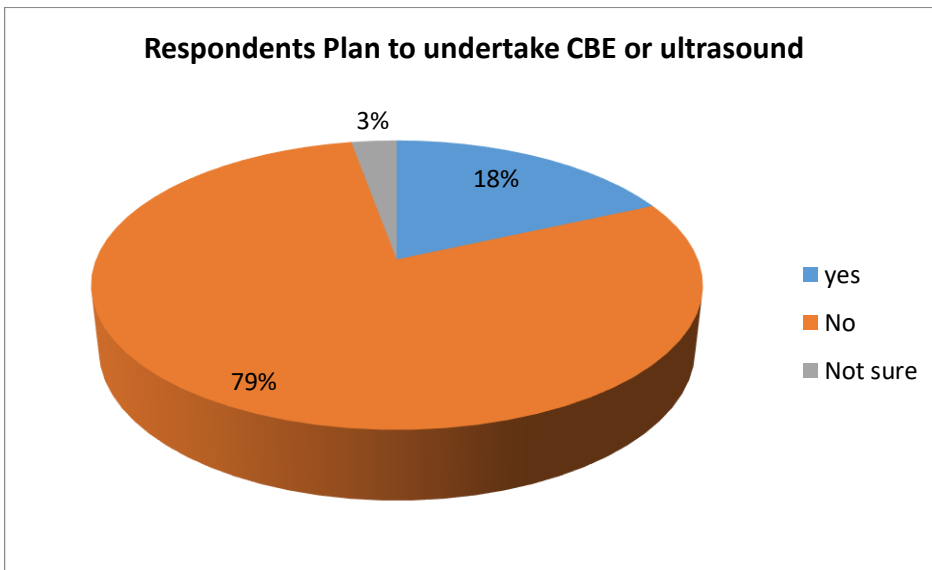


Figure 4.3 presents the percentage of respondents whose plan to undertake clinical breast examinations or ultrasound where 79% has no plan to undertake CBE or breast ultrasound scan while 8% of respondents has plan to undertake clinical breast examination and only 3% of respondents are not sure to undertake CBE or breast ultrasound scan.

Figure 3.4 Respondents of being heard of breast cancer screening

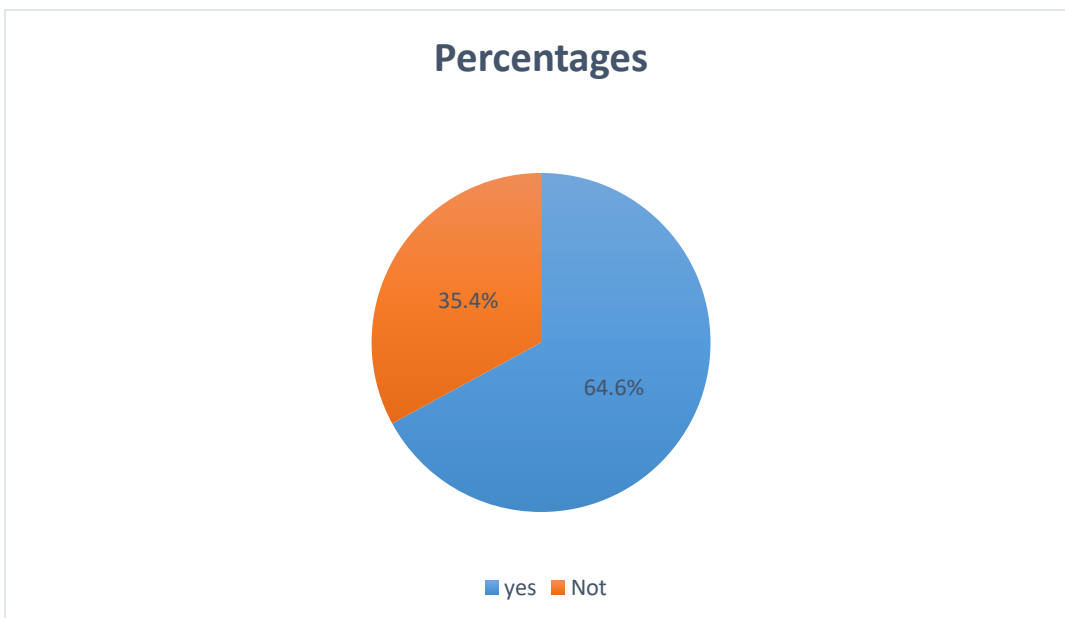


Figure 4.4 shows that 64.6 % of women surveyed were confirmed they have heard about breast cancer screening (N=246). Those confirmed they were never heard breast cancer screening were 35.4% of respondents.

Figure 4.5 Respondents Source of information about breast cancer and screening

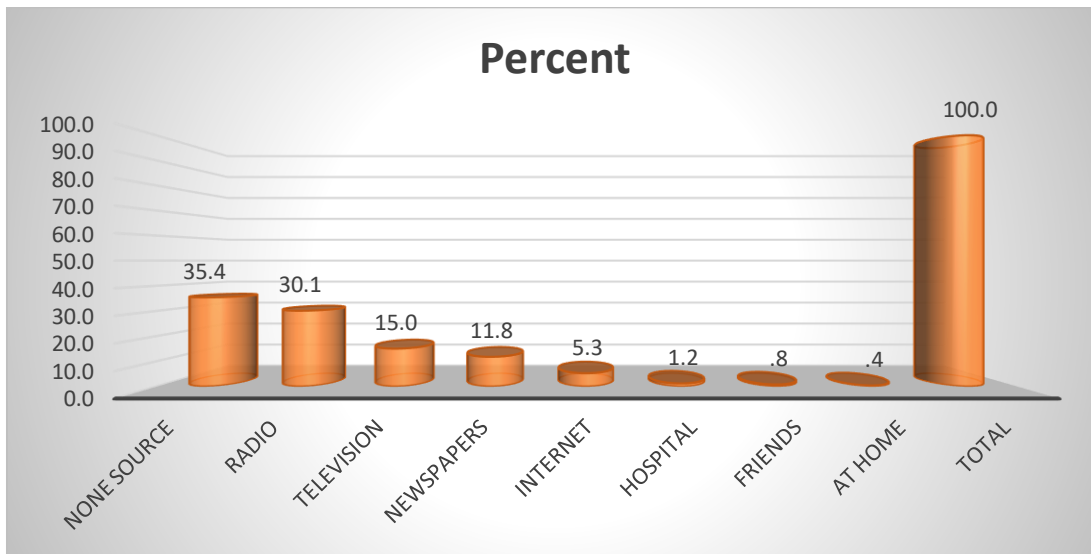


Figure 4.5 shows that most of the respondents obtained information on cancer and screening through the radio. Among the respondents informed about breast cancer and screening 30.4% of the respondents obtained information about breast cancer and screening through the radio, whereas 35,4 % of the respondents has no source of information about breast cancer and screening.

Table 4.8 Relationship between health facilities influence and breast screening examination

VARIABLE	BREAST SELF-EXAMINATION				
	N (%)	Total (%)	χ^2 value	df	P - value
Breast Health Education at NCDs clinic or maternity					
Provided	92 (37.4%)				
Not provided	154 (62.6%)	246 (100 %)	34.748 ^a	12	0.001
Provision of visual aids at NCDs clinic or maternity					
Provided	90 (36.6)	246 (100%)	45.597 ^a	12	0.000
Not provided	156 (63.4%)				
Doctor and nurses advices about breast screening					
Provided	48 (19.5%)	246(100%)	6.521 ^a	12	0.008
Not provided	198(80.5%)				

Table 4.8 shows that Breast health education at NCDs or maternity has statistical significant with breast screening practices ($\chi^2= 34.748$; $P= 0.001$), and 62.6% of the women who did not performed BSF had been provided with breast health education at the health facilities. About 63.4% of the women who did not carried out BSE had never seen visual aids on breast cancer screening ($\chi^2= 45.597$, $P=0.000$). However, Advice on breast cancer screening has a statistical significant with the practices of breast self-examinations ($\chi^2= 45.597$, $P= 0.008$), and 80% of respondents has not received advice for breast self-examination.

Table 4.9 Percentage and frequency of socio-economic and culture factors to breast cancer screening practices (N=246)

<i>VARIABLES</i>	<i>Disagree strongly n (%)</i>	<i>Disagree n (%)</i>	<i>Neutral n (%)</i>	<i>Agree n(%)</i>	<i>Agree strongly n (%)</i>
1. Culture practice	58 (23.6)	133 (54.1)	26(10.6)	28(11.4)	1(0.4)
2. Religious practice	56 (22.8)	125 (50.8)	21(8.5)	48 (15.4)	6(2.4)
3. Social Stigma	39(22.8)	96(39)	25(10.2)	78(31.7)	8(3.3)
4. Lak of knowledge	16(6.5)	96(39.0)	13(5.3)	105(42.7)	16(6.5)
5. Long distance	15(6.1)	93(37.0)	20(8.1)	93(37.8)	27(11.0)
6. Lack of breast cancer clinic	11(4.5)	42(17.1)	16(6.5)	138(56.1)	(39)15.9
7. Cost of screening	33(13.4)	120(48.8)	44(17.9)	37(15.0)	12(4.9)
8. Fear of findings	25(10.2)	81(32.9)	28(11.4)	95(38.6)	17(6.9)
9. ultrasound is painful	44 (17.9)	120(48.8)	37(15.0)	34(13.8)	11(4.5)
10. Long waiting to health facilities	25(10.2)	78(31.7)	17(6.9)	97(39.4)	29(11.8)

Table 4.9 shows that 72 % of respondents surveyed agreed that the major factors were lack of breast clinic about breast screening. Those with lack of knowledge about breast screening were 49.2 % of respondents. However, 48.8% of respondents agreed that the barrier was long distance to health facilities. There is no statistical significance between socioeconomic and breast screening method

CHAPTER 5: DISCUSSION

5.1 Introduction

Chapter four outlines discussion summary on breast screening practices and discusses the study main finding by comparing to prior researches. It is structured into four parts that are aimed at addressing the specific research questions: including of sections that discusses the knowledge of the participants on breast cancer screening, the health facilities influence of breast cancer screening, the source of information about breast screening practices and finally the socioeconomic and culture factors of breast cancer screening practice.

The results shown that sociodemographic factors including social categories(ubudehe), health insurance, education level, age and marital status were found to be significantly linked to breast self-breast examination among women. The women's age categories and breast self-examination were significantly had relationships. The respondents within the age group 20 –29 years was found to be highest in breast self-examination practices, however women in age category 40 –49 years had the lowest breast self-examination practices. Being married of women had positive significant linked with practices of clinical breast examination and ultrasound breast scan. Breast screening was found to be greater in married women than single women, undoubtedly due to the improved familiarity about their accountability in being healthy enough and live longer to support her kids and entire family.

5.2. Influence of Knowledge on breast cancer screening and source of information

Among all respondents 68.7% agreed that alcohol were major risk factors followed by smoking represented with 67.5% of respondents. The study is inconsistent to a study done in Ethiopia revealed that knowledge of respondents about risk factors , smoking was the most common risk factor recognized with 71.3% of respondents and 44.2% of respondents agreed that alcohol consumption were the main risk factors (Tsfay *et al.*, 2014). This should be due to different between sociodemographic and study area.

This study revealed that 55% of respondents was having moderate knowledge score on risk factors of breast, also 60.2% of respondents and ultrasound scan which were 20.8%,16.46% respectively. The findings are had same similarities the study done in Nigeria revealed that 84% women had poor knowledge only 23% had fair knowledge and 0.7% had good knowledge on breast cancer screening practices (Ojowus ,A and Arulogun.,O, 20160). This small difference might be related to sample characteristics in the two studies and different awareness of breast health.

Among those respondents who had though breast self-examination, 81% of women surveyed were confirmed they have never thought about self, breast examination and found that there was significant relationship between educations and being taught about breast self-examination only 72%

respondents had never practiced breast self-examination ($\chi^2 = 22.457$, $P = 0.000$) which is less than 0.05 meaning there is statistical significance whereas 17.5 % of respondents had BSE in once a year. 0.61% of respondents that had carry out the examination once a week and 4.1 % were performed BSE once a week and 84.3 % of respondents were not confident in BSE practices. This finding was higher than the study done in university of Buea reveals that only 9.0% knew how to perform BSE, only 3% had performed BSE regularly (Birhane *et al.*, 2017). This finding should be opposing to our results and this should due to difference breast cancer awareness between the two study areas.

In our study, majority of respondents 81.3% surveyed were not used clinical breast examination or breast ultrasound scan. whereas 79% has no plan to join CBE or breast ultrasound scan in next two years. This finding is consistent with study conducted in Kenya which revealed that 72 % women reported that they have not practiced clinical breast examination in the clinics (Ondimu *et al.*, 2014). May be is due to the same characteristic of sample size such as low level of education, poverty and deficiency diagnostic test, because two study was done in rural areas and awareness of breast cancer screening was low compared to their counterpart in urban.

Among all respondents 74.4 % surveyed were agreed that abnormal discharge can influence them to undertake CBE or breast ultrasound scan, followed by, 70.7% of respondent who influenced by breast mass and pain. Our findings are consistent, to a study done by Ibrahim et al 2013 which argues that women are influenced of having lump in breast and other study in Nigeria shown that 21.1% of respondents identified bloody nipple as influence and 40.1 % of respondents agreed that breast lumps symptoms were main symptoms influencing them, only 57% of respondents influenced with breast pain (Ojewusi and Oyedunni, 2016).

The results, demonstrated that 67 % of women surveyed were confirmed they have not ever heard about breast cancer screening and 33% of respondents were heard breast cancer screening. The finding are contrasts to a study done in Australia on breast cancer screening practices among African migrants where 76.1% of respondents had heard breast cancer screening modalities (Ogunsiji *et al.*, 2017). This may be due to the different study settings area, sample size, awareness of breast screening practices and efficient availability of diagnostic modalities greater than in Rwanda.

Our findings revealed that among the respondents received information on health breast and breast cancer screening 30.4% of respondents got information on breast cancer and screening through the radio, whereas 35.4 % of the respondents has no source of information on breast cancer and screening others sources of information were; television 15%, newspaper 11.8% friends 0.8%, hospitals 1.2% of respondent. The findings are similar with the study the study done in study done in Ghana revealed that radio 39.8% of respondents agreed that radio were the major source of breast cancer information and other sources of information were; Television (17.5%), family &

friends (16.7%), newspapers & magazines (14.2%) and only 5% had their knowledge from doctors and nurses (El-nasr, 2017). The reason could be due to unavailability and inaccessibility of advertisement on breast cancer screening through; radio, television, newspaper and negatively health care providers are not providing effectively health education on breast cancer screening modalities

5.3 The influences of health facilities on breast screening practices

The study done in Egypt revealed that the limited health literacy of female who lack basic health literacy information on breast cancer screening may have difficulties to obtain processes, and understanding breast cancer related skills. (El-nasr, 2017) . The study done In sub-Saharan Africa revealed that factors associated with lack of knowledge, insufficient health facilities, are influencing the management of breast cancer (Nambile *et al.*, 2017). Our findings are in same line where breast health education at NCDs or maternity has significant positive correlation with BSE ($\chi^2= 34.748$, $P = 0.001$) and 62.6% of the women who had not practiced breast-self-examination were not ever been provided with breast health education at the health facilities we found that significant negative correlation with BSE. ($\chi^2= 45.59$, $P =0.000$). About 63.4% of the women who were not practiced BSE had not ever given visual aids on breast cancer screening .. However, Advice on screening of breast cancer has a positive significant correlation on breast screening practices and 80% of respondents has not received advice for breast self-examination ($\chi^2= 45.597$, $p = 0.008$). Regular breast health education should be provided at the Maternity services and NCDs clinic to create awareness, in order to improve breast screening practices. Majority of respondents indicated that women are not aware breast health education and, their role in prevention and control of breast cancer and how to conduct BSE in their daily activities.

5.4 Socio-economic and culture barrier to breast cancer screening practices

American cancer society reported that cultural and religious beliefs ,challenging health needs and deficiency economic status position are linked with ineffective breast cancer knowledge and deficiency health seeking behaviors (Kohler *et al.*, 2017). The findings are contrast to our results which revealed that majority of women 72 % of respondents surveyed agreed that the major factors were lack of clinic of breast screening. Those reported factors are lack of knowledge on breast screening were 49.2 % of respondents and 48.8% of respondents agreed that long distance to health facilities were factors preventing them to adherence of breast screening. Tfayli *et al* 2010 reported that factors prevent women to breast cancer screening practices include the deficiency of breast cancer awareness due to poor health literacy and deficiency of education, deficiency of diagnostic programs , non-existence of governmental support , insufficient funds, social obstacles to early detection due to low priority for female health related issues.This findings is supporting our research findings , Other explanations could be that these women are not aware with breast cancer

screening practices and perhaps opportunities for breast screening are not available in their health centers.

CHAPTER SIX: CONCLUSION AND RECOMMENDATION

6.1 Introduction

This chapter provides conclusion basing on presented and discussed results. It also gives recommendations for improving identified gaps.

The study revealed a deficiency knowledge among respondents about the breast cancer screening practices methods. Specially, the poor knowledge on breast cancer risk factors, influence to breast cancer screening practices and screening test. Large proportion of women have no source of information on breast cancer and its screening modalities. Among those who have information about breast cancer only small proportion are occasional practicing.

In addition, the study shown that there is relationship between socio-demographic and breast cancer screening practices. The compliance of breast examination practices among respondents in south Kayonza is very low. Lack of breast clinic, knowledge and long-distance was significantly associated with factors that prevents women to breast examination practices.

6.2. Recommendations

This study makes the following recommendations:

Hospital level:

District hospital should diversify breast health education in MCH and NCDs clinics to integrate; additional health education session of breast cancer, supervised by Nurses, Midwifery and Doctors on Breast Self-Examination and systematic monitoring to improve their practices.

District hospital should strengthen advertisement on breast health education and early screening of breast cancer using different communication such as mass media, television shows , brochures and posters to bring attention of women and good practices to improve breast screening. A standard screening guideline need to be available and implemented in all health centers.

District hospital should spread the information on breast health and screening to the primary schools and secondary schools in catchment area, so that the youngest female should gain basic knowledge of breasts screening. Also the policy to assist subsidies should be elaborated and implemented about breast screening fee and introduce breast clinic in all health centers to facilitate practices.

Health centers and Community level:

Health center should possess a breast clinic where they should deliver breast examination systematically, facilitate transfers and providing message related to the burden of disease. The basic knowledge on breast examination and screening are in need due to deficiency early consultations and presenting at an advanced stage of women. Health talk, campaign is tremendous platform to the women to improve awareness related to breast screening examination. Furthermore, breast health knowledge on the complication of breast cancer have communicated to public in order to improve their attentions.

Breast cancer survivors should be used to share their experience to the community using different ways of communication. and community health workers should be trained about breast cancer, preventive measures, risk factors, symptoms and early detection methods to be able to give health education to the women in their villages.

Researchers:

Researchers should conduct further study at community level in different parts of the country.

There is a need of collaboration between researchers, health care professionals, and policy and other concerned entities. It's crucial to ensure the improvement of breast cancer screen practices of the women in order to decrease burden and death rates related to breast cancer among Rwandan.

6.3 Limitation of the study

The cross sectional design has limited the degree of cause and effect association among variables

The self-reporting information is subjected to bias since the study raised personal issues

The study should not be generalized due to restricted sample size

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Appendix 1 Consent form in English

(To be read and questions answered in language in which the volunteer is fluent).

Title of the study” Factors influencing breast cancer screening practices among women of reproductive age in south Kayonza”

Principal investigator **Pierre Celestin Igiraneza**

CONTACT: 0788772820/722425249

You have been requested to be a part of research study. It very important to understand the concepts which apply to all participants of this study.

- i. Participation is voluntarily
- ii. The study is intended to contribute to improvement of breast cancer screening practices in south Kayonza District.
- iii. There are no penalty for refusing to participate
- iv. You are free to ask questions after you read the explanation so that you can appreciate the nature of the study clearly.
- v. You have the right to withdraw in the study if you are not comfortable.

Assurance of confidentiality of volunteers’ identity

All information including records of your participation as research subject shall remain **confidential**, your names will not be used in any report resulting from this study .You shall be supplied by a copy of this consent form. For information or answers to question concerning your rights as a research subject you may contact. The chairman of College of Medicine and Health Sciences Institution Review Board, ask through this phone number **0788 490 522 and Deputy Chairperson (0783 340 040)**. If there is any portion of this consent sheet that you do not understand , ask the investigator before signing . I acknowledge receipt of this agreement, to include: the consent explanation and the informed consent agreement

Principal investigator : Pierre Céléstin IGIRANEZA

Signature -----

Appendix 2 Women consent form

After being received an explanation about the purpose of this study, my contribution and being reassured that my rights shall be protected, I hereby accepting to sign on this sheet and I agree to participate in this study by answering to questions asked

I have well read and understand this document and accept to make signature freely without any oppression from whomever.

Date:

Signature

Appendix : 3 QUESTIONNAIRE ENGLISH VARSION

BACKGROUND INFORMATION ABOUT THE RESPONDENT TICK THE MOST APPROPRIATE RESPONSE (√)

1. To which age category do you belong?

16-19 years

20 – 29 years

30 – 39 years

40 – 49 years

2. What is your level of education?

Primary

Secondary

University

Not basic education

3. What is your marital status?

Single

Married

Divorced

Widowed

4. What is your social (ubudehe) category?

ubudehe category 1

ubudehe category 2

ubudehe category 3

ubudehe category 4

5. What is your Health insurance

UAP

RAMA

MMI

CHBI

Private insurance

None

B. KNOWLEDGE OF WOMEN TO CONDUCT SELF BREAST EXAMINATION AND BREAST SCREENING PRACTICES

Please tick the number that best describes your opinion about breast cancer and screening for

Question 1-9. The numbers represent the following responses;

1 = Disagree strongly, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Agree strongly

6.KNOWLEDGE ABOUT BREAST CANCER RISK FACTORS	Disagree strongly	Disagree,	Neutral	Agree	Agree strongly
1. Physical inactivity increases risk of breast cancer ?					
2. Heavy Alcohol intake increases risk of breast cancer?					
3. Breast cancer results due to breast feeding ?					
4. Breast cancer is caused by witchcraft ?					
5. Smoking increases risk of breast cancer ?					
6. Breast cancer may be inherited ?					
7. Breast cancer results from breast injury?					
8. Early onset of menstruation increases risk of cancer?					
9. Early screening prevents breast cancer?					

7. using the scale below complete the table to indicate the factors that are likely to Influence your decision on clinical breast examination and self-breast examination.

1 = Disagree strongly, 2 = Disagree, 3 = Neutral, 4 = Agree, 5= Agree strongly

The following items will influence me to get a breast examination	Disagree strongly	Disagree	Neutral	Agree	Agree strongly
1. Experiencing breast pain					
2. Family history of breast cancer					
3. Having breast mass					
4. Having abnormal breast discharges					
5. Value and importance of breast examination					
6. After failure of herbal medicine					

TICK THE MOST APPROPRIATE RESPONSE (√)

8. How often do you carry out breast self-examination?

- i. Once a year
- ii. Once a month
- iii. Once a week
- iv. Never

9. If you have ever done a breast self-examination, how do you rate your ability to do the self-breast examination?

- i. Extremely confident
- ii. Confident
- iii. Not confident
- iv. extremely not confident

11. How often have you undertaken a breast ultrasound scan or clinical breast examination by a Nurse or Midwife

- i. Once in more than a year
- ii. Once a year
- iii. Never
- iv. Not sure

10. Do you intend to undertake a clinical breast examination by a nurse or midwives at the Clinic within this next year?

- i. Yes
- ii. No

11. Have you ever been taught how to conduct breast self examination?

- Yes
- No

12. Have you ever heard of breast cancer screening?

- Yes No

13. What are your source (s) of information? Tick all that apply

- Radio
- Television
- Newspapers
- Internet Teacher
- Nurse or doctors
- Friends
- At home

None

14. How often did you have educational sessions about breast health and screening by Nurses/midwives at the Maternity services and NCDS clinic?

- i. Once a year
- ii. Once every six months
- iii. Once every three months
- iv. Never

15. How many times did Nurses/ guide y midwives ou on how to perform breast self-examination at the Maternal service or NCDS clinic?

- i. Once a year
- ii. Once every six months
- iii. Once every three months
- iv. Once a month
- v. Never

16. How often were you provided with brochures/handouts or shown video tapes on breast cancer screening at the Maternity services or NCDS clinic?

- i. Very Frequently
- ii. Frequently
- iii. Rarely
- iv. Never

17. Were you advised by a nurse/ at the midwives Maternal and Child Health clinic to go for clinical breast screening in the last two years?

Yes
No

18. For Question 1– 9, use the scale provided below to show the degree of your Response

1 = Disagree strongly, 2 = Disagree, 3 = Neutral, 4 = Agree, 5= Agree strongly\

	1	2	3	4	5
Probable socioeconomic and cultural barriers					
1. Culture Practices					
2. Religious practices					
3. Stigma associated to cancer					
4. Lack of knowledge					
5. Long distance to screening facilities					
6. Lack of Breast cancer clinic					
7. Perception that breast screening is not important					
8 . Fear of breast examination findings.					
9. Serious concern that a ultrasound will be painful					
10. Long waiting at health facilities					

Appendix: 4 Consent form /Kinyarwanda vasion

INYANDIKO YO KWEMERA KUGIRA URUHARE MU BUSHAKASHATSI

Kugira ngo nsoze amasomo y'icyiciro cya gatatu cya kaminuza mu buvuzi bwo kwita kubarwayi ba kanseri mu buforomo, IGIRANEZA Pierre Céléstin ndashaka gukora ubushakashatsi ku **“Kwisuzumisha kanseri y'ibere mu bagore bari mugihe cy'ubukure bo mu majyepho ya karere ka Kayonza”**

Ubwo bushakashatsi bukazakorera ku gitsina gore kuva ku myaka makumyabiri kugera ku myaka mirongo itanu. Ku bagore bazaba bivuzi bataha ku bitaro bya Rwinkwavu n'ibigo nderabuzima nderabuzima bine bibishamikiye ho aribyo Nyamirama, Rwinkwavu, Kabarondo na Ruramira .Ni muri urwo rwego mbasaba Kugira uruhare muri ubu bushakashatsi mudufasha gushyiraho ibibazo byanditse.

Uburenganzira bwanyu:

Mufite uburenganzira bwo kwemera cyangwa kwanga kugira uruhare muri ubu bushakashatsi no kubwivana mo igihe icyo ari cyo cyose bibaye ngombwa mutabajijwe ibisobanuro. Ibisubizo byanyu bizagirirwa ibanga kuko mudasabwa kwandika amazina yanyu ku mpapuro zasubirijwe ho ndetse n'ubafasha kuzuzura urupapuro rw'ibibazo ntatanga kumenya amazina yanyu.

Muzamenyeshwa kandi ibyavuye muri ubu bushakashatsi binyujijwe ku bigo nderabuzima.

Mbaye mbashimiye ubufatanye bwanyu muri ubu bushakashatsi

Umukono n'Amazina y'Umushakashatsi: IGIRANEZA Pierre Céléstin

Telephone 0788772820

Icyemezo kigaragaza umugore wemeye gufasha mu bushakashatsi

Maze gusobanurirwa intego y'ubu bushakashatsi, uruhare rwange ndetse nkanabwirwa uburyo uburenganzira bwange buzubahirizwa, nemeye gushyiraho umukono kuri iyi nyandiko mu izina ryanjye bwite, nk'icyemezo nemeye gushyiraho ibibazo bibazwa muri ubu bushakashatsi. Nasomye neza iyi nyandiko kandi nayisobanukiwe neza niyo mpamvu nshyizeho umukono nta gahato.

Itariki & Umukono

Appendix 5 Questionnaire Kinyarwanda Varsion

**IBIBAZO KUBUSHAKASHATSI KU KWIPIMISHA KANSERI Y'IBERE KU BAGORE
BARI MUGIHE CY'UBUKURE MU MAGEPFO Y'AKARERE KA KAYONZA**

1. Uri mu kigero cy'imyaka ingahe?

1. Hagati y'imyaka 16 – 19
2. Hagati y'imyaka 20- 29
3. Hagati y'imyaka 30 – 39
4. Hagati y'imyaka 40 – 50

2. Wize amashuri angahe?

1. Amashuri abanza
2. Amashuri yisumbuye
3. icyiciro cya mbere cya kaminuza
4. icyiciro cya kabiri cya kaminuza
5. Ntayo

3. Nirihe rangamimerere ryawe ?

1. Ingaragu
2. ufite umugabo
3. Watandukanye n'umugabo
4. uri umupfakazi

4. Uba mu cyihe cyiciro cy' ubudehe?

1. icyiciro cya 4
2. icyiciro cya 3
3. icyiciro cya 2
4. icyiciro cya 1

5. Ukoresha ubuhe bwishingizi?

1. Mituelle
2. RAMA
3. MMI
4. UAP
5. Ntabwo

Uzuza aha ubundi bwishingizi waba ukoresha.....

6. Shyira akamenyetso muri iyi mbonerahamwe ku mubare usobanura igisubizo ku bijyanye n,ubumenyi bwawe kubijyanye nibyongera ibyago byo kurwara kanseri y'ibere. **Ikibazo cya 5 – 13.** Ibisubizo bikurikiranye gutya : **1 = Ndabihakanye cyane, 2 = Ndabihakanye, 3 = Simbizi, 4 = Ndabyemera, 5 = Ndabyemera cyane**

6. Ubumenyi kubishobora kongera ibyago byo kurwara kanseri y'ibere	1	2	3	4	5
1. Kudakora imyitozo ngorora mubiri					
2. Kunywa inzoga nyinshi					
3. Kutonsa umwana wawe					
4. uburozi					
5. Kunywa itabi					
6. Karande yo mu muryango					
7. Gukomereka ibere					
8. Kujya mumihango mbere yigihe cyagenwe					
9. Kwisuzumisha ibere kare birwanya Kanseri y'ibere					

7. Koresha akamenyetso werekana ibigereranyo bikurikirira wuzuzwa iyi mbonerahamwe, werekane impamvu zatuma wipima cyangwa wajya kwipimisha kwa muganga Kanseri y'ibere.

1 = Ndabihakanye cyane, 2 = Ndabihakanye , 3 = Simbizi , 4 = Ndabyemera 5= Ndabyemera cyane

Impamvu zishobora gutuma ujya kwa muganga kwipimisha ibere	Ndabihaka nye cyane	Ndabihakanye	Simbizi	Ndabyemer a	Ndabyemera cyane
3. Kuribwa ibere cg amabere					
4. Karande yo mu muryango					
3. Kugira ibibyimba mu mabere					
4 . Kugira amatembabuzi adasanzwe mu ibere					
5. Kumva ko ari inshingano zawe mu kurwanya kanseli y'ibere					
6. Washyizeho imiti ya Kinyarwanda ntikore					

8. Wisuma ibere mu gihe kingana gute?

1. Rimwe mu kwezi
2. Rimwe mu cyumweru
3. Rimwe mu mwaka
4. Nta na rimwe

Niba igisubizo cyawe ari nta narimwe , sobanura impamvu.....

9. Ese waba warigeze ubwirwa ibijyanye nuko wakwisuzuma ibere ?

Yego Oya

10. Ese niba ujya wisuzuma ibere, nigute wagereranya ubumenyi bwawe bwo kwisuzuma ibere?

1. Nisuzuma neza cyane
2. Nisuzuma neza
3. Ntago nisuzuma
4. Ntago mbizi kwisuzum

11. Ni inshuro zingahe waba warasuzumwe umubyaza/umuforomo (kazi) ibere mu myaka ibiri yashize?

1. Rimwe mu myaka irenze ibiri
2. Rimwe mu mwaka
3. Nta na rimwe
4. Simbizi

12. urateganya kujya kwa muganga kwisuzumisha ibere muri uyu mwaka?

Yego Oya

18. Niba igisubizo ari yego,amakuru yo kwisuzumisha kanseri y'ibere waba warakuye he?

1. Radiyo
2. Televisiyo
3. Ibinyamakuru
4. Interneti
5. Kwa muganga
6. Ku nshuti
7. Mu isoko

Ahandi,wakuye amakuru, handike hano.....

13. Ni kangahe witabiriye ibiganiro mbwirwa ruhame bivuga ku kwipimisha ibere bitangwa na abaforomo (kazi) /abaganga bashinzwe ubuzima bw'umwana n'umugore?

1. Rimwe mu mwaka
2. Rimwe mu mezi atandatu
3. Rimwe mu mezi atatu
4. Rimwe mu kwezi
5. Nta na rimwe

14. Ni inshuro zingaha umuganga /umuforomo (kazi) ushinzwe ubuzima bw'umwana n'umugore yakweretse uko wakwisuzuma kanseri y'ibere muri uno mwaka?

1. Rimwe mu mwaka
2. Rimwe mu mezi atandatu
3. Rimwe mu mezi atatu
4. Rimwe mu kwezi
5. Nta na rimwe

15. Ni inshuro zingaha wahawe imfashanyigisho cyangwa weretswe amashusho yigisha kwisuzuma ibere myaka ibiri ishize ?

1. Inshuro nyinshi cyane
2. Inshuro imwe
3. Nta na rimwe
4. Simbizi

16. Ni inshuro zingaha wagiriwe inama n'umuganga/umuforomo (kazi) ushinzwe ubuzima bw'umwana n'umugore kuza kwipimisha kanseri y' ibere ?

1. Inshuro nyinshi cyane
2. Inshuro imwe
3. Nta na rimwe
4. simbizi

17. Wigeze wumva amakuru yerekeye uko wakwisuzumisha kanseri y'ibere?

Yego

Oya

18. Shyira akamenyetso muri iyi mbonerahamwe ku mubare usobanura igisubizo ku bijyanye n'imbogamizi zawe kubijyanye no kwisuzumisha ibere. **Ikibazo cya 1 – 10. Ibisubizo bikurikiranye gutya: **1 = Ndabihakanye cyane, 2 = Ndabihakanye, 3 = Simbizi, 4 = Ndabyemera, 5 = Ndabyemera cyane****

ZIMWE MUMPOGAMIZI ZIBUZA ABAGORE KWIPIMIRWA KANSERI Y'IBERE KU GIHE	1	2	3	4	5
1. Imbogamizi z'umuco ?					
2. Imyizerere yanyu mu muryango?					
3. Ipfunwe ku murwa yi wa kanseri y'ibere?					
4. ubumenyi buke?					
5. Ibigo by'ubuvuzi biri kure					
6. Kutagira isuzumiro rya kanseri y'ibere rihoraho					
7. ubushobozi buke					
8 . Ubwoba bw'ibisubizo nyuma yo gusuzumwa					
9. Kugira ubwoba bwuko icyuma gisuzuma kibabaza					
10. Gutegereza igihe kirekire kwa muganga					

MURAKOZE CYANE

Appendix 6 Approval letter for data collection

REPUBLIC OF RWANDA



ESTERN PROVINCE
KAYONZA DISTRICT
RWINKWAVU HOSPITAL
P.O. BOX: 048 NGOMA
Email: rwinkwavu.hospital@moh.gov.rw

To Mr.IGIRANEZA Pierre Celestin
Tel: +2507887772820

Re: Approval letter for data collection

Dear Sir,

Reference is made to your letter dated 10th February 2019, requesting our acceptance of collecting data, for her final academic research entitled "Breast Cancer screening practices among women of reproductive age in South Kayonza, Rwanda";

Given that these data will be collected from Rwinkwavu District hospital and some of its health centers in the catchment (Rwinkwavu, Kabarondo, Nyamirama and Ruramira Health Center);

It is my pleasure to inform you that Rwinkwavu District Hospital administration has granted authorization to conduct this research and collect Data.

You are requested to share the results with the hospital Administration upon completion of the research.

Looking forward to having success in your research.

Sincerely,



Dr. Michel HABIYAREMYE
Director General of Rwinkwavu District Hospital.

CC:

-Head of Health Centers (Rwinkwavu, Kabarondo, Nyamirama and Ruramira)

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Rwinkwavu, February 10th, 2019
N° 0105... / H.RWI / DG / 2019

Received 25/12/2019



Ernestine Kwabarondo
Received 25/12/2019
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COLLEGE OF MEDICINE AND HEALTH SCIENCES

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 14/01/2019
Ref: CMHS/IRB/037/2019

IGIRANEZA Pierre Celestin
School of Nursing and Midwifery, CMHS, UR


Dear **IGIRANEZA Pierre Celestin**

RE: ETHICAL CLEARANCE

Reference is made to your application for ethical clearance for the study entitled *“Breast Cancer Screening Practices among Women of Reproductive Age in South Kayanza”*.

Having reviewed your protocol and found it satisfying the ethical requirements, your study is hereby granted ethical clearance. The ethical clearance is valid for one year starting from the date it is issued and shall be renewed on request. You will be required to submit the progress report and any major changes made in the proposal during the implementation stage. In addition, at the end, the IRB shall need to be given the final report of your study.

We wish you success in this important study.


Professor Jean Bosco GAHUTU
Chairperson Institutional Review Board,
College of Medicine and Health Sciences, UR

Cc:

- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate studies, UR

