

A STUDY OF AWARENESS ABOUT BREAST CANCER AND
PRACTICE OF BREAST SELF-EXAMINATION AMONG
FEMALE RESPONDENTS IN DHAKA

Submitted by

Naharin Syeed

ID: 2011-3-70-022



Department of Pharmacy

East West University

A STUDY OF AWARENESS ABOUT BREAST CANCER AND PRACTICE OF BREAST SELF-EXAMINATION AMONG FEMALE RESPONDENTS IN DHAKA

**A thesis report submitted to the Department of Pharmacy, East West University, in
partial fulfillment of the requirements for the degree of Bachelor of Pharmacy**

Submitted by

Naharin Syeed

ID: 2011-3-70-022



Department of Pharmacy

East West University

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation entitled “A study of awareness about breast cancer and practice of breast self-examination among female respondents in Dhaka” is an authentic and genuine research work carried out by me in 2015 under the guidance of **Nishat Nasrin**, Senior Lecturer, Department of Pharmacy, East West University, Aftabnagar, Dhaka-1212, Bangladesh.

.....
Naharin Syeed

ID: 2011-3-70-022

Department of Pharmacy

East West University

Aftabnagar, Dhaka-1212

CERTIFICATE BY THE SUPERVISOR

This is to certify that the dissertation “A study of awareness about breast cancer and practice of breast self-examination among female respondents in Dhaka” submitted to the Department of pharmacy, East West University was carried out by **Naharin Syeed** (ID: 2011-3-70-022) in partial fulfillment of the requirements of the degree of Bachelor of Pharmacy under our guidance & supervision and no part of this thesis has been submitted for any other degree.

.....
Nishat Nasrin

Senior Lecturer and Supervisor

Department of Pharmacy

East West University

Aftabnagar, Dhaka-1212

.....
Nigar Sultana Tithi

Senior Lecturer and Co-Supervisor

Department of Pharmacy

East West University

Aftabnagar, Dhaka-1212

Endorsement by Head of the Department

This is to certify that the thesis “A study of awareness about breast cancer and practice of breast self-examination among female respondents in Dhaka” submitted to the Department of pharmacy, East West University in partial fulfillment of the requirements of the degree of Bachelor of Pharmacy was carried out by **Naharin Syeed** (ID: 2011-3-70-022).

.....
Dr. Shamsun Nahar Khan

Postdoc Harvard, USA

Associate Professor and
Chairperson

Department of Pharmacy

East West University
Aftabnagar, Dhaka-1212

ACKNOWLEDGEMENTS

All praise to the Almighty, who has made all things in my life possible. It is him who has sustained me throughout the course of my study.

I would like to extend my sincere thanks to the East West University for giving me the opportunity to allow me to conduct such a study, utilizing all the facilities of the computer laboratory and library.

I am greatly indebted to my honorable supervisor **Nishat Nasrin**, Senior Lecturer, Department of Pharmacy, East West University for her mastermind direction, dexterous management, optimistic counseling and scholarly guidance from the germinal to the terminal end of this work.

I wish to extend my sincere gratitude to **Nigar Sultana Tithi**, Senior Lecturer, Department of Pharmacy, East West University, for her constructive suggestion, valuable criticism, active encouragement and cordial co-operation.

I feel my deepest admiration to the chairperson, **Dr. Shamsun Nahar Khan**, Department of Pharmacy, and the administration, East West University for giving me the honor to perform the research in partial fulfillment of the requirements for the award of the degree Bachelor of Pharmacy.

Finally I would be glad to extend my gratitude to the family members and my friends for their prayerful concern and supports.

Table of Contents

| Contents | | Page No. |
|-----------------------------|--------------------------------|-----------------|
| List of Tables | | I |
| List of Figures | | II |
| List of Abbreviation | | V |
| Abstract | | VI |
| Chapter-1 | Introduction | 1-23 |
| 1.1 | Cancer | 1 |
| 1.2 | Breast Cancer | 1 |
| 1.3 | The normal breast | 2 |
| 1.4 | The Lymph System of the Breast | 2 |
| 1.5 | Types of cancer | 3 |
| 1.5.1 | Carcinoma | 3 |
| 1.5.2 | Sarcoma | 4 |
| 1.5.3 | Leukemia | 4 |
| 1.5.4 | Lymphoma | 4 |
| 1.5.5 | Multiple Myeloma | 5 |

| | | |
|-----------------|---|---|
| 1.5.6 | Melanoma | 5 |
| 1.5.7 | Brain and Spinal Cord Tumors | 5 |
| 1.5.8 | Other Types of Tumors | 5 |
| 1.6 | Risk Factor | 6 |
| 1.6.1 | Gender | 6 |
| 1.6.2 | Aging | 6 |
| 1.6.3 | Genetic alterations (changes) | 6 |
| 1.6.4 | Mammographic breast density | 6 |
| 1.6.5 | Family history | 7 |
| 1.6.6 | Personal history of breast cancer | 7 |
| 1.6.7 | Certain breast changes found on biopsy | 7 |
| 1.6.8 | Alcohol | 8 |
| 1.6.9 | Reproductive and menstrual history | 8 |
| 1.6.11 | Long-term use of menopausal hormone therapy | 8 |
| 1.6.11.1 | DES (diethylstilbestrol) | 8 |
| 1.6.11.2 | Body weight | 8 |
| 1.6.11.3 | Physical activity level | 8 |
| 1.6.11.4 | Race | 9 |

| | | |
|--------------|-------------------------------------|----|
| 1.7 | Signs and Symptoms of Breast Cancer | 9 |
| 1.8 | Diagnosis of Breast Cancer | 10 |
| 1.8.1 | Breast Cancer Self Examination | 10 |
| 1.8.2 | Clinical Breast Exam | 11 |
| 1.8.3 | Mammography | 11 |
| 1.8.4 | Needle aspiration | 12 |
| 1.8.5 | Needle biopsy | 12 |
| 1.8.6 | Vacuum biopsy | 12 |
| 1.8.7 | Punch biopsy | 13 |
| 1.8.8 | Excision biopsy (surgical) | 13 |
| 1.8.9 | Wire guided biopsy | 13 |
| 1.9 | Treatment of Breast Cancer | 13 |
| 1.9.1 | Surgery | 14 |
| 1.9.2 | Radiation therapy | 15 |
| 1.9.3 | Chemotherapy | 16 |
| 1.9.4 | Hormonal therapy | 16 |
| 1.9.5 | Targeted therapy | 17 |

| | | |
|------------------|--|-------|
| 1.10 | Reduce the risk of Breast Cancer | 18 |
| 1.10.1 | Weight, Exercise, and Breast Cancer Risk | 19 |
| 1.10.2 | Diet and Breast Cancer Risk | 19 |
| 1.10.3 | Alcohol and Breast Cancer Risk | 20 |
| 1.11 | Global Epidemiology of Breast Cancer | 20 |
| 1.11.1 | Prevention of breast cancer | 21 |
| 1.11.2 | Breast cancer survival | 21 |
| 1.12 | Breast Cancer in Bangladesh | 22-23 |
| Chapter-2 | Literature review | 24-32 |
| 2.1 | Knowledge, Attitude and Practice Regarding Breast Cancer Among Medical Students of Bangladesh. | 24 |
| 2.2 | To Determine The Level Of Knowledge Regarding Breast Cancer And To Increase Awareness About Breast Cancer Screening Practices Among A Group Of | 24 |
| 2.3 | Knowledge, Attitudes, and Practices Surrounding Breast Cancer and Screening in Female Teachers of Buraidah, Saudi Arabia | 25 |
| 2.4 | Knowledge of breast cancer and its early detection measures among rural women in Akinyele Local Government Area, Ibadan, Nigeria | 25-26 |
| 2.5 | Korean women: Breast cancer knowledge, attitudes and behaviors | 26 |

| | | |
|-------------|--|-----------|
| 2.6 | Awareness and practice of breast self examination among malaysian women with breast cancer | 26-27 |
| 2.7 | Breast cancer awareness and barriers to symptomatic presentation among women from different ethnic groups in | 27 |
| 2.8 | Breast Self-examination: Knowledge, Attitude, and Practice among Female Dental Students in Hyderabad City, India | 27 |
| 2.9 | Breast cancer knowledge and awareness among university students in Angola | 28 |
| 2.10 | Knowledge and attitude of Saudi female students towards breast cancer: A cross-sectional study. | 28 |
| 2.11 | Breast Cancer Screening Awareness, Knowledge, and Practice among Arab Women in the United Arab Emirates: A Cross-Sectional Survey | 28-29 |
| 2.12 | Awareness level and attitude towards breast cancer screening practices among female health workers in Esanland, Edo state, Nigeria | 29 |
| 2.13 | Breast self-examination: knowledge, attitudes, and practices among female health care workers in Tehran, | 29 |
| 2.14 | Assessing the level of breast cancer awareness among recently diagnosed patients in Ain Shams University Hospital | 30 |
| 2.15 | Breast cancer in Iran: need for greater women awareness of warning signs and effective screening methods | 31 |

| | | |
|------------------|---|-------|
| 2.16 | Survey on breast feeding awareness among UNHS female respondents childbearing age,in San Francisco,USA. | 32 |
| | Significance of the study | 33 |
| | Aims and Objectives of the study | 34 |
| Chapter-3 | Methodology | 35 |
| 3.1 | Type of study | 35 |
| 3.2 | Study area | 35 |
| 3.3 | Total Number of participants | 35 |
| 3.4 | Inclusion Criteria of Patients | 35 |
| 3.5 | Exclusion Criteria | 35 |
| 3.6 | Procedure | 35 |
| Chapter-4 | Result | 36-63 |
| Chapter-5 | Discussion and Conclusion | 64-67 |
| Chapter-7 | References | 68-71 |

List of the Tables

| Table | Name of the Table | Page No. |
|------------------|---------------------------------|-----------------|
| Table 4.1 | Category according to BMI index | 40 |

List of Figures

| Figure No. | Name of the Figure | Page No. |
|--------------------|---|-----------------|
| Figure 1.1 | Diagnosis of Breast Cancer | 10 |
| Figure 4.1 | Occupation of female population | 36 |
| Figure 4.2 | Age of Distribution | 37 |
| Figure 4.3 | Education qualification of respondents | 38 |
| Figure 4.4 | BMI status of breast cancer | 39 |
| Figure 4.5 | Marital status | 40 |
| Figure 4.6 | Having children | 41 |
| Figure 4.7 | Number of children | 41 |
| Figure 4.8 | Brest feeding Time | 42 |
| Figure 4.9 | Knowledge about breast cancer | 43 |
| Figure 4.10 | Source of information of female respondents | 43 |
| Figure 4.11 | Signs & Symptoms | 45 |
| Figure 4.12 | Reasons of Breast Cancer | 46 |
| Figure 4.13 | Risk of Breast cancer. | 47 |
| Figure 4.14 | Menstruation status | 48 |
| Figure 4.15 | Radiation to chest or face | 49 |
| Figure 4.16 | Knowledge about lower risk of breast cancer | 50 |

| | | |
|--------------------|--|----|
| Figure 4.17 | Knowledge of Nutrition food | 51 |
| Figure 4.18 | Taking nutrition food | 52 |
| Figure 4.19 | Knowledge of Physical Exercise | 53 |
| Figure 4.20 | Physical activity of respondents | 54 |
| Figure 4.21 | Regularly observe breast change | 55 |
| Figure 4.22 | Measures after finding lump | 56 |
| Figure 4.23 | Emotional Barrier | 57 |
| Figure 4.24 | Knowledge breast cancer treatment | 58 |
| Figure 4.25 | Knowledge about types of breast cancer treatment | 58 |
| Figure 4.26 | Importance of breast cancer screening | 59 |
| Figure 4.27 | Knowledge about diagnosis | 60 |
| Figure 4.28 | Types of diagnosis | 61 |
| Figure 4.29 | Knowledge about breast self exam perform | 62 |
| Figure 4.30 | Knowledge about clinical breast exam perform | 63 |
| Figure 4.31 | Knowledge about mammography | 64 |

List of Abbreviation

| Abbreviation | Elaboration |
|---------------------|-----------------------------|
| BSE | Breast Self-examination |
| CBE | Clinical Breast Examination |

| | |
|-------------|--|
| TDLU | Terminal Duct Lobular Units |
| DCIS | Ductal Carcinoma in Situ |
| LCIS | Lobular Carcinoma in Situ |
| HER2 | Human Epidermal Growth Factor Receptor 2 |
| BMI | Body Mass Index |
| HRT | Hormonal Replacement Therapy |
| MRI | Magnetic Resonance Imaging |
| BCS | Breast-Conserving Surgery |
| SLNB | Sentinel Lymph Node Biopsy |
| LHRH | Luteinizing Hormone-Releasing Hormone |
| AIs | Aromatase Inhibitors |

ABSTRACT

Breast cancer in women is a major health burden both in developed and developing countries. It is the second leading cause of death in women worldwide as well as in Bangladesh. Recent global cancer statistics shows that global incidence is rising at a faster rate especially in developing countries like Bangladesh. But still breast cancer is not on the top of the priority list for the policy maker's, donors and health professionals. But the prevailing situation can be more devastated if early attention is not given. To concentrate on this fast growing health problem will need to know the overall situation concerning incidence, prevalence, risk group, diagnostic and treatment status survival and mortality rate first to make a comprehensive policy to cope with breast cancer situation in Bangladesh. To evaluate the knowledge and practices about breast cancer among women, this present study was conducted. Data were collected from 250 female respondents by a pre-structured questionnaire in different locations of Dhaka. The data were coded, entered, and analyzed using the Microsoft Excel 2010. The data were analyzed by descriptive studies and expressed as percentage and plotted with pie and bar diagrams. Breast cancer was known to 70% women (n=250). In our present study 74% respondents were married and 87% respondents had children. Knowledge about sign, symptoms, diagnosis and treatment was good among the women. Results showed that 21% women had knowledge about performing breast self-exam and 17% had heard about mammography. Overall, to controlling the morbidity and mortality rate of breast cancer we should increase the level of knowledge and we should take some steps to spread the knowledge and awareness about breast cancer.

Key words: Breast Cancer, Women in Dhaka, Breast-self Exam, Mammography, Clinical Breast Exam.

1.1 Cancer

The body is made up of trillions of living cells. Normal body cells grow, divide into new cells, and die in an orderly way. During the early years of a person's life, normal cells divide faster to allow the person to grow. After the person becomes an adult, most cells divide only to replace worn-out or dying cells or to repair injuries. Cancer begins when cells in a part of the body start to grow out of control. There are many kinds of cancer, but they all start because of out-of-control growth of abnormal cells. Cancer cell growth is different from normal cell growth. Instead of dying, cancer cells continue to grow and form new, abnormal cells. Cancer cells can also invade (grow into) other tissues, something that normal cells cannot do. Growing out of control and invading other tissues are what makes a cell a cancer cell. Cells become cancer cells because of damage to DNA. DNA is in every cell and directs all its actions. In a normal cell, when DNA gets damaged the cell either repairs the damage or the cell dies. In cancer cells, the damaged DNA is not repaired, but the cell doesn't die like it should. Instead, this cell goes on making new cells that the body does not need. These new cells will all have the same damaged DNA as the first cell does. People can inherit damaged DNA, but most DNA damage is caused by mistakes that happen while the normal cell is reproducing or by something in our environment (Avis *et al*, 2005).

1.2 Breast cancer

Tumors in the breast can be benign (not cancer) or malignant (cancer):

Benign tumors: Are usually not harmful

- Rarely invade the tissues around them
- Don't spread to other parts of the body
- Can be removed and usually don't grow back

Malignant tumors: May be a threat to life

- Can invade nearby organs and tissues (such as the chest wall)
- Can spread to other parts of the body

- Often can be removed but sometimes grow back

Breast cancer cells can spread by breaking away from a breast tumor. They can travel through blood vessels or lymph vessels to reach other parts of the body. After spreading, cancer cells may attach to other tissues and grow to form new tumors that may damage those tissues (National Cancer Institute, 2012).

1.3 The Normal Breast

Breasts are made of connective tissue, glandular tissue, and fatty tissue. Connective tissue and glandular tissue look dense, or white on a mammogram. Fatty tissue is non-dense, or black on a mammogram. Dense breasts can make mammograms harder to interpret.

Breasts have lobes, lobules, ducts, an areola, and a nipple.

- Lobes are sections of the glandular tissue. Lobes have smaller sections called lobules that end in tiny bulbs that can make milk.
- Ducts are thin tubes that connect the lobes and lobules. Milk flows from the lobules through the ducts to the nipple.
- The nipple is the small raised area at the tip of the breast. Milk flows through the nipple. The areola is the area of darker-colored skin around the nipple. Each breast also has lymph vessels (National Cancer Institute, 2014).

1.4 The Lymph System of the Breast

The lymphatic system, which is a part of body's defense system, contains lymph vessels and lymph nodes.

- Lymph vessels are thin tubes that carry a fluid called lymph and white blood cells.
- Lymph vessels lead to small, bean-shaped organs called lymph nodes. Lymph nodes are found near breast, under arm, above collarbone, in chest, and in other parts of body.
- Lymph nodes filter substances in lymph to help fight infection and disease. They also store disease-fighting white blood cells called lymphocytes (National Cancer Institute, 2014).

1.5 Types of Cancer

There are more than 100 types of cancer. Types of cancer are usually named for the organs or tissues where the cancers form. For example, lung cancer starts in cells of the lung, and brain cancer starts in cells of the brain. Cancers also may be described by the type of cell that formed them, such as an epithelial cell or a squamous cell (National Cancer Institute, 2014).

Here are some categories of cancers that begin in specific types of cells:

1.5.1 Carcinoma

Carcinomas are the most common type of cancer. They are formed by epithelial cells, which are the cells that cover the inside and outside surfaces of the body. There are many types of epithelial cells, which often have a column-like shape when viewed under a microscope. Carcinomas that begin in different epithelial cell types have specific names:

Adenocarcinoma is a cancer that forms in epithelial cells that produce fluids or mucus. Tissues with this type of epithelial cell are sometimes called glandular tissues. Most cancers of the breast, colon, and prostate are adenocarcinomas. Basal cell carcinoma is a cancer that begins in the lower or basal (base) layer of the epidermis, which is a person's outer layer of skin.

Squamous cell carcinoma is a cancer that forms in squamous cells, which are epithelial cells that lie just beneath the outer surface of the skin. Squamous cells also line many other organs, including the stomach, intestines, lungs, bladder, and kidneys. Squamous cells look flat, like fish scales, when viewed under a microscope. Squamous cell carcinomas are sometimes called epidermoid carcinomas.

Transitional cell carcinoma is a cancer that forms in a type of epithelial tissue called transitional epithelium, or urothelium. This tissue, which is made up of many layers of epithelial cells that can get bigger and smaller, is found in the linings of the bladder, ureters, and part of the kidneys (renal pelvis), and a few other organs. Some cancers of the bladder, ureters, and kidneys are transitional cell carcinomas (National Cancer Institute, 2014).

1.5.2 Sarcoma

Sarcomas are cancers that form in bone and soft tissues, including muscle, fat, blood vessels, lymph vessels, and fibrous tissue (such as tendons and ligaments).

Osteosarcoma is the most common cancer of bone. The most common types of soft tissue sarcoma are leiomyosarcoma, Kaposi sarcoma, malignant fibrous histiocytoma, liposarcoma, and dermatofibrosarcomaprotuberans (National Cancer Institute, 2014).

1.5.3 Leukemia

Cancers that begin in the blood-forming tissue of the bone marrow are called leukemias. These cancers do not form solid tumors. Instead, large numbers of abnormal white blood cells (leukemia cells and leukemic blast cells) build up in the blood and bone marrow, crowding out normal blood cells. The low level of normal blood cells can make it harder for the body to get oxygen to its tissues, control bleeding, or fight infections.

There are four common types of leukemia, which are grouped based on how quickly the disease gets worse (acute or chronic) and on the type of blood cell the cancer starts in (lymphoblastic or myeloid) (National Cancer Institute, 2014).

1.5.4 Lymphoma

Lymphoma is cancer that begins in lymphocytes (T cells or B cells). These are disease-fighting white blood cells that are part of the immune system. In lymphoma, abnormal lymphocytes build up in lymph nodes and lymph vessels, as well as in other organs of the body.

There are two main types of lymphoma:

Hodgkin lymphoma – People with this disease have abnormal lymphocytes that are called Reed-Sternberg cells. These cells usually form from B cells.

Non-Hodgkin lymphoma – This is a large group of cancers that start in lymphocytes. The cancers can grow quickly or slowly and can form from B cells or T cells (National Cancer Institute, 2014).

1.5.5 Multiple Myeloma

Multiple myeloma is cancer that begins in plasma cells, another type of immune cell. The abnormal plasma cells, called myeloma cells, build up in the bone marrow and form tumors in bones all through the body. Multiple myeloma is also called plasma cell myeloma and Kahler disease (National Cancer Institute, 2014).

1.5.6 Melanoma

Melanoma is cancer that begins in cells that become melanocytes, which are specialized cells that make melanin (the pigment that gives skin its color). Most melanomas form on the skin, but melanomas can also form in other pigmented tissues, such as the eye (National Cancer Institute, 2014).

1.5.7 Brain and Spinal Cord Tumors

There are different types of brain and spinal cord tumors. These tumors are named based on the type of cell in which they formed and where the tumor first formed in the central nervous system. For example, an astrocytic tumor begins in star-shaped brain cells called astrocytes, which help keep nerve cells healthy. Brain tumors can be benign (not cancer) or malignant (cancer) (National Cancer Institute,2014).

1.5.8 Other Types of Tumors

Germ Cell Tumors

Germ cell tumors are a type of tumor that begins in the cells that give rise to sperm or eggs. These tumors can occur almost anywhere in the body and can be either benign or malignant.

Neuroendocrine Tumors

Neuroendocrine tumors form from cells that release hormones into the blood in response to a signal from the nervous system. These tumors, which may make higher-than-normal amounts of hormones, can cause many different symptoms. Neuroendocrine tumors may be benign or malignant.

Carcinoid Tumors

Carcinoid tumors are a type of neuroendocrine tumor. They are slow-growing tumors that are usually found in the gastrointestinal system (most often in the rectum and small intestine). Carcinoid tumors may spread to the liver or other sites in the body, and they may secrete substances such as serotonin or prostaglandins, causing carcinoid syndrome (National Cancer Institute, 2014).

1.6 Risk Factor

1.6.1 Gender

Simply being a woman is the main risk factor for developing breast cancer. Men can develop breast cancer, but this disease is about 100 times more common among women than men. This is probably because men have less of the female hormones estrogen and progesterone, which can promote breast cancer cell growth (National Cancer Institute, 2012).

1.6.2 Aging

Risk of developing breast cancer increases as you get older. About 1 out of 8 invasive breast cancers are found in women younger than 45, while about 2 of 3 invasive breast cancers are found in women age 55 or older (National Cancer Institute, 2012).

1.6.3 Genetic alterations (changes)

Inherited changes in certain genes (including BRCA1, BRCA2, and others) increase the risk of breast cancer. These changes are estimated to account for no more than about 10 percent of all breast cancers. However, women who carry changes in these genes have a much higher risk of breast cancer than women who do not carry these changes (National Cancer Institute, 2012).

1.6.4 Mammographic breast density

The glandular (milk-producing) and connective tissue of the breast are mammographically dense—that is, they appear white on a mammogram. In contrast, fatty tissue of the breast is not mammographically dense and appears dark. Women who have a high percentage of breast tissue that appears dense on a mammogram have a higher risk of breast cancer than women of similar age who have little or no dense breast tissue. In general, younger women have denser breasts than older women. As a woman ages, the amount of glandular tissue normally decreases and the amount of fatty tissue increases. Abnormalities, such as tumors, in dense breasts can be more difficult to detect on a mammogram because tumors often also appear white (National Cancer Institute, 2012).

1.6.5 Family history

A woman's chance of developing breast cancer increases if her mother, sister, and/or daughter have been diagnosed with the disease, especially if they were diagnosed before age 50. Having a close male blood relative with breast cancer also increases a woman's risk of developing the disease (National Cancer Institute, 2012).

1.6.6 Personal history of breast cancer

Women had breast cancer are more likely to develop a second breast cancer (National Cancer Institute, 2012).

1.6.7 Certain breast changes found on biopsy

Looking at breast tissue under a microscope allows doctors to determine whether a suspicious finding (one detected by a mammogram, for example) represents cancer or another type of breast change. Most breast changes turn out not to be cancer, but some may increase the risk of developing breast cancer. Changes that are associated with an increased risk of breast cancer include atypical hyperplasia (a noncancerous condition in which cells have abnormal features and are increased in number), lobular carcinoma in situ (LCIS) (abnormal cells are found in the lobules of the breast), and ductal carcinoma in situ (DCIS; abnormal cells are found in the lining of breast ducts). Because some cases of DCIS will eventually become cancer, this type of breast change is actively treated. Women with

atypical hyperplasia or LCIS are usually monitored carefully and not actively treated. In addition, women who have had two or more breast biopsies for other noncancerous conditions also have an increased risk of developing breast cancer. This increased risk is due to the conditions that led to the biopsies and not to the biopsy procedures themselves (National Cancer Institute, 2012).

1.6.8 Alcohol

Studies indicate that the more alcohol a woman drinks, the greater her risk of breast cancer (National Cancer Institute, 2012).

1.6.9 Reproductive and menstrual history

Women who had their first menstrual period before age 12 or who went through menopause after age 55 have an increased risk of developing breast cancer. Women who had their first full-term pregnancy after age 30 or who have never had a full-term pregnancy are also at increased risk of breast cancer (National Cancer Institute, 2012).

1.6.11 Long-term use of menopausal hormone therapy

Women who have combined estrogen and progestin menopausal hormone therapy for more than 5 years have an increased chance of developing breast cancer (National Cancer Institute, 2012).

1.6.11.1 DES (diethylstilbestrol)

The drug DES was given to some pregnant women in the United States between 1940 and 1971 to prevent miscarriage. Women who took DES during pregnancy have a slightly increased risk of breast cancer. Women who were exposed to DES in utero—that is, whose mothers took DES while they were pregnant—may have a slightly increased risk of breast cancer after age 40 (National Cancer Institute, 2012).

1.6.11.2 Body weight

Studies have found that among postmenopausal women who have not used menopausal hormone therapy, the chance of getting breast cancer is higher in women who are overweight or obese than in women of a healthy weight (National Cancer Institute, 2012).

1.6.11.3 Physical activity level

Women are physically inactive throughout life may have an increased risk of breast cancer (National Cancer Institute, 2012).

1.6.11.4 Race

In the United States, breast cancer is diagnosed more often in white women than in African American/black, Hispanic/Latina, Asian/Pacific Islander, or American Indian/Alaska Native women (National Cancer Institute, 2012).

1.7 Signs and Symptoms of Breast Cancer

The most common symptom of breast cancer is a new lump or mass. A painless, hard mass that has irregular edges is more likely to be cancerous, but breast cancers can be tender, soft, or rounded. They can even be painful. For this reason, it is important to have any new breast mass or lump or breast change checked by a health care professional experienced in diagnosing breast diseases (American Cancer Society, 2013).

Other possible signs of breast cancer include:

- Swelling of all or part of a breast (even if no distinct lump is felt)
- Skin irritation or dimpling
- Nipple retraction (turning inward)
- Redness, scaliness, or thickening of the nipple or breast skin
- Nipple discharge (other than breast milk) (American Cancer Society, 2013).
- Rashes on or around the nipple
- Pain or discomfort in the breast or armpit that is not related to periods
- Change in the size or shape of the breast (American Cancer Society, 2013).

1.8 Diagnosis of Breast Cancer

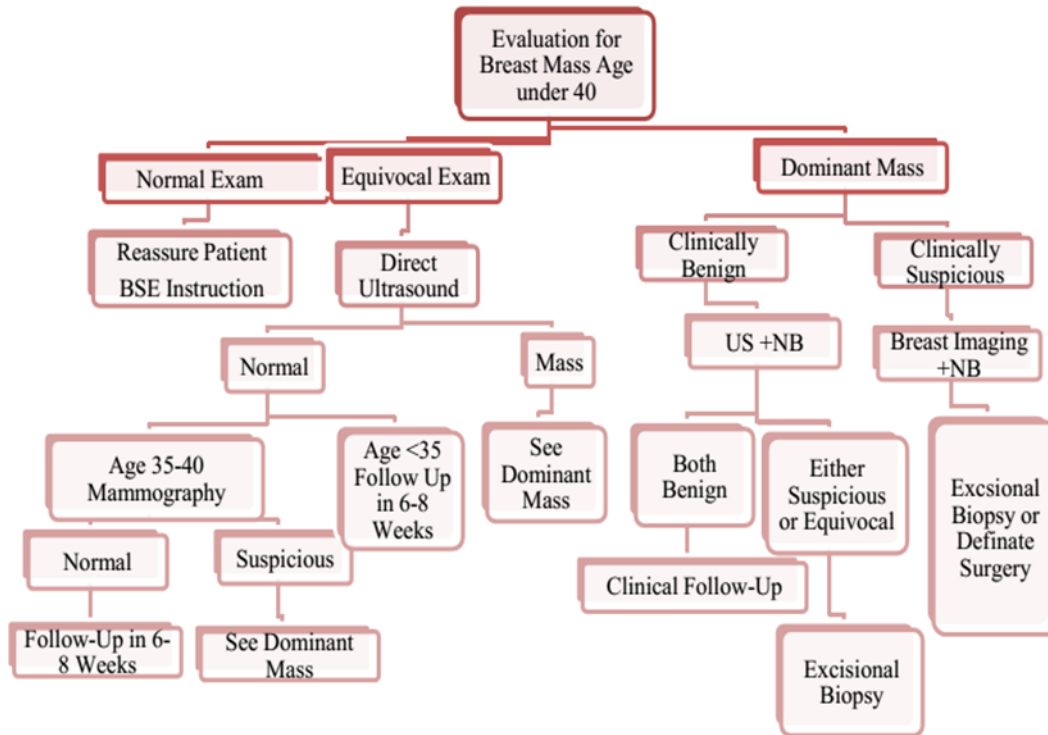


Figure 1.1: Management of a woman younger than 40 years with the complaint of a breast mass. US= Ultrasound, NB= Needle Biopsy (core/fine needle aspiration), BSE= Breast Self Exam (Singlestory and Connelly, 2006).

1.8.1 Breast Cancer Self Examination

Breast self-exam (BSE) is a step-by-step approach that a woman can use to look at and feel her breasts. BSE seemed promising when it was first introduced, however, studies have shown it does not offer the early detection and survival benefits of other screening tests. So, BSE is not recommended as a screening tool for breast cancer .

A meta-analysis combined the results of the two largest randomized controlled trials on breast self-exam. It found no difference in breast cancer survival rates between women who did routine breast self-exams and those who did not . And, women who did breast self-exams

had more false positive results, leading to nearly twice as many biopsies with benign (not cancer) results as women who did not do breast self-exams (Susan, 2014).

1.8.2 Clinical Breast Exam

Clinical Breast Exam (CBE) is a complement to mammograms and an opportunity for women and their doctor or nurse to discuss changes in their breasts, early detection testing, and factors in the woman's history that might make her more likely to have breast cancer .

60% of victims now survive due to CBE & mammography (Dehn &Asprey, 2007)

The purpose to perform the clinical breast exam is to:

- to detect a lump or change in the appearance of the breast that may indicate breast cancer
- to evaluate other breast conditions that may require medical attention, such as mastitis (Bickley *et al*, 2008).

The American Cancer Society recommend

- CBE every 3 years between menarche & 40 years.
- Annually form 40 years onwards.
- Yearly if have a strong family history from a younger age (Elmore, 2005).

1.8.3 Mammography

Mammography (ma-MAH-gruh-fee) is a screening tool that uses X-rays to create images of the breast. These images, called mammograms (MAM-o-grams), are used to find early signs of breast cancer such as a dense mass or clusters of calcium (microcalcifications).

Mammography is the best screening tool for breast cancer used today. It can find cancers at an early stage, when they are small (too small to be felt) and the chances of survival are highest (Susan, 2014).

Mammography is useful for finding early changes in the breast, when it may be difficult to feel a lump. It isn't as helpful in younger women though. When age under 35, specialist is likely to suggest ultrasound instead of a mammogram. Mammography is possible in women who have had breast implants but may take a little longer.

Mammography can be uncomfortable because the breasts are put between two metal plates and a little pressure is applied. But most women describe this as mild to moderate discomfort. It only lasts a few minutes. The pressure doesn't harm the breasts (Cancer Research UK, 2014).

1.8.4 Needle aspiration

Everyone may hear this called fine needle aspiration cytology or FNAC. The doctor uses a fine needle and syringe to take a sample of cells from the breast lump. They may also use this test to drain fluid from a benign cyst (Cancer Research UK, 2014).

1.8.5 Needle biopsy

Needle biopsy is also called a core biopsy or Tru Cut biopsy. Usually have this test under a local anaesthetic. The anaesthetic numbs the area and allows the doctor to take a core of tissue from the lump using a needle that is the same thickness as a pencil lead. In this type of biopsy the pathologist can see the cells in place within the piece of breast tissue that has been removed. So it is possible to tell a non invasive cancer (DCIS) from invasive breast cancer with this test. It can also show how abnormal the cancer cells are (the grade) and whether they have receptors for hormones or particular treatments.

Sometimes anyone may have this test while lying on your front or during a mammogram (Cancer Research UK, 2014).

1.8.6 Vacuum biopsy

After giving a local anaesthetic, the surgeon makes a small cut in your breast tissue. Guided by an ultrasound or X-ray, the surgeon uses a small vacuum assisted probe to take a biopsy from the suspicious area. This type of biopsy removes a slightly larger sample of breast tissue

than a needle biopsy. It can sometimes cause quite a lot of bruising. It is sometimes called Mammotome biopsy or or MIBB, which stands for Minimally Invasive Breast Biopsy (Cancer Research UK, 2014).

1.8.7 Punch biopsy

A punch biopsy is when the doctor removes a small circle of skin tissue to biopsy. Patient might have this type of biopsy if doctor thinks you could have inflammatory breast cancer or Paget's disease of the nipple (Cancer Research UK, 2014).

1.8.8 Excision biopsy (surgical)

Excision biopsy is also called a surgical biopsy. In this biopsy, patient have a minor operation to remove the whole lump under local anaesthetic or general anaesthetic. Many hospitals do this type of biopsy as a day case. In others, may need to stay in hospital overnight (Cancer Research UK, 2014).

1.8.9 Wire guided biopsy

A wire guided biopsy is also called a wire localisation. Doctors usually use this technique if patient have calcium specks showing up on your mammogram, but no clear lump. In these cases, the surgeon can't really see or feel which area needs to be removed. So during a mammogram or ultrasound, the doctor puts a fine wire into the area containing the calcium specks. The doctor makes sure the tip of the wire is right in the centre of the abnormal area and then secures the wire firmly.

The wire stays in until patients have patient's biopsy, which is usually the same day but may be the next day. Surgeon knows that where the wire ends is where they need to take a biopsy of the tissue (Cancer Research UK, 2014).

1.9 Treatment of Breast Cancer

Different types of treatment are available for patients with breast cancer. Some treatments are standard (the currently used treatment), and some are being tested in clinical trials. A

treatment clinical trial is a research study meant to help improve current treatments or obtain information on new treatments for patients with cancer. When clinical trials show that a new treatment is better than the standard treatment, the new treatment may become the standard treatment. Patients may want to think about taking part in a clinical trial. Some clinical trials are open only to patients who have not started treatment (National Cancer Institute, 2014).

Six types of standard treatment are used:

1.9.1 Surgery

Most patients with breast cancer have surgery to remove the cancer from the breast. Some of the lymph nodes under the arm are usually taken out and looked at under a microscope to see if they contain cancer cells.

Breast-conserving surgery, an operation to remove the cancer but not the breast itself, includes the following:

Lumpectomy: Surgery to remove a tumor (lump) and a small amount of normal tissue around it (National Cancer Institute, 2014).

Partial mastectomy: Surgery to remove the part of the breast that has cancer and some normal tissue around it. The lining over the chest muscles below the cancer may also be removed. This procedure is also called a segmental mastectomy (National Cancer Institute, 2014).

Patients who are treated with breast-conserving surgery may also have some of the lymph nodes under the arm removed for biopsy. This procedure is called lymph node dissection. It may be done at the same time as the breast-conserving surgery or after. Lymph node dissection is done through a separate incision (National Cancer Institute, 2014).

Other types of surgery include the following:

Total mastectomy

Surgery to remove the whole breast that has cancer. This procedure is also called a simple mastectomy. Some of the lymph nodes under the arm may be removed for biopsy at the same

time as the breast surgery or after. This is done through a separate incision (National Cancer Institute, 2014).

Modified radical mastectomy

Surgery to remove the whole breast that has cancer, many of the lymph nodes under the arm, the lining over the chest muscles, and sometimes, part of the chest wall muscles.

Chemotherapy may be given before surgery to remove the tumor. When given before surgery, chemotherapy will shrink the tumor and reduce the amount of tissue that needs to be removed during surgery. Treatment given before surgery is called neoadjuvant therapy.

Even if the doctor removes all the cancer that can be seen at the time of the surgery, some patients may be given radiation therapy, chemotherapy, or hormone therapy after surgery to kill any cancer cells that are left. Treatment given after the surgery, to lower the risk that the cancer will come back, is called adjuvant therapy (National Cancer Institute, 2014).

Sentinel lymph node biopsy followed by surgery

Sentinel lymph node biopsy is the removal of the sentinel lymph node during surgery. The sentinel lymph node is the first lymph node to receive lymphatic drainage from a tumor. It is the first lymph node the cancer is likely to spread to from the tumor. A radioactive substance and/or blue dye is injected near the tumor. The substance or dye flows through the lymph ducts to the lymph nodes. The first lymph node to receive the substance or dye is removed. A pathologist views the tissue under a microscope to look for cancer cells. If cancer cells are not found, it may not be necessary to remove more lymph nodes. After the sentinel lymph node biopsy, the surgeon removes the tumor (breast-conserving surgery or mastectomy) (National Cancer Institute, 2014).

1.9.2 Radiation therapy

Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells or keep them from growing. There are two types of radiation therapy. External radiation therapy uses a machine outside the body to send radiation toward the cancer. Internal radiation therapy uses a radioactive substance sealed in needles, seeds,

wires, or catheters that are placed directly into or near the cancer. The way the radiation therapy is given depends on the type and stage of the cancer being treated (National Cancer Institute, 2014).

1.9.3 Chemotherapy

Chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping them from dividing. When chemotherapy is taken by mouth or injected into a vein or muscle, the drugs enter the bloodstream and can reach cancer cells throughout the body (systemic chemotherapy). When chemotherapy is placed directly into the cerebrospinal fluid, an organ, or a body cavity such as the abdomen, the drugs mainly affect cancer cells in those areas (regional chemotherapy). The way the chemotherapy is given depends on the type and stage of the cancer being treated (National Cancer Institute, 2014).

1.9 4 Hormonal therapy

Hormone therapy is a cancer treatment that removes hormones or blocks their action and stops cancer cells from growing. Hormones are substances made by glands in the body and circulated in the bloodstream. Some hormones can cause certain cancers to grow. If tests show that the cancer cells have places where hormones can attach (receptors), drugs, surgery, or radiation therapy is used to reduce the production of hormones or block them from working. The hormone estrogen, which makes some breast cancers grow, is made mainly by the ovaries. Treatment to stop the ovaries from making estrogen is called ovarian ablation.

Hormone therapy with tamoxifen is often given to patients with early stages of breast cancer and those with metastatic breast cancer (cancer that has spread to other parts of the body). Hormone therapy with tamoxifen or estrogens can act on cells all over the body and may increase the chance of developing endometrial cancer. Women taking tamoxifen should have a pelvic exam every year to look for any signs of cancer. Any vaginal bleeding, other than menstrual bleeding, should be reported to a doctor as soon as possible.

Hormone therapy with an aromatase inhibitor is given to some postmenopausal women who have hormone-dependent breast cancer. Hormone-dependent breast cancer needs the hormone estrogen to grow. Aromatase inhibitors decrease the body's estrogen by blocking an enzyme called aromatase from turning androgen into estrogen.

For the treatment of early stage breast cancer, certain aromatase inhibitors may be used as adjuvant therapy instead of tamoxifen or after 2 or more years of tamoxifen. For the treatment of metastatic breast cancer, aromatase inhibitors are being tested in clinical trials to compare them to hormone therapy with tamoxifen (National Cancer Institute, 2014).

1.9.5 Targeted therapy

Targeted therapy is a type of treatment that uses drugs or other substances to identify and attack specific cancer cells without harming normal cells. Monoclonal antibodies and tyrosine kinase inhibitors are two types of targeted therapies used in the treatment of breast cancer. PARP inhibitors are a type of targeted therapy being studied for the treatment of triple-negative breast cancer.

Monoclonal antibody therapy is a cancer treatment that uses antibodies made in the laboratory, from a single type of immune system cell. These antibodies can identify substances on cancer cells or normal substances that may help cancer cells grow. The antibodies attach to the substances and kill the cancer cells, block their growth, or keep them from spreading. Monoclonal antibodies are given by infusion. They may be used alone or to carry drugs, toxins, or radioactive material directly to cancer cells. Monoclonal antibodies may be used in combination with chemotherapy as adjuvant therapy.

Trastuzumab is a monoclonal antibody that blocks the effects of the growth factor protein HER2, which sends growth signals to breast cancer cells. About one-fourth of patients with breast cancer have tumors that may be treated with trastuzumab combined with chemotherapy.

Pertuzumab is a monoclonal antibody that may be combined with trastuzumab and chemotherapy to treat breast cancer. It may be used to treat certain patients with HER2-

positive breast cancer that has metastasized (spread to other parts of the body). It may also be used as neoadjuvant therapy in certain patients with early-stage HER2-positive breast cancer.

Ado-trastuzumabemtansine is a monoclonal antibody linked to an anticancer drug. This is called an antibody-drug conjugate. It is used to treat HER2-positive breast cancer that has spread to other parts of the body or recurred (come back).

Tyrosine kinase inhibitors are targeted therapy drugs that block signals needed for tumors to grow. Tyrosine kinase inhibitors may be used with other anticancer drugs as adjuvant therapy.

Lapatinib is a tyrosine kinase inhibitor that blocks the effects of the HER2 protein and other proteins inside tumor cells. It may be used with other drugs to treat patients with HER2-positive breast cancer that has progressed after treatment with trastuzumab.

PARP inhibitors are a type of targeted therapy that block DNA repair and may cause cancer cells to die. PARP inhibitor therapy is being studied for the treatment of triple-negative breast cancer (National Cancer Institute, 2014).

1.10 Reduce the risk of Breast Cancer

While all women are at risk for breast cancer, particularly as they get older, there are basic strategies for reducing the chances that you will get the disease – or increasing the likelihood that if you do develop breast cancer, it will be detected at an early stage when treatment is likely to be successful. Because each woman has her own set of risk factors, specific strategies may differ: For example, a woman with an inherited mutation in one of the BRCA genes has significantly greater risk than a woman with a direct family history of breast cancer but no inherited mutation, or a woman found to have atypia or LCIS on a biopsy. But for all women, including those with no known risk factors, these minimum steps can help to reduce the risk:

Perform breast self-examination regularly beginning at age 20, at the same time each month. The best time for a self-examination is 7-10 days after the onset of menstrual period.

Obtain a physical breast exam by a physician or other health care provider every year starting at age 40 (Cedars and Sinai, 2015).

1.10.1 Weight, Exercise, and Breast Cancer Risk

Being overweight or obese increases breast cancer risk, particularly after menopause. The reason is that excess fat can increase the body's estrogen levels – in fact, it is the main source of estrogen once the ovaries stop producing the hormone in postmenopausal women – and estrogen can stimulate the growth of breast cancer cells. Studies have shown that women who have gone through menopause and are obese have about a 30% increased risk of developing breast cancer. Significant weight gain after menopause (more than 22 pounds) increases the breast cancer risk by 18%.

Height and weight are used to calculate body mass index (BMI). When patient's BMI is between 18 and 24.9. A BMI between 25 and 29.9 is considered overweight; if BMI is higher than 30, you are classified as obese.

Fortunately, both exercise and weight loss for women who are overweight or obese have been shown to lower the breast cancer risk. Obese women who have gone through menopause and are able to lose at least 22 pounds and keep the weight off can lower their breast cancer risk by 57%. Most studies also show that vigorous physical activity – such as jogging for 45-60 minutes, five days a week or more – decreases breast cancer risk slightly. Regular less-strenuous physical activity, such as walking, may also lower the breast cancer risk (Cedars and Sinai, 2015).

1.10.2 Diet and Breast Cancer Risk

The link between the foods we eat and breast cancer has been difficult to determine. Some studies have suggested that women who eat more fruits and vegetables (five or more servings a day) and foods that are low in saturated fat have a slightly lower risk of developing breast cancer than those who eat fewer fruits and vegetables and more foods that are high in saturated fat. Specifically, the natural vitamin antioxidants found in fruits and vegetables may decrease the risk of cancer slightly.

On the other hand, there is no evidence that taking vitamin supplements lowers cancer risk. This includes vitamin D and calcium supplements, although a few studies have suggested that women who have the lowest blood levels of vitamin D may be at slightly increased risk of developing breast cancer. Also unproven is the link between eating more tofu and foods containing soy protein – which may have some estrogen-like effects – and breast cancer risk. Some have thought green tea might reduce breast cancer risk, but this has not been proven. Drinking too much alcohol, on the other hand, has been shown to increase breast cancer risk slightly.

Because no special diet or foods have been proven to reduce the risk of breast cancer, we recommend that you eat moderate amounts of a variety of different foods to maintain a healthy weight, and limit the amount of alcohol you drink. For more information on eating a healthy diet, consult your health care provider and the U.S. Department of Agriculture's Dietary Guidelines for America (Cedars and Sinai, 2015).

1.10.3 Alcohol and Breast Cancer Risk

Studies suggest that consuming an average of more than one alcoholic beverage a day increases the risk of breast cancer, with the risk growing with the amount of alcohol consumed. One drink is defined as 10 grams of alcohol, which typically means a 12-ounce beer, a four-ounce glass of wine, or a shot (1.25 ounces) of hard liquor or spirits. With each drink you consume in excess of seven per week, risk increases by about 9%. Thus, women who are currently exceeding the seven-drinks-a-week threshold can lower their risk by reducing their alcohol intake (Cedars and Sinai, 2015).

1.11 Global Epidemiology of breast cancer

Breast cancer is the most common cancer in women worldwide, with nearly 1.7 million new cases diagnosed in 2012.

Breast cancer is the most common cancer in women worldwide, with nearly 1.7 million new cases diagnosed in 2012 (second most common cancer overall). This represents about 12% of all new cancer cases and 25% of all cancers in women.

Breast cancer is hormone related, and the factors that modify the risk of this cancer when diagnosed premenopausally and when diagnosed (much more commonly) postmenopausally are not the same.

The Continuous Update Project Panel judged that for premenopausal breast cancer there was convincing evidence that consuming alcoholic drinks increases the risk of this cancer and lactation protects against it. Adult attained height and greater birth weight are probably causes of this cancer and body fatness probably protects against this cancer.

The Panel judged that for postmenopausal breast cancer there was convincing evidence that consuming alcoholic drinks, body fatness and adult attained height increase the risk of this cancer and lactation protects against it. Abdominal fatness and adult weight gain are probably causes of this cancer and physical activity probably protects against it (World Cancer Research Fund International, 2013).

1.11.1 Prevention of breast cancer

Preventability estimates show that about 22% of cases of breast cancer in Brazil can be prevented by not drinking alcohol, being physically active and maintaining a healthy weight.

The countries with the top 20 highest incidence of breast cancer in 2012 are given in the table below.

- Belgium had the highest rate of breast cancer, followed by Denmark and France.
- Slightly more cases of breast cancer were diagnosed in less developed countries (53%).
- The highest incidence of breast cancer was in Northern America and Oceania; and the lowest incidence in Asia and Africa (World Cancer Research Fund International, 2013).

1.11.2 Breast cancer survival

The top 20 countries with the most breast cancer survivors are provided in the table below. The statistics are for 2012 and show the number of breast cancer survivors who were alive

five years after diagnosis. The order in which the countries are ranked is based on the number of breast cancer survivors per 100,000 adult women in each country.

- Belgium had the highest proportion of breast cancer survivors still alive five years after their diagnosis, followed by Denmark and France.
- In more developed countries, there were 3.2 million women who had survived breast cancer for at least 5 years; the figure for less developed countries was 3.0 million.
- The highest proportion of breast cancer survivors still alive five years after their diagnosis was in Northern America and Europe; and the lowest incidence in Africa and Asia.

(World Cancer Research Fund International, 2013)

1.12 Breast cancer in Bangladesh

Bangladesh is facing a high burden of breast cancer disease. It is the 2nd leading cancer in women after cervical carcinoma (Rahim, 1986). Late presentation with advance stage is the common feature of breast cancer patient in Bangladesh, when it is extremely difficult to manage the deadly disease. It is easily understandable that the incidence and mortality of breast cancer is growing at a fast rate. But as we do not have any cancer registry along with relevant data it is difficult to say the exact situation in Bangladesh (Raffy *et al*, 2006).

A survey done in 2001 showed that 22000 women were affected every year by breast cancer and 17000 (77%) of them died. However this figure is far more less than the real figure, simply because very few cases is diagnosed and reported. Many patients die with unnoticed cancer. There may be many reasons behind this, but studies in many other countries show that poor or no knowledge, ignorance, lack of awareness and misbelieve is one of the leading cause of this fastest silent killer. In Bangladesh where more than 80% of the rural women is illiterate, brought up in a conservative Muslim value or old traditional customs, it is not very easy to visit doctor or just informed the guardian either her husband or parents that she got a breast problem. Society is not very friendly and open to discuss about reproductive or and sexually transmitted diseases especially among women. It is clearly understandable why late

stage breast cancer is the hall mark presentation in Bangladesh. Health seeking behavior is one of the important aspects of late presentation. Several studies shows that misconception and disbelieve is a significant factor for delayed health seeking behavior in Bangladesh where educational level is low and more than 40% people live below one dollar per day. Further, women are not self dependent and cultural norms and religious values are unfavorable(Raffy *et al*, 2006).More over government support is limited there delayed health seeking behavior is quite apparent. Furthermore, a mother or a woman is the sole care taker of the well being of their family and their children, so they can pay less attention to their own health. Most of the women are afraid of cancer. There is a general feeling of hopeless and helpless if they got cancer because they believe this is non curable and there is not much they can do until wait for death. In Bangladesh, still communicable diseases, infectious diseases and chronic diseases is a major health issue. Government, non government organization and International partners all are giving their utmost effort to cope with these diseases. Cancer and particularly breast cancer is on the bottom of their priority list.

That's why there is no much infrastructure and facilities to fight against breast cancer. One Cancer research and treatment institute exists, but it is very limited in contrast to the growing needs. Due to lack of availability of diagnostic tools, cancer chemotherapy agent, modern radiation equipment and palliative care and rehabilitation, the existing institute is not functioning properly (Raffy *et al*, 2006).

2.1 Knowledge, Attitude and Practice Regarding Breast Cancer Among Medical Students of Bangladesh.

Breast cancer in women is a major health burden both in developed and developing countries. It is the second leading cause of death in women worldwide as well as in Bangladesh. Recent global cancer statistics shows that global incidence is rising at a faster rate especially in developing countries like Bangladesh. But still breast cancer is not on the top of the priority list for the policy maker's donors and health professionals. But the prevailing situation can be more devastated if early attention is not given. To concentrate on this fast growing health problem was need to know the overall situation concerning incidence, prevalence, risk group, diagnostic and treatment status survival and mortality rate first to make a comprehensive policy to cope with breast cancer situation in Bangladesh. This study population is not only the health professionals but also represent the higher educated population of Bangladesh. Their level of knowledge will reflect or give us an idea about the mass general lower educated population in Bangladesh. The proposed study will be conducted during February 2008 to May 2008 on 3rd year to 5th year medical students of different medical colleges of Bangladesh through a cross-sectional study. (Muhammad, 2007).

2.2 To Determine The Level Of Knowledge Regarding Breast Cancer And To Increase Awareness About Breast Cancer Screening Practices Among A Group Of Women In A Tertiary Care Hospital In Mumbai, India

Breast cancer is responsible for 10.4% of the global burden of cancers in women and half of this occurs in developing countries. In the sphere of cancer control, much would be achieved if breast cancer were to be detected early. Since a large proportion of patients in India present with advanced disease, any down-staging due to early detection will considerably reduce treatment cost as well as morbidity even if mortality is unaffected. This can be achieved by breast health awareness and adherence to screening practices. The aims of this cross-sectional study were to determine the level of knowledge regarding breast cancer and to measure breast self-examination (BSE) performance in a group of 80 women aged 40 years

and above. Additionally we also intended to demonstrate the correct method of BSE performance to each woman included in our study individually and privately.

This was a cross sectional study conducted over a period of two months commencing on August 1st 2009 and ending on 30th September 2009. 80 women were interviewed by means of a structured questionnaire (after obtaining written informed consent) in the surgical outpatient department of the K.J.Somaiya Medical College, Sion, Mumbai. The questionnaire consisted of socio-demographic variables, breast cancer risk factors and protective factors and knowledge and practice of BSE. Further, attitude towards BSE was also evaluated. The data were analyzed by descriptive studies, chi square test and analysis of variance in order to find out the P value. The interview was followed by an interactive session where each woman was individually and privately educated on breast self-examination by the investigators themselves in the presence of a nurse (Ahuja and Chakrabarti, 2009).

2.3 Knowledge, Attitudes, and Practices Surrounding Breast Cancer and Screening in Female Teachers of Buraidah, Saudi Arabia

Breast cancer is by far the most frequent cancer of women. However the preventive measures for such problem are probably less than expected. The objectives of this study are to assess breast cancer knowledge and attitudes and factors associated with the practice of breast self examination (BSE) among female teachers of Saudi Arabia. Conducted a cross-sectional survey of teachers working in female schools in Buraidah, Saudi Arabia using a self-administered questionnaire to investigate participants' knowledge about the risk factors of breast cancer, their attitudes and screening behaviors. A sample of 376 female teachers was randomly selected. Participants lived in urban areas, and had an average age of 34.7 ± 5.4 years (Dandash and Mohaimeed, 2007).

2.4 Knowledge of breast cancer and its early detection measures among rural women in Akinyele Local Government Area, Ibadan, Nigeria.

Breast cancer tendency among rural women is increase very slowly. But in Nigeria rural women this tendency in increases rapidly. Data from 2 rural health districts in Ibadan, Oyo state of Nigeria, were collected through a structured questionnaire. Four hundred seven

women were randomly selected for the study. Results showed that 66.2% of the respondents considered that breast cancer is more severe than other forms of cancer. Respondents perception of risk of developing breast cancer was low, as 64.8% rated themselves 1, on a scale of 1 to 9 (where 1= does not perceive herself to have cancer; 9= very much perceives herself to have cancer). Respondents perceived cause of breast cancer included “putting money brassier” and attack from the enemy among others. None of the respondents identified early detection as an advantage of breast self examination. This study indicates that there is a need for an interventional study to enhance the awareness of breast cancer and its early detection measures among the rural population to influence early detection of breast cancer and subsequently reduce morbidity and mortality among them (Oluwatoin *et al*, 2006).

2.5 Korean women: Breast cancer knowledge, attitudes and behaviors.

Breast cancer knowledge among Korean people is very important. This research found that out of 194 American Asian Indians women only 40.78, 61.38 of women 40 and older and 70% of women 50 and older had a mammogram within the past 12 months. Hence the researcher found that majority of women have lack of knowledge regarding breast cancer and monthly breast self examination adherence was low (Sadller *et al*, 2001).

2.6 Awareness and practice of breast self examination among malaysian women with breast cancer

Breast self-examination (BSE) is a self-generated, non-invasive and non-irradiative method of breast cancer detection. This paper documents Malaysian women's awareness and practice of regular BSE as a potent breast cancer detection tool. A pre-test post-test questionnaire survey on women diagnosed with breast cancer (n=66) was conducted. Descriptive statistics and Chi-square tests were performed to correlate demographic variables, knowledge and regular practice of BSE. Findings showed that 80% of the breast cancer survivors self-detected the breast lumps, despite a high 85% of these women reporting they were never taught about BSE. More than 70% of the women maintained that lack of knowledge/skill on the proper practice of BSE was the key barrier to a more regular BSE practice. After an educational intervention on BSE and breast awareness, we found an increase report from

17% (at pre-test) to 67% (at post-test) of self reported monthly BSE practices. Provision of self-management education incorporating BSE, a readily available cheap method, should be introduced at primary care and breast clinics. This strategy promotes women's self-efficacy which contributes towards cancer control agenda in less resource available countries around Asia Pacific. Longer follow up may be crucial to examine the adherence to positive BSE behavior (Chew *et al*, 2011).

2.7 Breast cancer awareness and barriers to symptomatic presentation among women from different ethnic groups in East London

During 2001 to 2005, 1-year breast cancer survival was low in ethnically diverse East London. We hypothesised that this was due to low breast cancer awareness and barriers to symptomatic presentation, leading to late stage at diagnosis in women from ethnic minorities. Examined ethnic differences in breast cancer awareness and barriers to symptomatic presentation in East London. Carried out a population-based survey of 1515 women aged 30+ using the Cancer Research UK Breast Cancer Awareness Measure. We analysed the data using logistic regression adjusting for age group and level of deprivation (Forbes *et al*, 2011).

2.8 Breast Self-examination: Knowledge, Attitude, and Practice among Female Dental Students in Hyderabad City, India

The aim was to assess the knowledge, attitude, and practice (KAP) regarding breast self-examination (BSE) in a cohort of Indian female dental students. A cross-sectional descriptive questionnaire study was conducted on dental students at Panineeya Institute of Dental Sciences, Hyderabad, Andhra Pradesh, India. Data were analyzed using SPSS software (version 12). Chi-square test was used for analysis of categorical variables. Correlation was analyzed using Karl Pearson's correlation coefficient. The total scores for KAP were categorized into good and poor scores based on 70% cut-off point out of the total expected score for each. P-value of <0.05 was considered statistically significant (Doshi *et al*, 2012).

2.9 Breast cancer knowledge and awareness among university students in Angola

The high breast cancer mortality rate in Sub-Saharan Africa has been attributed to a lack of public awareness of the disease which often leads to late diagnosis of the disease. Little is known about the level of knowledge and awareness of breast cancer in Angola. Previous studies have shown that breast cancer awareness is higher among well-educated people. The goal of this study was to assess breast cancer knowledge and awareness among university students in Angola. A cross-sectional survey of university students using a self-administered questionnaire to investigate participants' awareness and knowledge of breast cancer. A total of 595 university students in medical and non-medical programs successfully completed the survey (Sambanje *et al*, 2012).

2.10 Knowledge and attitude of Saudi female students towards breast cancer: A cross-sectional study

In Saudi Arabia, females suffering from breast cancer often present late when their cancer has progressed to advanced stages. Hence the overall survival rate is low. Medical help-seeking behavior of females may be influenced by their awareness about breast cancer. Therefore, a cross-sectional study was designed to assess the knowledge, attitude and practices of university students towards breast cancer. One hundred and fifty females from a university in Saudi Arabia completed a questionnaire intended to provide their socio demographic information and knowledge, attitude and practices towards breast cancer. Data analysis was carried out using Statistical Package for the Social Sciences (SPSS) Version 19 (Rabia, 2014).

2.11 Breast Cancer Screening Awareness, Knowledge, and Practice among Arab Women in the United Arab Emirates: A Cross-Sectional Survey

Breast cancer screening can reduce morbidity and mortality and improve the survival rate for this malignancy. Low participation in screening programs has been attributable to many factors including lack of knowledge. The aim of this study was to assess breast cancer screening knowledge, attitudes and practices among women of screening age (≥ 40 years old)

in the city of Al Ain, United Arab Emirates (UAE). A cross-sectional survey was conducted in 2013 using the Breast Cancer Awareness Measure (CAM). Four out of twelve cultural and religious community centers in Al Ain city were randomly selected. Two hundred and forty seven women were interviewed. Chi Square test and regression analysis were used to analyze the data (Elobaid *et al*, 2014).

2.12 Awareness level and attitude towards breast cancer screening practices among female health workers in Esanland, Edo state, Nigeria

This study investigated breast cancer screening practices among female health workers in Esanland, Edo State. The study was descriptive and adopted the survey research design. The participants were 750 females from the five local government areas of Esanland, Edo State. The instrument used was a questionnaire, titled “Awareness, Attitude and Practice of Breast Cancer Screening Inventory” adapted from Akhigbe and Omuemu’s (2009) Breast Cancer Screening Questionnaire. Data were analysed using the descriptive statistics. The study found that over half (54.8%) of the respondents in the study area were not aware of breast cancer screening; the respondents (55.6%) had low knowledge of breast cancer screening; 67.3% of female health workers in Esanland had never been screened for breast cancer. The study recommended that, there should be interactive sessions between health workers and guidance counsellors, where new facts concerning breast cancer are discussed and ideas exchanged for the health benefit of the clients (Uhunmwagho *et al*, 2013).

2.13 Breast self-examination: knowledge, attitudes, and practices among female health care workers in Tehran, Iran.

The aim of their study was to examine the knowledge about breast cancer, attitudes towards BSE and its practice among a sample of 410 female health care workers from seven health centers. Haji and co workers used a purposed questionnaire and concluded that whereas 75% of the women knew about breast cancer prevalence and 63% claimed to know how to examine their breasts, only 6% of them practiced BSE monthly. The authors concluded that the respondents’ knowledge about breast cancer risk factors was not satisfactory. They also inferred that the practice of BSE was significantly associated with age, the level of education and a personal history of breast problems. Concluded that although 95% women claimed to

have heard about breast cancer, overall awareness was only 52%. Noted that women who were younger and more educated were more aware than older and uneducated women. BSE performance among women included in this study was also low with as few as 15% women being regular and 23% irregular performers. Overall their findings suggest that the knowledge and behaviours of female health workers concerning breast cancer was relatively poor and needs to be improved (Haji mahmoodi *et al*, 2002).

2.14 Assessing the level of breast cancer awareness among recently diagnosed patients in Ain Shams University Hospital

Breast cancer is the leading female malignancy among Egyptian women. The majority of Egyptian breast cancer patients present at late stages of the disease with a large tumor size compared to Western countries. Low breast cancer awareness, social and cultural factors were suggested to play crucial role in late presentation of breast cancer among Egyptians. The aim of our present study is to establish a questionnaire-based survey that can assess levels of breast cancer awareness among Egyptians. Patients enrolled were interviewed and answered 60 questions related to knowledge, symptoms, risk factors, prevention and management options of breast cancer. We evaluated our interactions with breast cancer patients and defined the level of awareness gained from education and culture of Egyptian women. Results described that Egyptian breast cancer patients lack knowledge about their illness and condition. The lowest levels of awareness were related to age, education and culture. Concluded that breast cancer public awareness and women education programs covering factors identified in our study is warranted among Egyptian population. Overview to assess breast cancer awareness among recently diagnosed breast cancer Egyptian patients. Among 289 interviewed breast cancer patients we enrolled 45 patients who fulfilled the study inclusion criteria. Participants were asked to answer a validated 60-item questionnaire that inquires about socio-demographic characteristics, knowledge of breast cancer symptoms, risk factors, symptoms, prevention, general management and willingness to participate in awareness campaigns. The average of interview time was about 45 min, depending on patient's age and education level. The mean age of included patients was 48.2 ± 10.19 years. Geographical distribution revealed that 66.7% patients were from Cairo and the rest were from other governorates, including Aswan, Sharqia, Mansora, Qena, Kalyobia, Elminya and

Sohag. Among interviewed patients 85% were non-working housewives, 42.2% of them were illiterate. Questions about knowledge of breast cancer revealed that 53.33% of patients knew an acquaintance with breast cancer; however, they spent a median time of 3 months to seek medical advice after recognizing the first symptom with a delay range between a month and 72 months. We found that 73% of the participants presented to a physician with the same first recognized symptom and 75.6% didn't think of cancer then as a possible diagnosis. Total breast cancer knowledge scores had an average of 13.3 (out of 35 knowledge points), with 93% of the patients recognizing “painless breast mass” as a breast cancer symptom and 44% only recognized the concept of breast self examination. Interestingly, 61.4% identified breastfeeding as a risk factor for breast cancer, 60% did not recognize mammography as an early detection method, and 57.7% agreed that clinical breast examination (CBE) is important for early detection. Regarding management, 75% said breast cancer was potentially curable and 60% said medical care could be helpful regardless the age of presentation. Egyptian breast cancer patients knew little about their condition. Less awareness was related to age and education level. Low knowledge of risk factors, early detection and management of breast cancer should be addressed by designing patient education programs, where less educated patients are supported by health care professionals to participate in the management of breast cancer. Moreover, we found that 67% and 97% of enrolled breast cancer patients were willing as well to participate in spreading awareness among their community and among their own families, respectively (Shinawi *et al*, 2013).

2.15 Breast cancer in Iran: need for greater women awareness of warning signs and effective screening methods

Breast cancer remains an important public health problem. This study aimed to investigate about female knowledge of breast cancer and self-reported practice of breast self-examination in Iran. This was a population-based survey carried out in Tehran, Iran. Data were collected via a structured questionnaire containing 15 questions on demographic status, history of personal and family breast problems, subjective knowledge about breast cancer covering its symptoms, the screening methods and practice of breast self-examination (BSE). A trained female nurse interviewed each respondent. Analysis included descriptive statistics and the Chi-squared test where necessary (Montazeri *et al*,2008).

2.16 Survey on breast feeding awareness among UNHS female respondents childbearing age,in San Francisco,USA.

Forty women of childbearing age completed the survey. All of the women were patients at UNHS (United Neighborhood Health Services) a Community Health Clinic serving Nashville, Tennessee and the surrounding area. . The majority of women, 34, self identified as non-Hispanic, Black or African-American. Two of the women self identified as Latino or Hispanic ethnicity, and both of these participants did not answer the question regarding race. Four of the women identified as non-Hispanic, White or Caucasian. In regard to age, three of the women were between the ages of 14 to 19; eighteen of the women were between the age of 20-30; seven of the women were between the ages of 31-40; 9 of the women were between the ages of 41-45; and three of the women were older than 45. One woman was currently pregnant. 28 of the women had children. Of the 28 women who were mothers, seven (25%) had breastfed at some point with a previous child. Of these women who had breastfed, two rated their satisfaction with their experience breastfeeding as “Very Satisfied;” two rated their satisfaction as “Satisfied;” one as “Dissatisfied;” and one as “Very Dissatisfied.” One woman did not rate her degree of satisfaction (Petta and Flores, 2014).

Significance of study

Breast cancer is the most common cancer in women both in the developed and less developed world. It is estimated that worldwide over 508 000 women died in 2011 due to breast cancer (WHO, 2013). Breast cancer is now the most common cancer among women in Bangladesh. Sixteen percent of the total cancer affected women in the country are victim to breast cancer. WHO ranked Bangladesh 2nd in terms of mortality rate of women in the country from breast cancer (The Daily Newspaper, 2010). Lack of awareness and early detection program in developing country is a main reason for escalating the mortality. For Bangladeshi women aged between 15-44 years, breast cancer has the highest rate of occurrence (WHO, 2013). A survey done in 2001 showed that 22000 women were affected every year by breast cancer and 17000 (77%) of them died. It is global concern and of important public health interest as it is one of the leading causes of morbidity and mortality (Rahim, 1986).

There are lots of risk factors that are associated in the development of breast cancer. They are family history of breast cancer, previous history of breast cancer, genetic reasons lack of breast feeding, higher level of certain hormones, obesity, alcohol consumption, radiation to chest or face before age 30 and menstrual history. There is different type of examination to identify the breast cancer. Breast self-exam, clinical breast exam and mammography are the option for diagnosis of breast cancer. Early diagnosis not only influence the better prognosis and long term survival, it is also associated with stage of cancer and mode of treatment. So, we should go for some awareness programme for early detection. Early campaign should be taken. Education and awareness alone may contribute in a favorable shift in the stage of breast cancer at presentation. Education can be achieved with very low costs, simple, and popular means, such as radio and television advertisement and programs.

Objective of study

The main objectives of this study were

- To find out the level of knowledge regarding Breast Cancer among Female respondents.
- To find out the knowledge of risk factors associated with Breast Cancer among them.
- To find out their habits that may influence the formation, early diagnosis and prevalence of Breast Cancer.

3.1 Type of study

Survey based study

3.2 Study area

The data was collected from different zones of Dhaka city particularly Uttar badda, South badda, khilgao, Banasree, Rampura, Khilkheta, banana, gulshan, mohammadpur, dhanmondi, jatra bari. Bashundhara r/a of Bangladesh.

3.3 Total Number of participants

Data was collected from 250 female population aged at least 20 years.

3.4 Inclusion Criteria of Patients

- Only female population
- Age includes from 20 to above

3.5 Exclusion Criteria

- * Male person
- * Female aged below 20 years
- * Unwilling to participate or unable to comply with protocol requirements

3.6 Procedure

- For collecting data, a questionnaire (annexure) was prepared according to required criteria.
- After collecting all the data, these data were set on the Microsoft Office Excel and filtered out according to the Age range, Site of living area, Educational qualification, Knowledge about Breast Cancer, Marital status, Family history, Breast feeding, Risk factor, Habitual pattern etc. So some graphical representations were found that is visually representation of the targeted subject.

4.1 Occupational Status

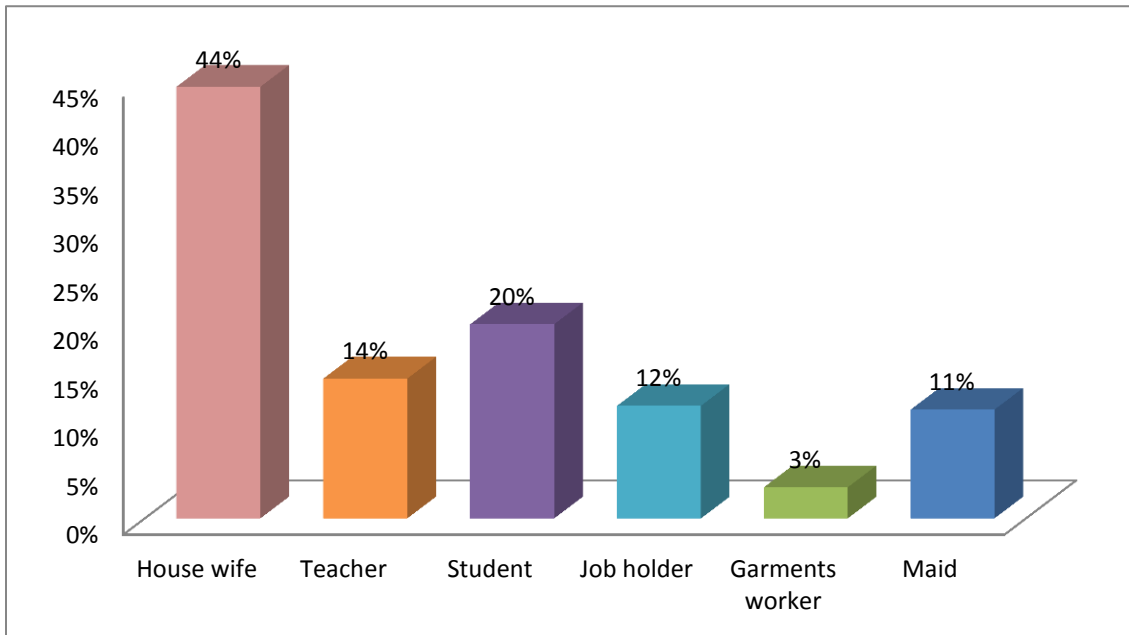


Figure 4.1: Occupational Status

Among all respondents majority participants were housewife (44%). Some were teacher (14%), student (20%), Job holder (12%), garments worker (3%) and maid (11%).

4.2 Age Distribution

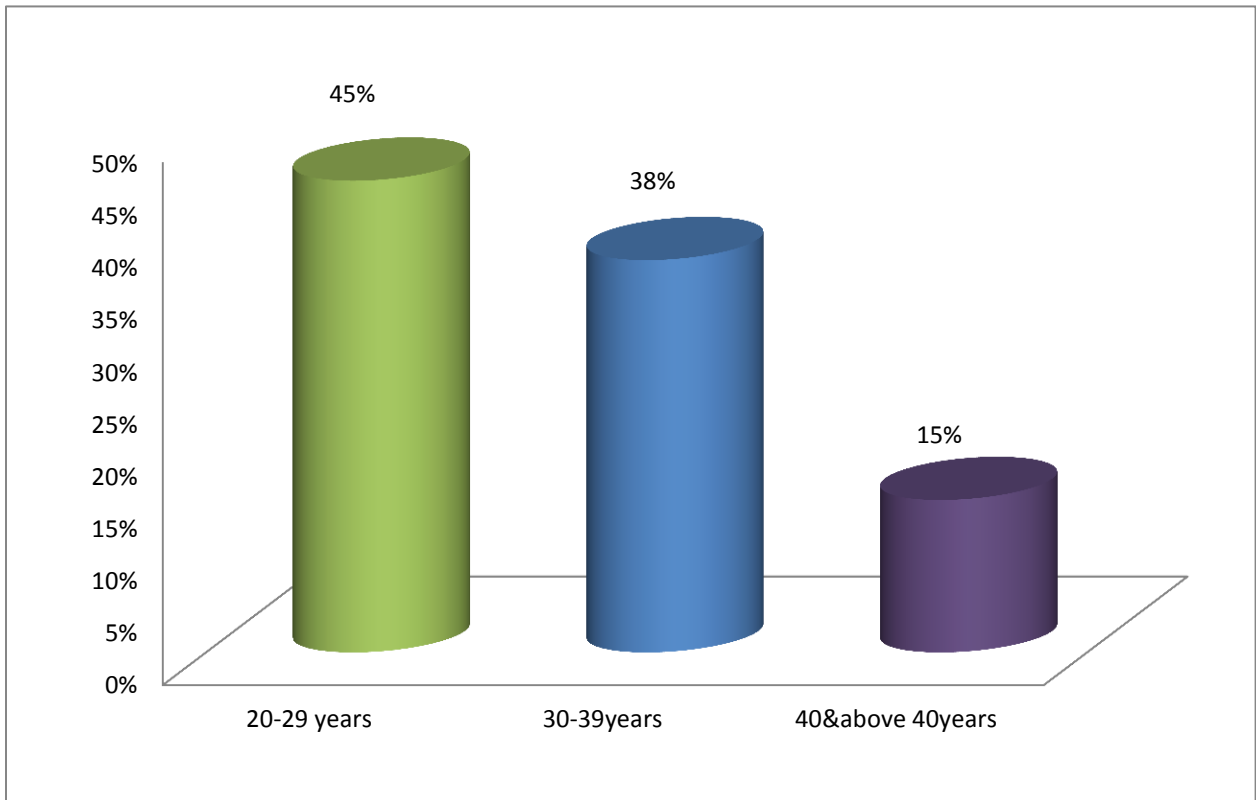


Figure 4.2: Age Distribution

Most of the respondents were aged between 20 to 29 years (45%). There were also subjects from 30 to 39 years (38%). On the other hand only 15% subjects were aged 40 years and above.

4.3 Educational qualification

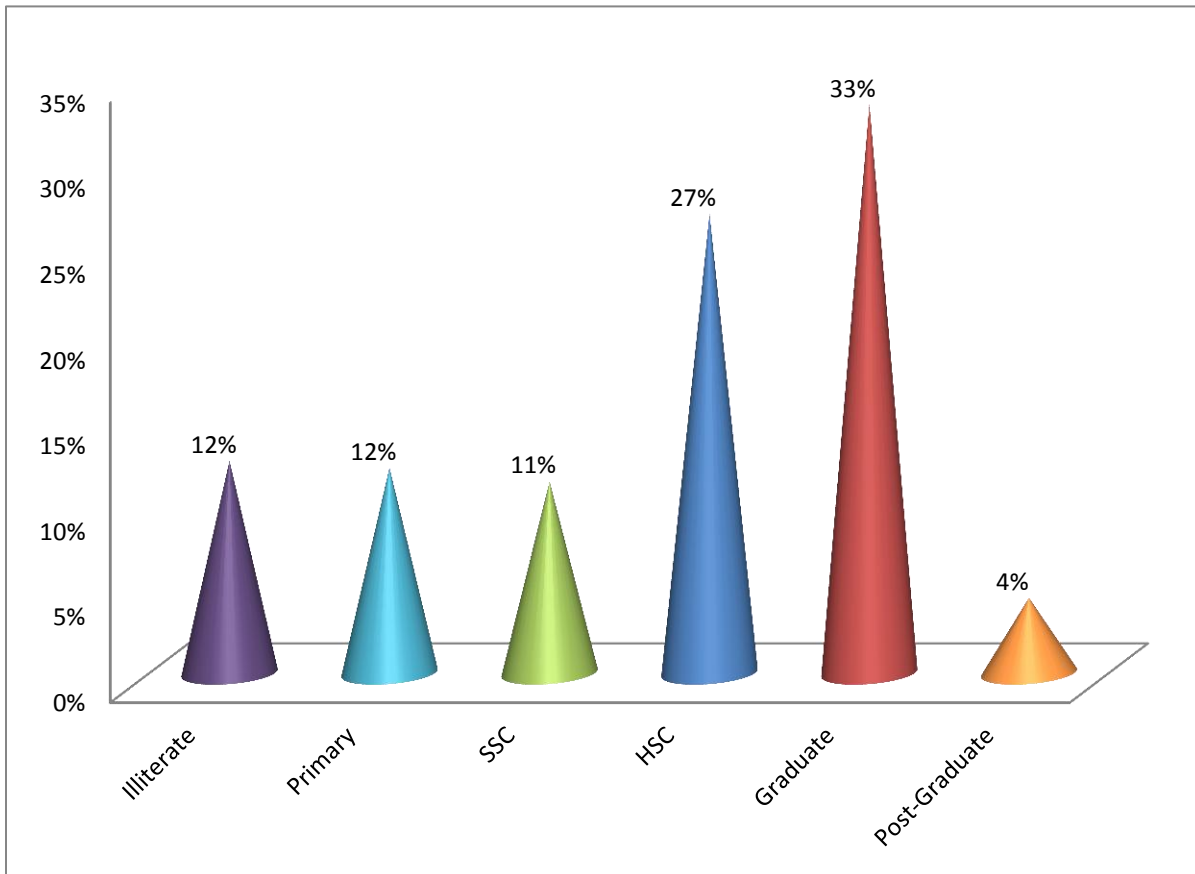


Figure 4.3: Educational qualification

Majority of the participants (33%) had educational qualification upto Graduate. About 12% completed primary education, 11% had passed SSC, 27% had passed HSC, 12% had completely illiterate and only 4% had been passed post-graduate education.

4.4 BMI status of breast cancer

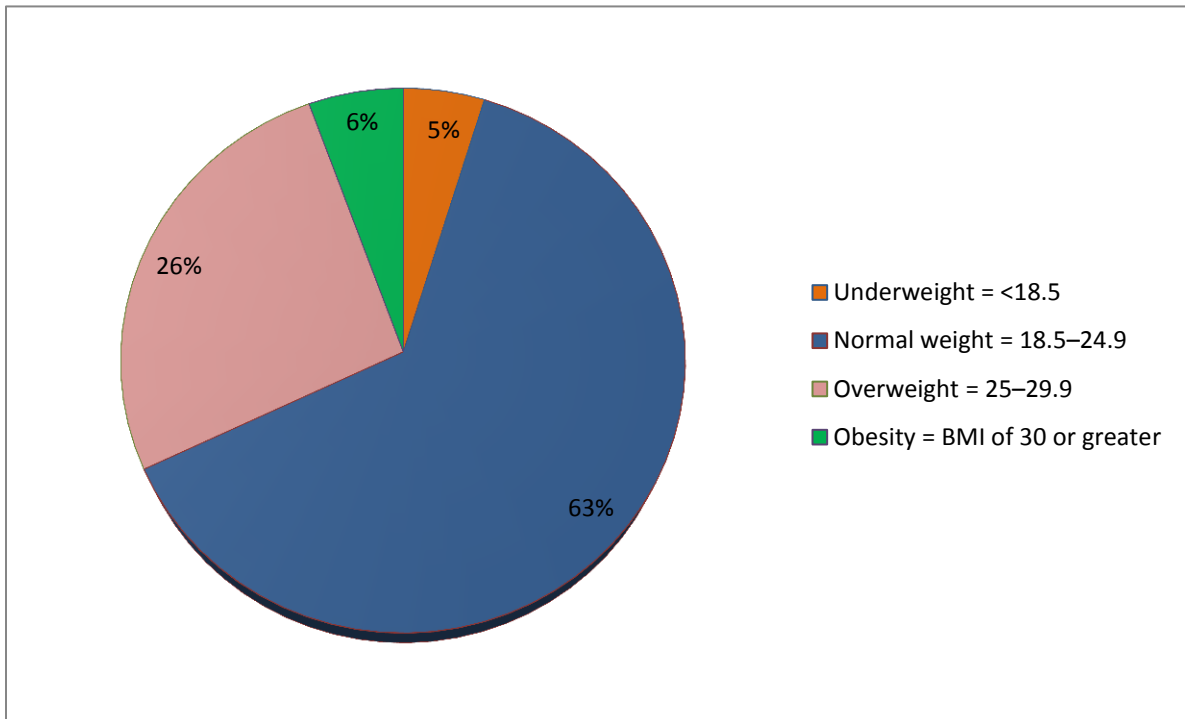


Figure 4.4: BMI status

The body mass index (BMI) is a measure of relative weight based on an individual's mass and height. It is defined as the individual's body mass divided by the square of their height with the value universally being given in units of kg/m^2 .

Table 4.1: Category according to BMI index (Assess body weight, 2015).

| Category | BMI index |
|-------------------------|-----------|
| Underweight | <19 |
| Normal (healthy weight) | 19-24 |
| Overweight | 24-30 |
| Obese | 30-40 |

There is a BMI graph from which it can be determined whether the respondent was underweight, normal weight, overweight or obese.

Among all the respondents, only 6% of the respondents were obese and 26% had overweight.

4.5 Marital status

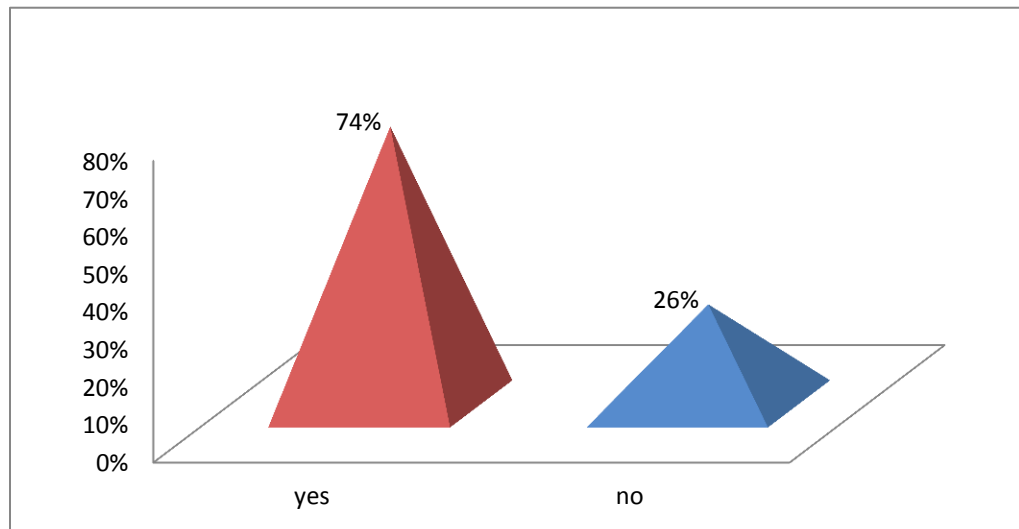


Figure 4.5: Marital status

Majority of the participants (74%) were married. Only few of them (26%) were unmarried.

4.6 Having children

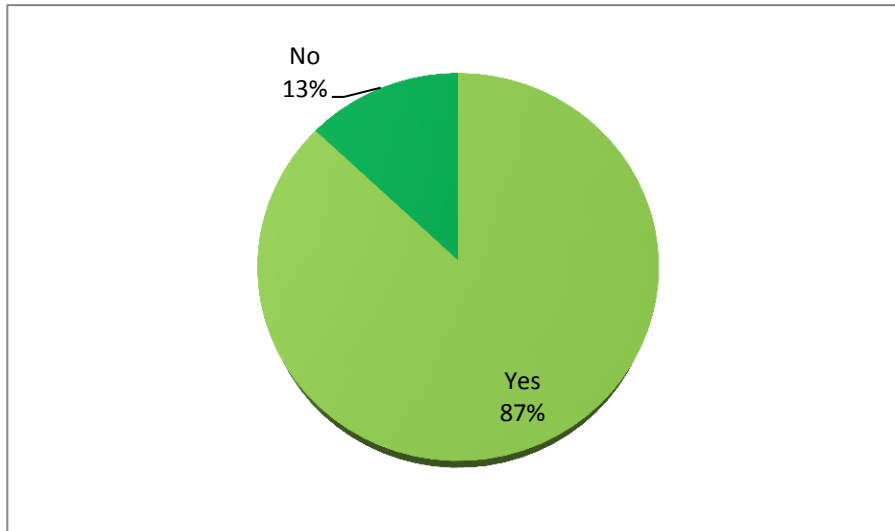


Figure 4.6: Having Children

Among all the married respondents, majority (87%) of them had children.

4.7 Number of children

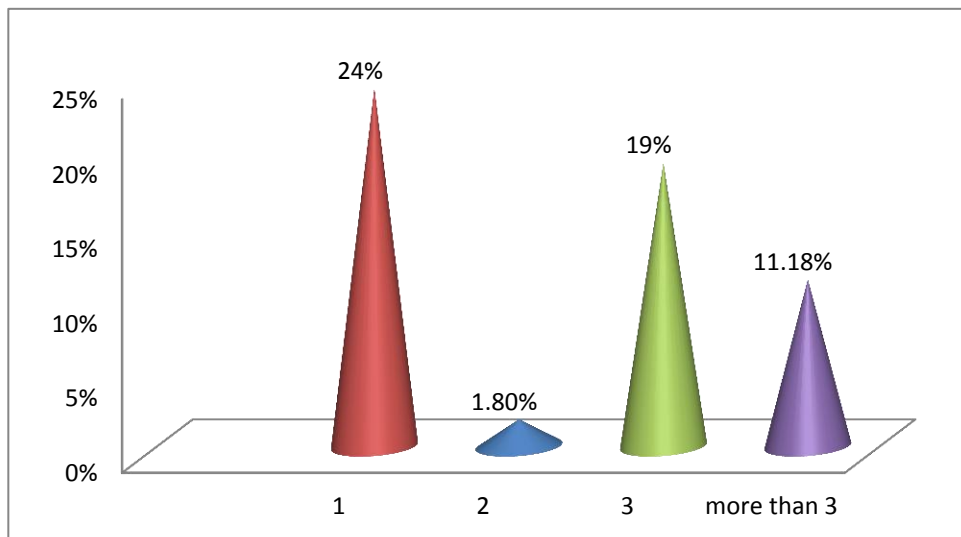


Figure 4.7: Number of children

Among all the married respondents, many of them had children of which most of the respondents had 1 child (24%), 1.8% had 2 children and more than 3 child (11.18%).

4.7 Brest feeding Time

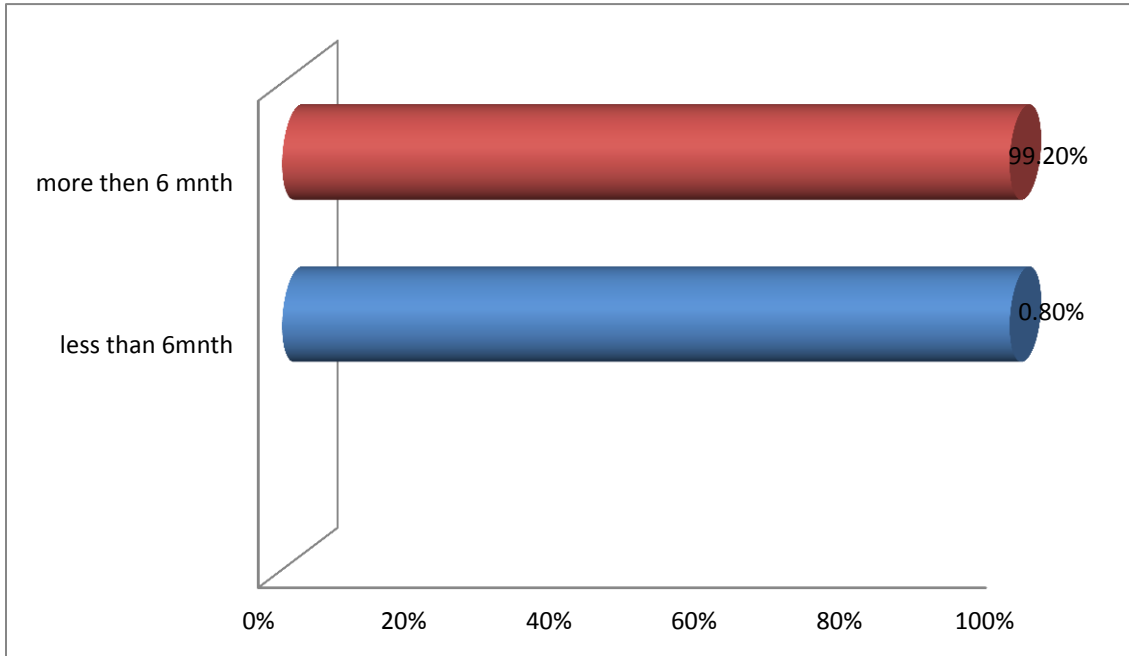


Figure 4.8: Breast feeding Time

Among all the married respondents, who had children, most of them (99.2%) breast fed more than 6 months. Only 0.8% breast fed less than 6 months.

4.9 Knowledge about breast cancer

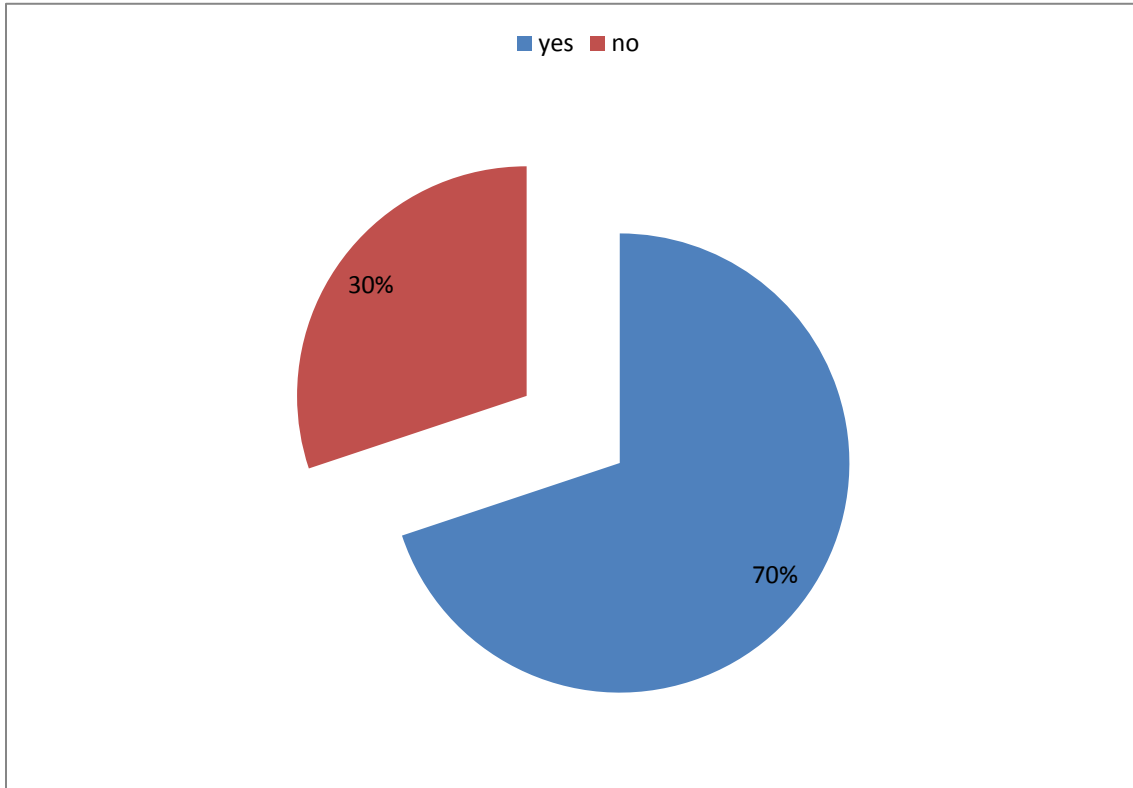


Figure 4.9: Knowledge about breast cancer

Majority of the respondents (70%) had knowledge about breast cancer but 30% of all the participants said they had no knowledge.

4.10 Source of information of female respondents

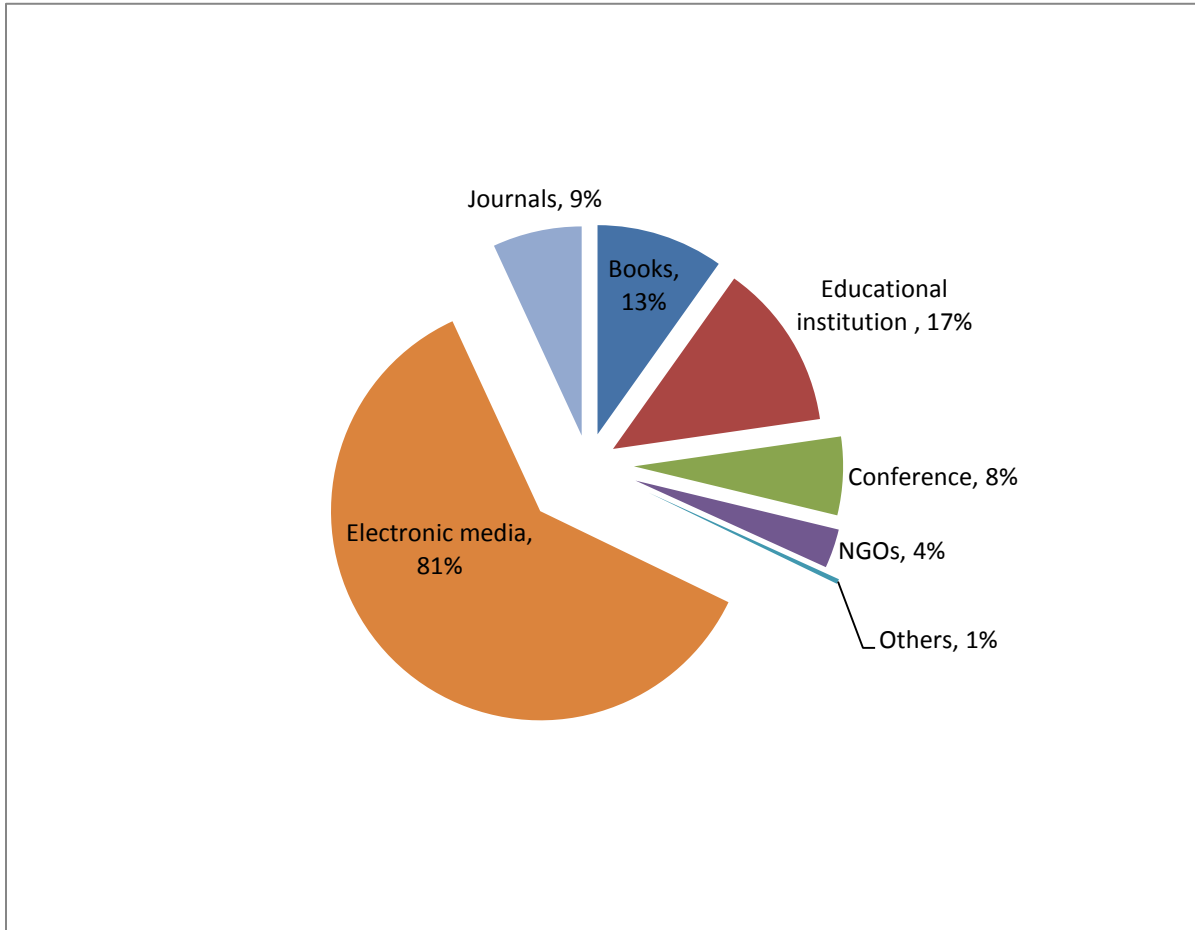


Figure 4.10: Source of information

Since 175 respondents had knowledge about breast cancer rest of the variables were analyzed for them only, most of them (81%) had gained the information from the electronic media, 17% Educational institute and 13% book.

4.11 Signs & Symptoms

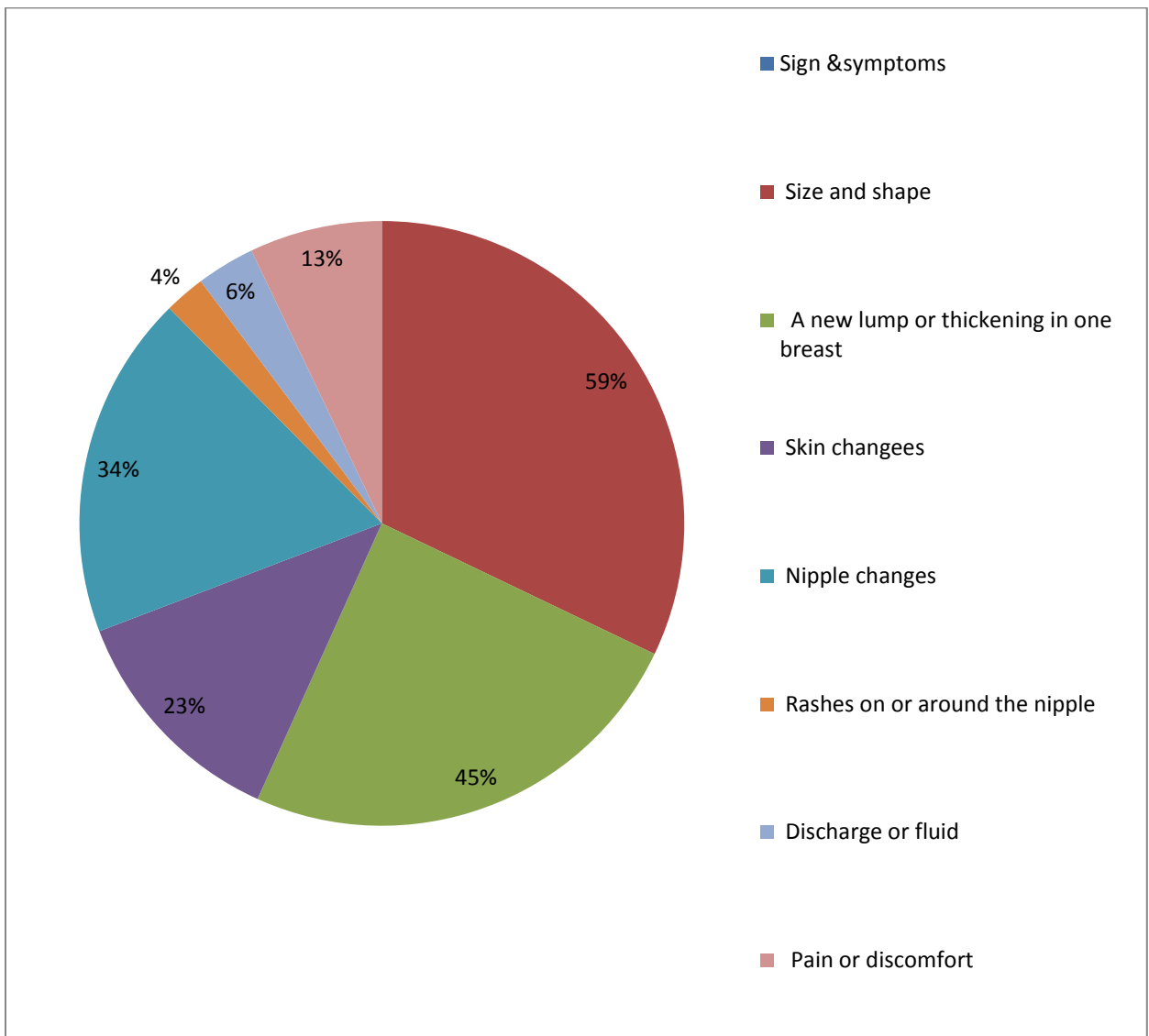


Figure 4.11: Signs symptoms of respondents

About 59% of them identified size& shape, as the major symptom of breast cancer the other symptoms recognized by the respondents were pain or discomfort (13%), a new lump or thickening in one breast (45%), mentioned rashes on or around the nipple (4%), Nipple changes (34%), discharge or fluid from both or one nipple (36%), skin changes (23%).

4.12 Reasons of Breast Cancer

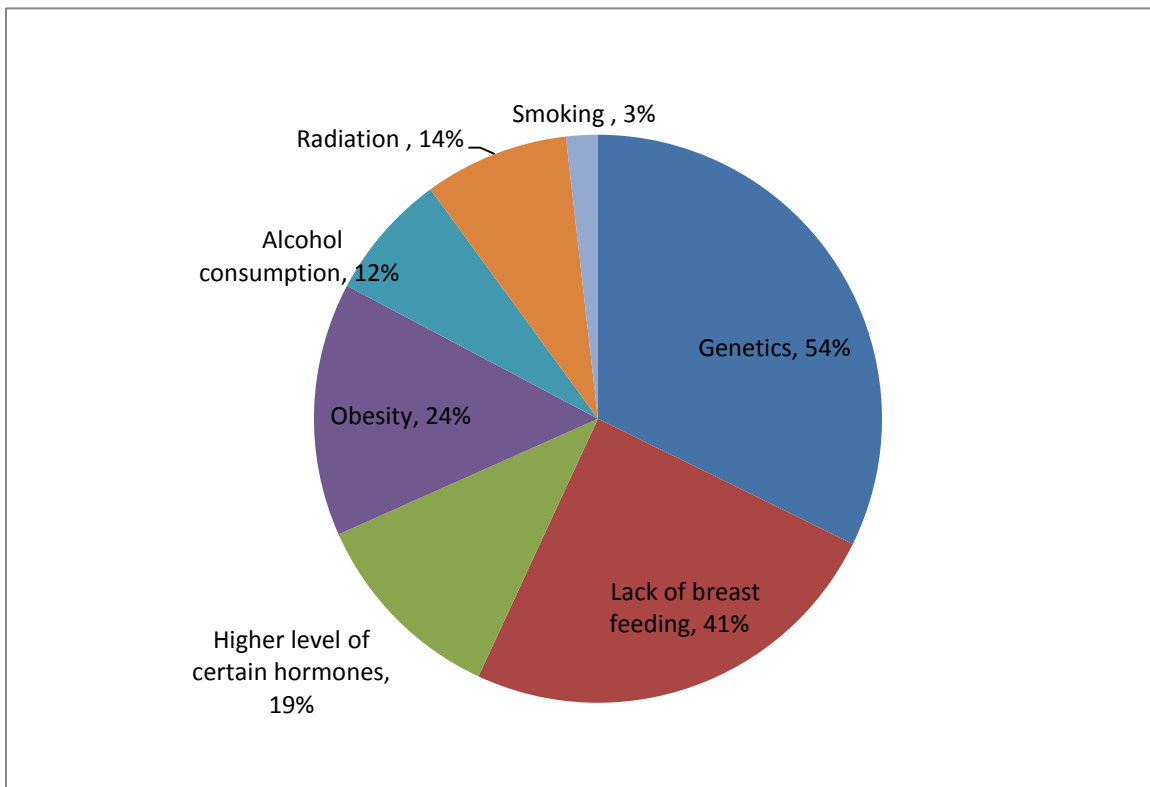


Figure 4.12: Reasons of breast cancer

Regarding the knowledge of risk factors for breast cancer, 54% mentioned that genetics is the reason behind breast cancer. About half of them mentioned (41%) lack of breast feeding (24%) obesity, higher level of certain hormones (19%), Smoking (3%), Radiation(14%), Alcohol(12%) as causes of breast cancer.

4.13 Risk of Breast cancer

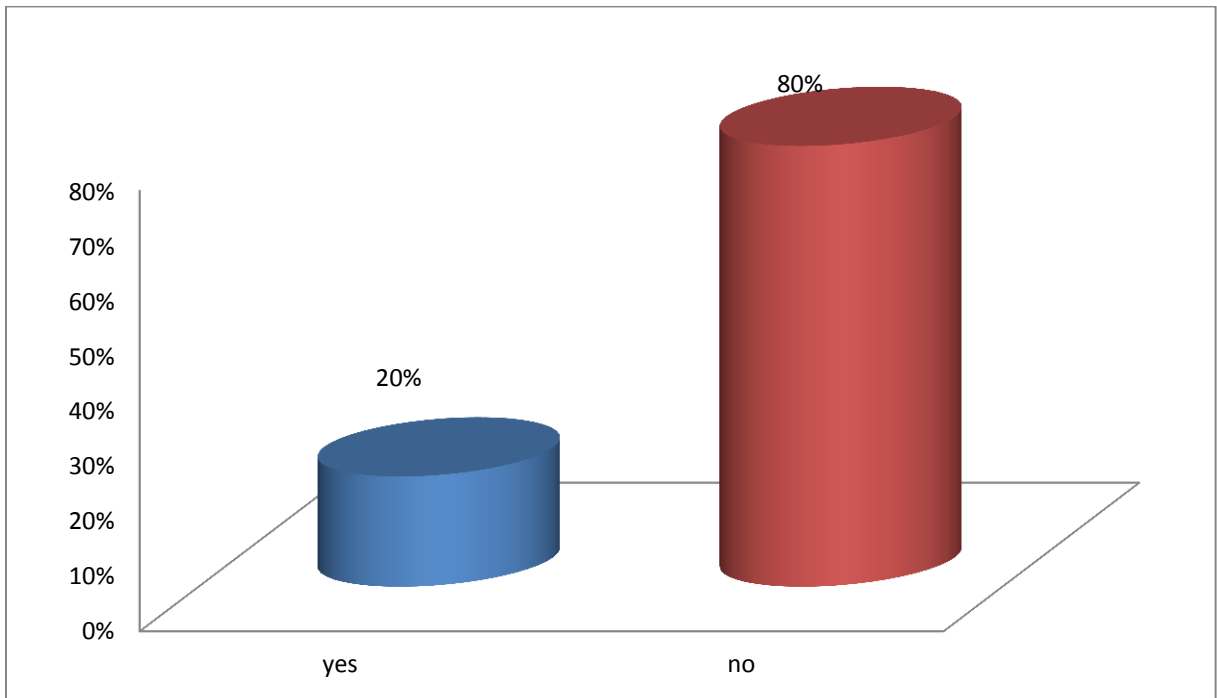


Figure 4.13: Risk of breast cancer

Among respondents 71% had no knowledge about the risk of breast cancer only 46% participants had knowledge about this matter.

4.14 Menstruation status

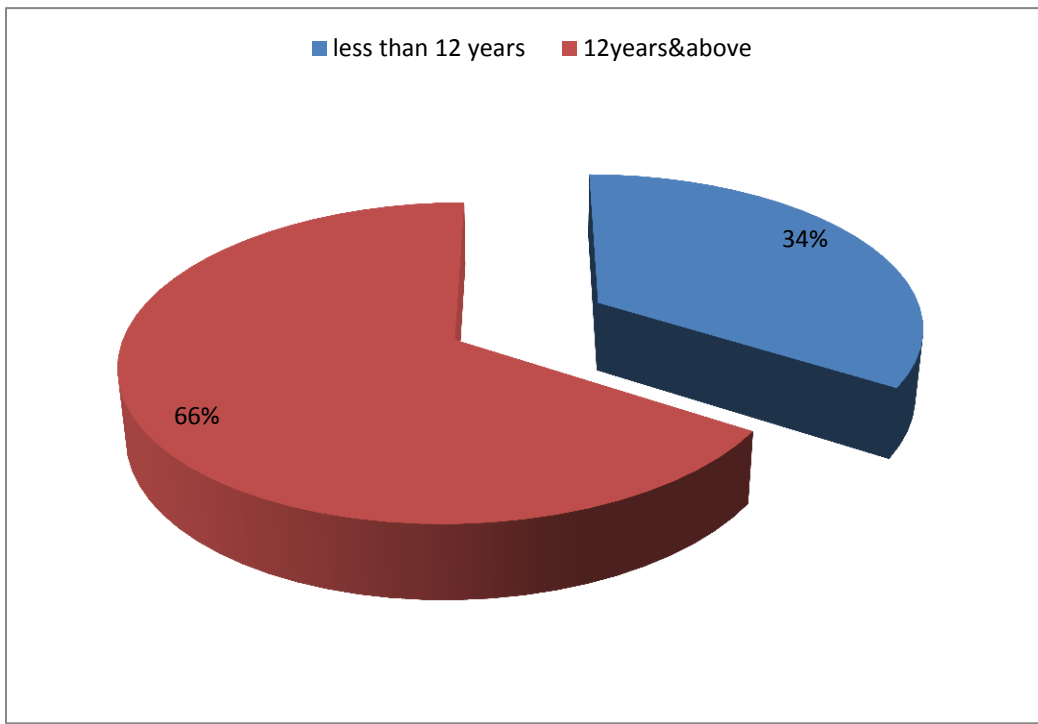


Figure 4.14: Menstruation Status of respondents

Among all the respondents, 66% had started menstruation above 12 years. Only 34% had started menstruation below 12 year.

4.15 Radiation to chest or face

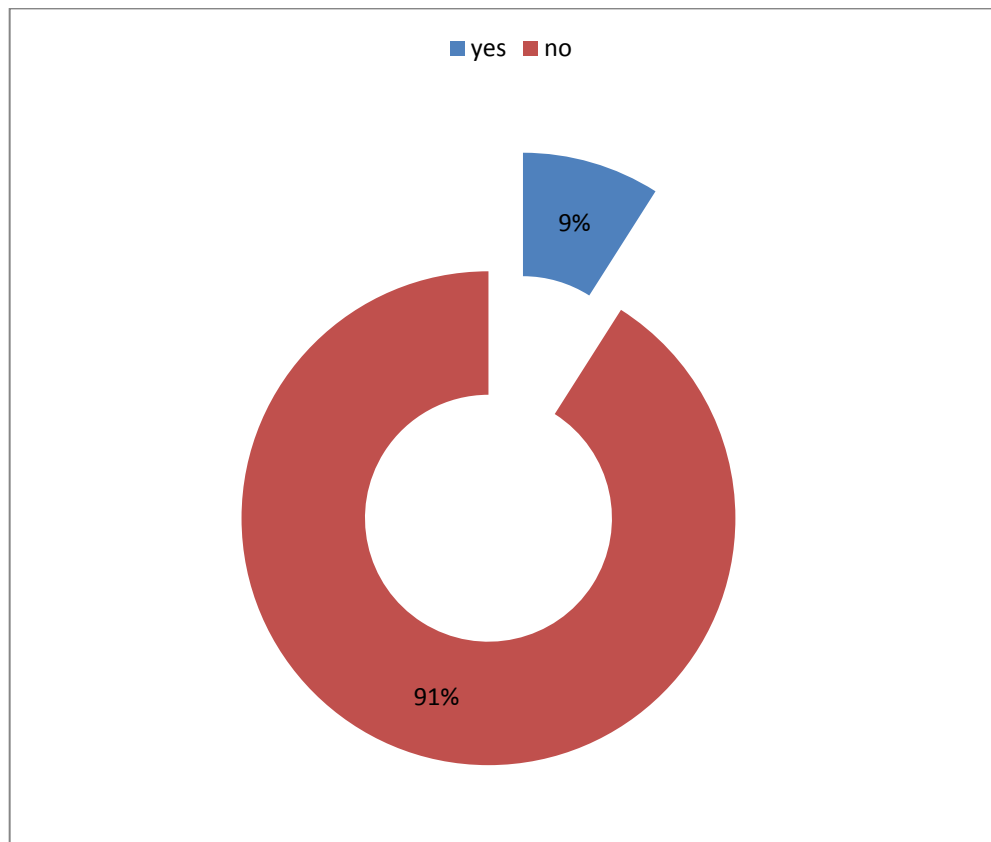


Figure 4.15: Radiation to chest or face

Among all the respondents, 91% had not ever come in contact with radiation to chest or face. Only 9% had come in contact with radiation.

4.16 Knowledge about lower risk of breast cancer

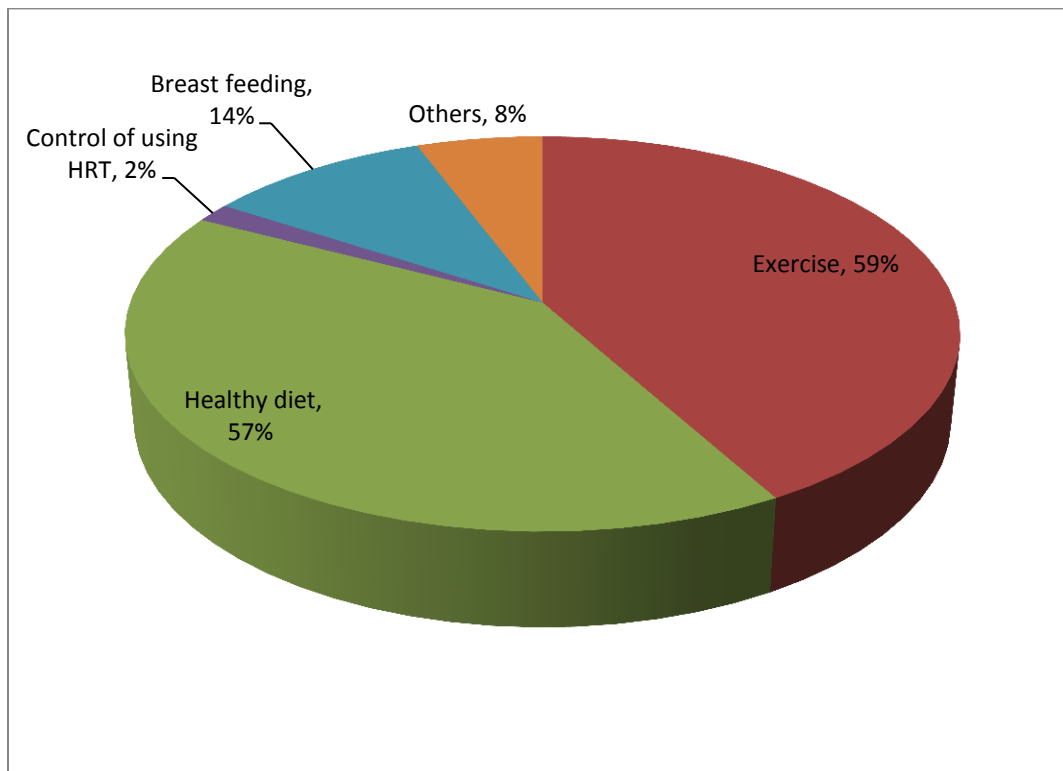


Figure 4.16: Knowledge about lower risk of breast cancer

According to respondent's knowledge, majority of the respondents (59%) thought that exercise can lower the risk of breast cancer. Rest of them thinks that healthy diet (57%), breast feeding (14%), Control of HR(2%)and so on can reduce the breast cancer.

4.17 Knowledge of Nutritional food

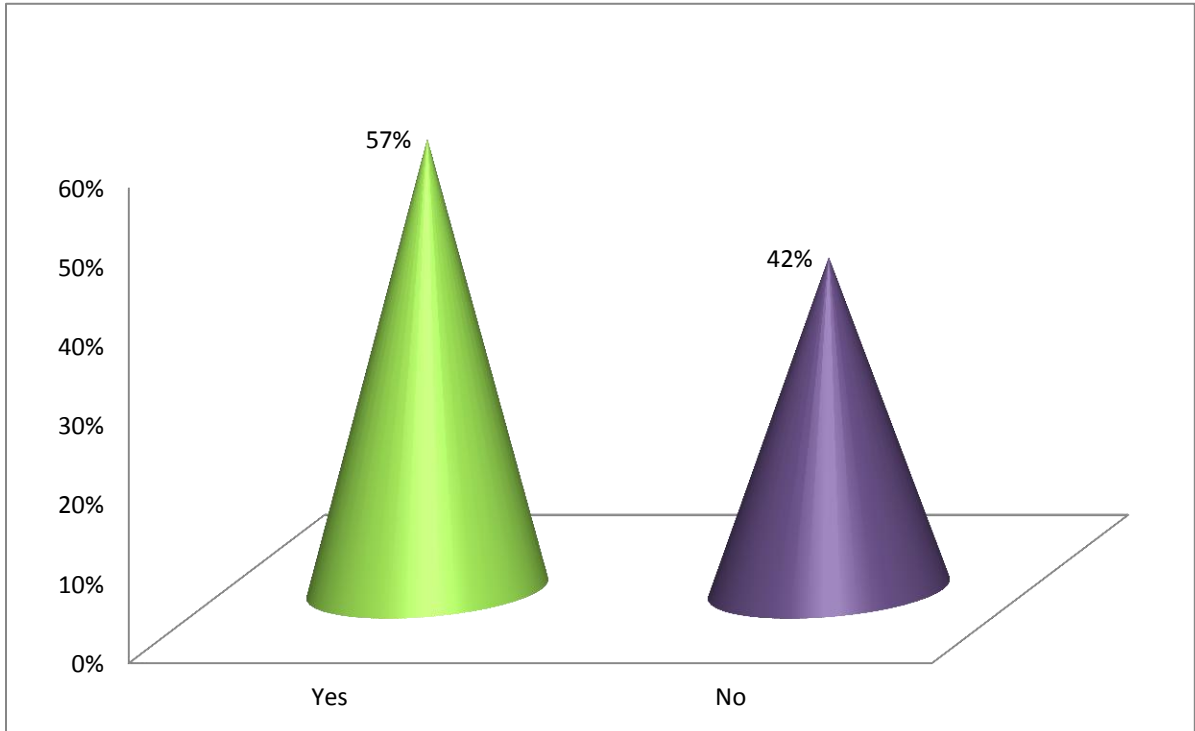


Figure 4.17: Knowledge about Nutritional food

Majority of most of the respondents (57%) knew about the role of nutritious food to reduce the risk of breast cancer. 42% respondents had no knowledge about that.

4.18 Taking nutritional food

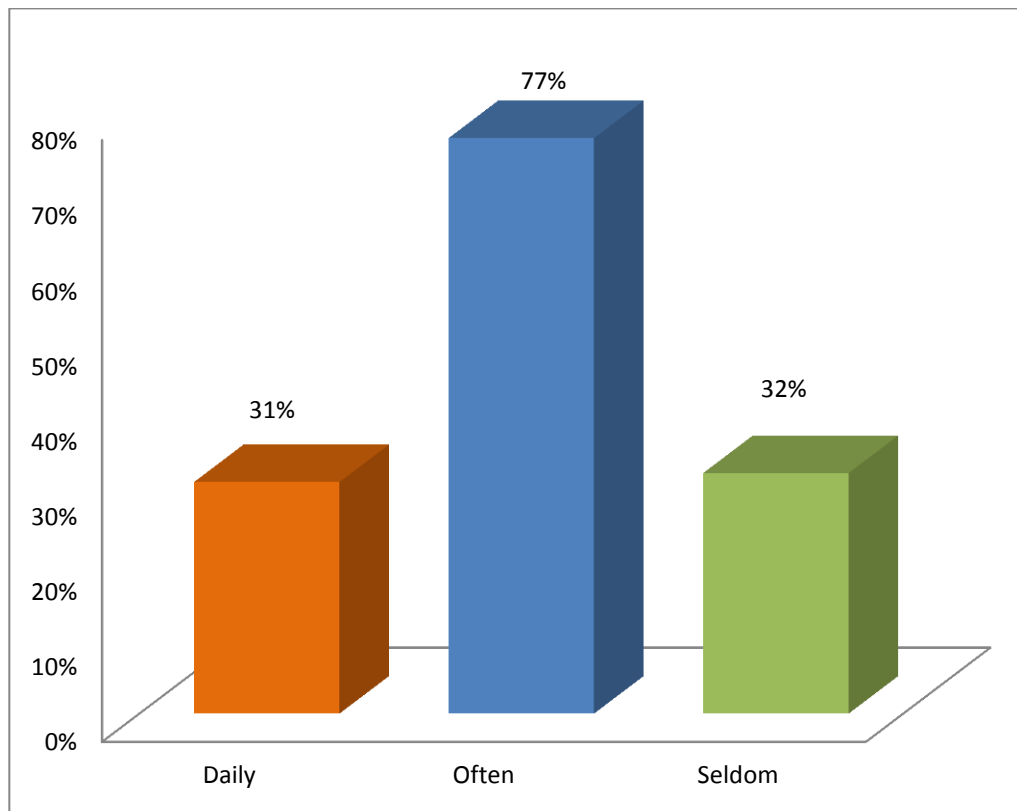


Figure 4.18: Taking nutritional food

Majority (77%) of the respondents took nutritional food often while 3% took daily, 32% took seldom.

4.19 Knowledge of Physical Exercise

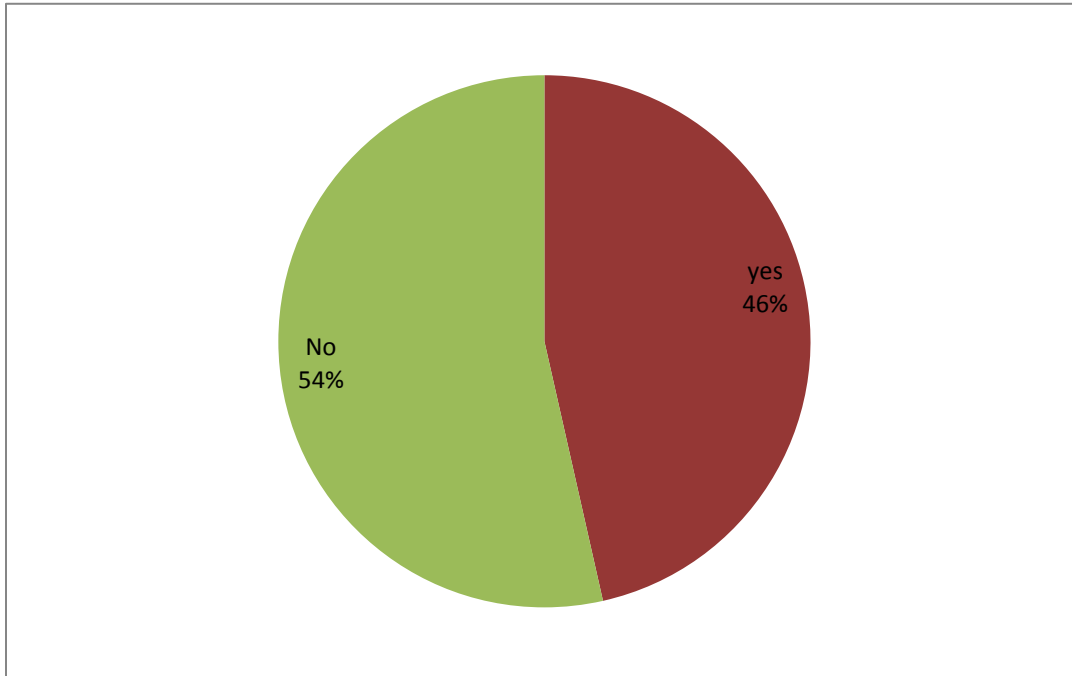


Figure 4.19: Knowledge of physical exercise

Among respondents 46% participants had knowledge about physical exercise. Rest of the respondents 54% had no knowledge.

4.20 Physical activity of respondents

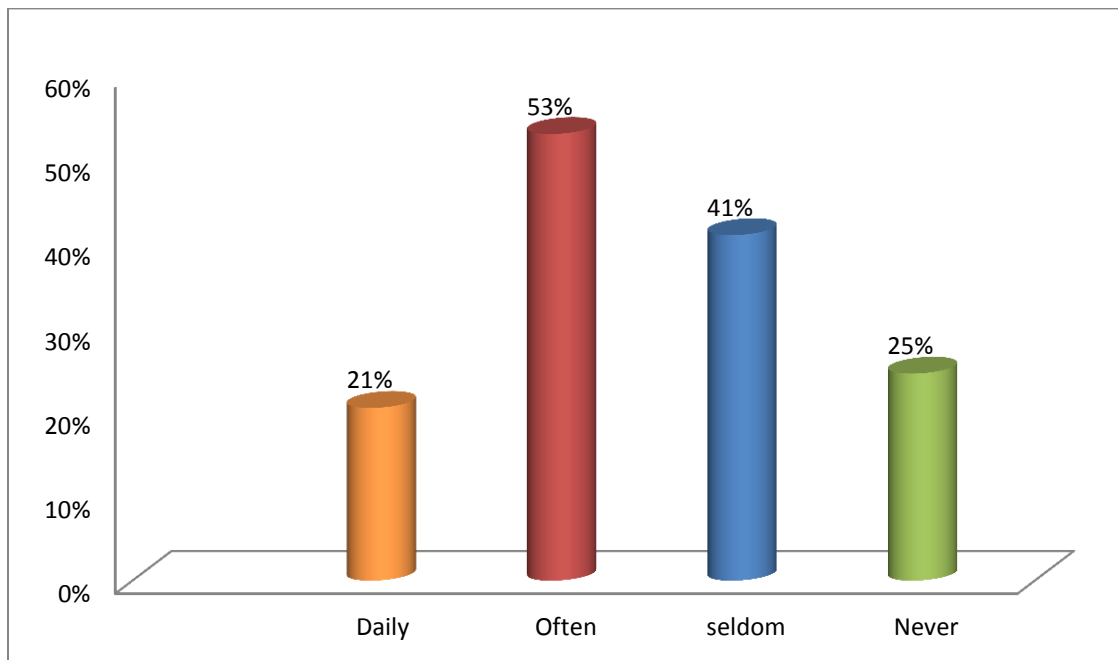


Figure 4.20: Physical activity of respondents

Among all respondents most of their physical activities were related to coming to the work station through walking and doing the household general works. Half of the respondents (53%) did exercise such as: walking in the morning. On basis of this 53% respondents doing their physical activity often, 41% seldom, 21% daily, 25% never do physical activity.

4.21 Regularly observe breast change

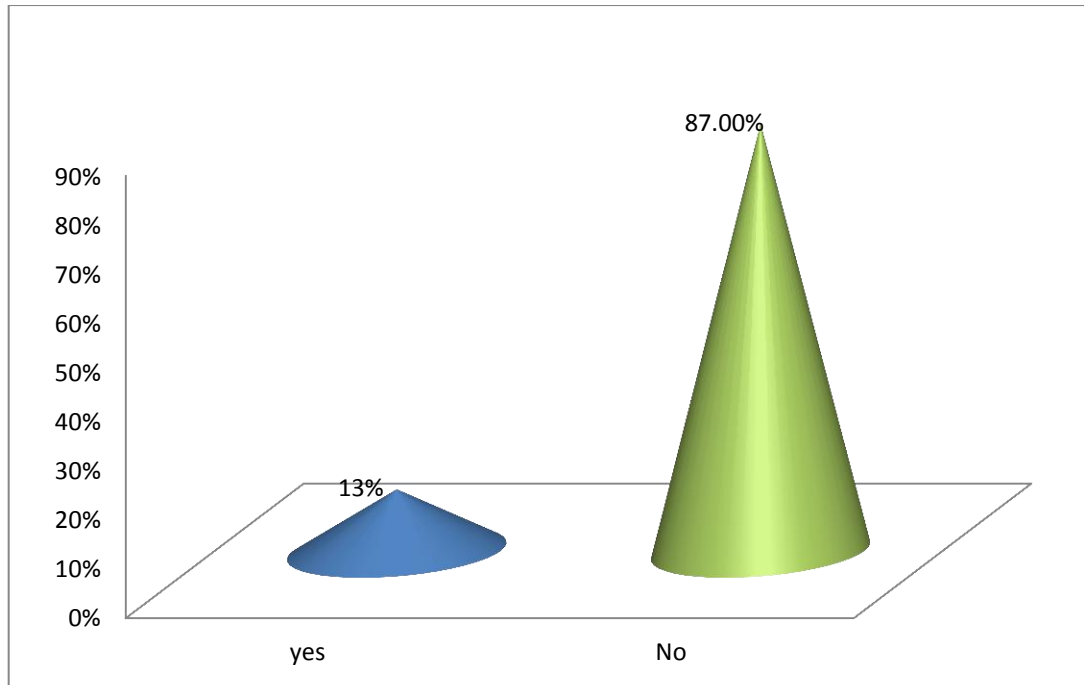


Figure 4.21: Regularly breast observe

Among all respondents only 13% participants observe their breast change regularly but maximum participant (87%) did not observe their breast regularly. They knew about breast cancer but they were not aware about this matter.

4.22 Measures after finding lump

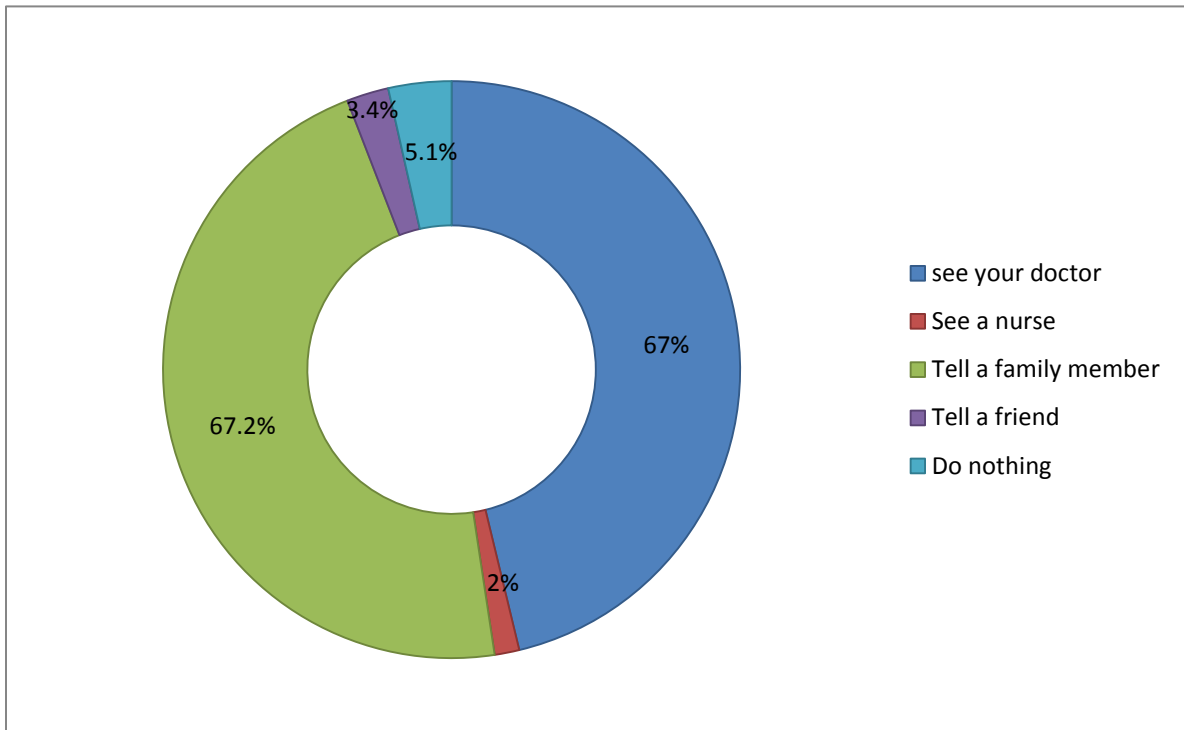


Figure 4.22: Measures after finding lump

Among all respondents, 67% participants see a doctor after finding lump, 67.2% participants tell a family member, 2% see a nurse, 3.4% tell a friend, and 5.1% do nothing.

4.23 Emotional Barrier

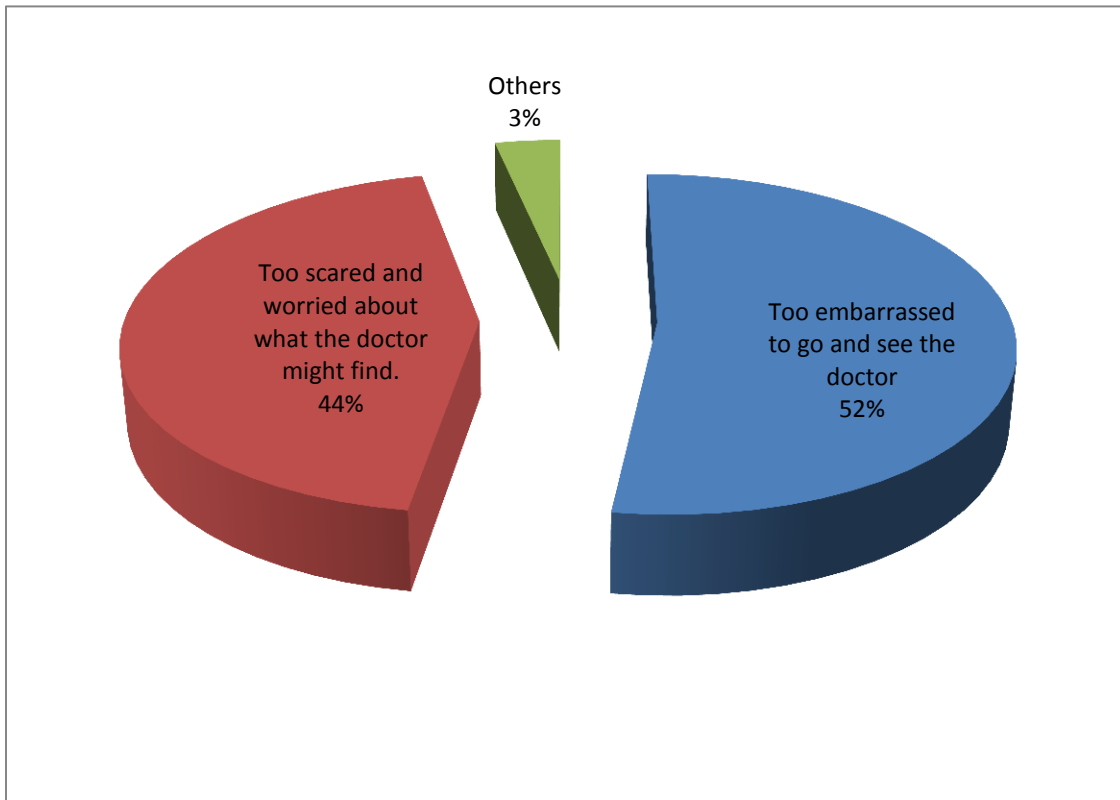


Figure 4.23: Emotional barrier

About participants 52% respondents would become too scared & worried about what the doctor might find 45% too embarrassed to go & see the doctor.

4.24 Knowledge breast cancer treatment

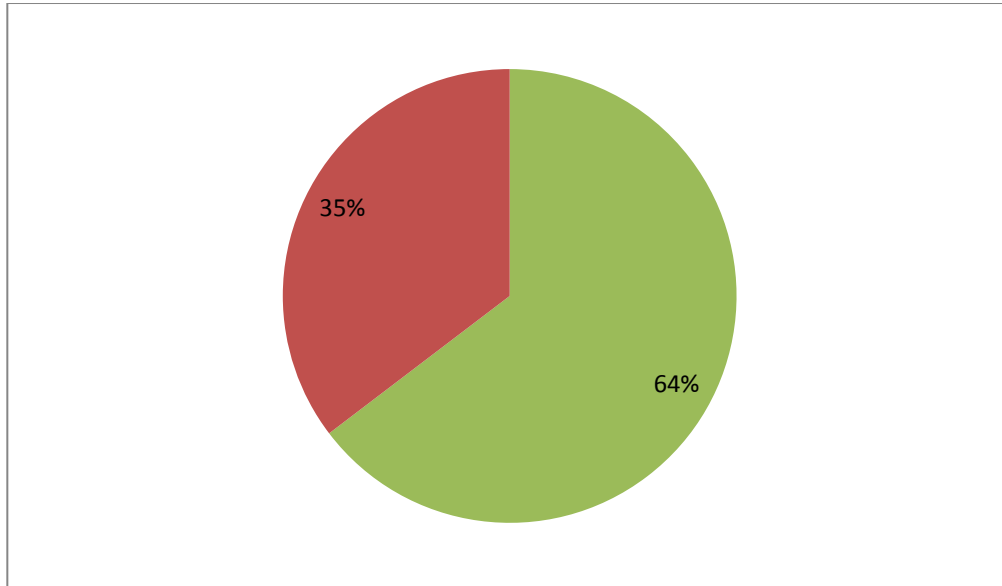


Figure 4.24: knowledge about breast cancer treatment

Among the participants 64% respondents had knowledge about breast cancer treatment.

4.25 Knowledge about types of breast cancer treatment

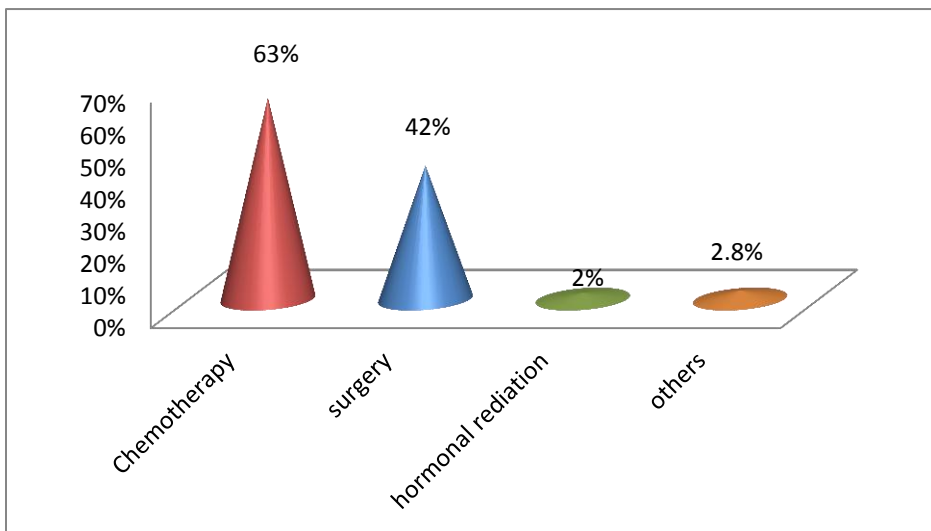


Figure4.25: Knowledge about breast cancer treatment types

About 57% knew about chemotherapy, 38% knew about surgery, 2% hormonal radiation, 2.6% knew about others such as Homeopathic.

4.26 Importance of breast cancer screening

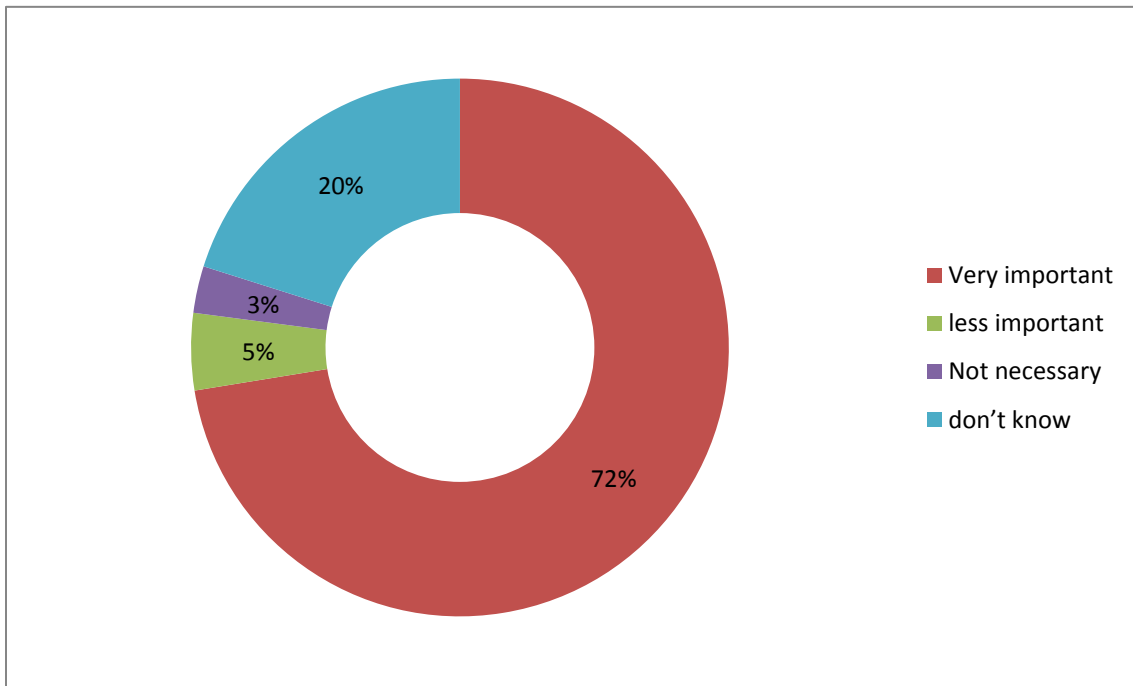


Figure 4.26: Importance of breast cancer screening

Among all participants 72% respondents said breast cancer screening is very important, 20% respondents don't know about this matter, 3% female said not necessary, 5% said less important.

4.27 Knowledge about diagnosis

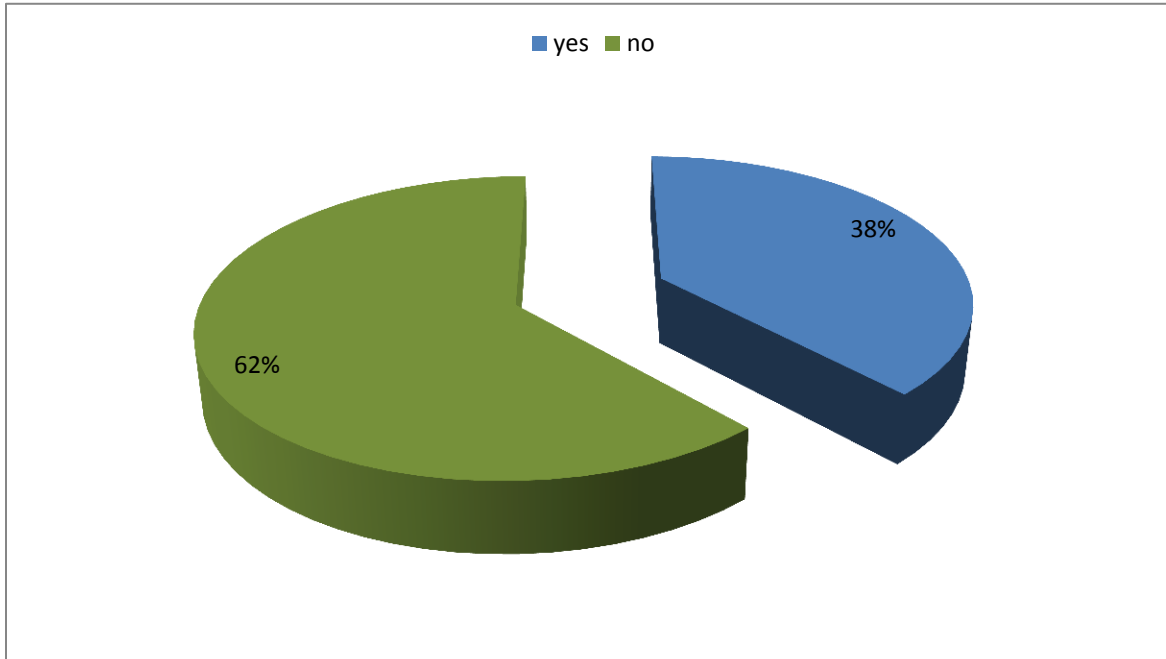


Figure 4.27: Knowledge about diagnosis

Majority respondents (62%) had no idea about diagnosis of breast cancer. Only 38% respondents had idea about this.

4.28 Types of diagnosis

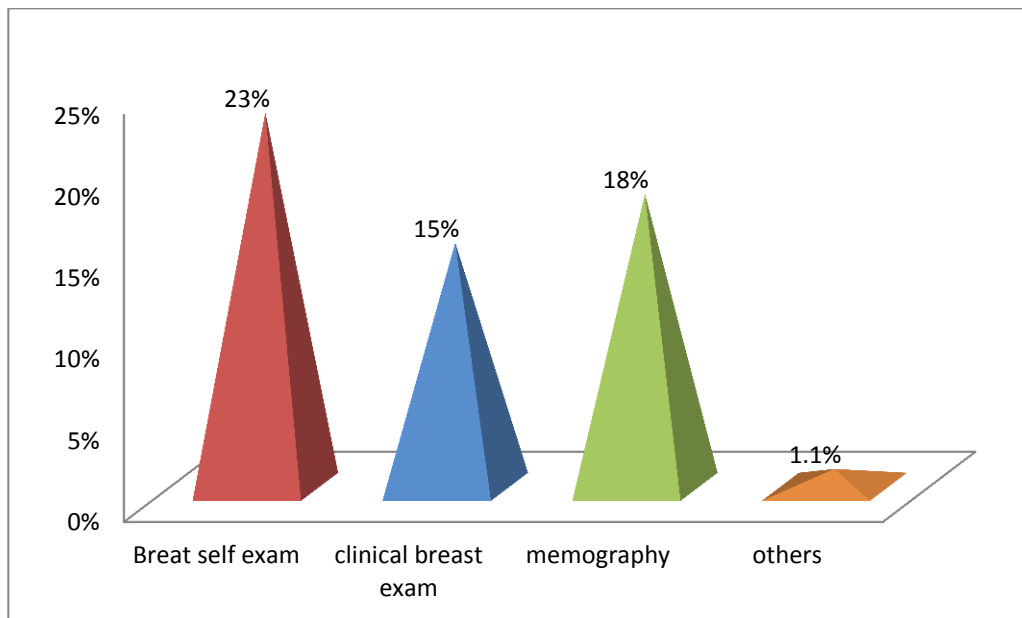


Figure 4.28: Types of diagnosis

Among all respondents 23% knew about breast self-exam, 15% knew clinical breast exam, 18% knew memography, 1.1% knew other kind of diagnosis such as ultra sound, MRI, Biopsy.

4.29 Knowledge about breast self-exam perform

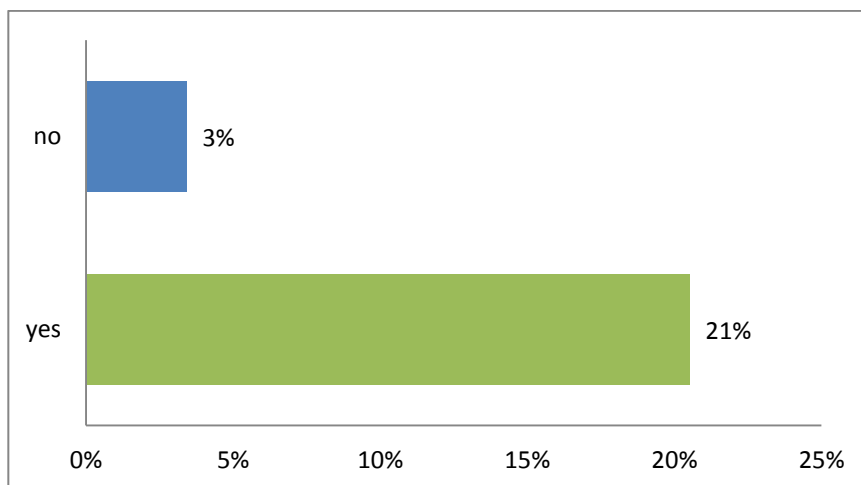


Figure 4.28: Knowledge about breast self-exam

Among all participants, 21% participants had idea how breast self-exam perform but 3% participants had no idea about this. Among all (21%) of this participants only very little amount of respondents had knew the recommendation time of breast self-exam and very few amount of respondents perform breast self-exam regularly.

4.30 Knowledge about clinical breast exam perform

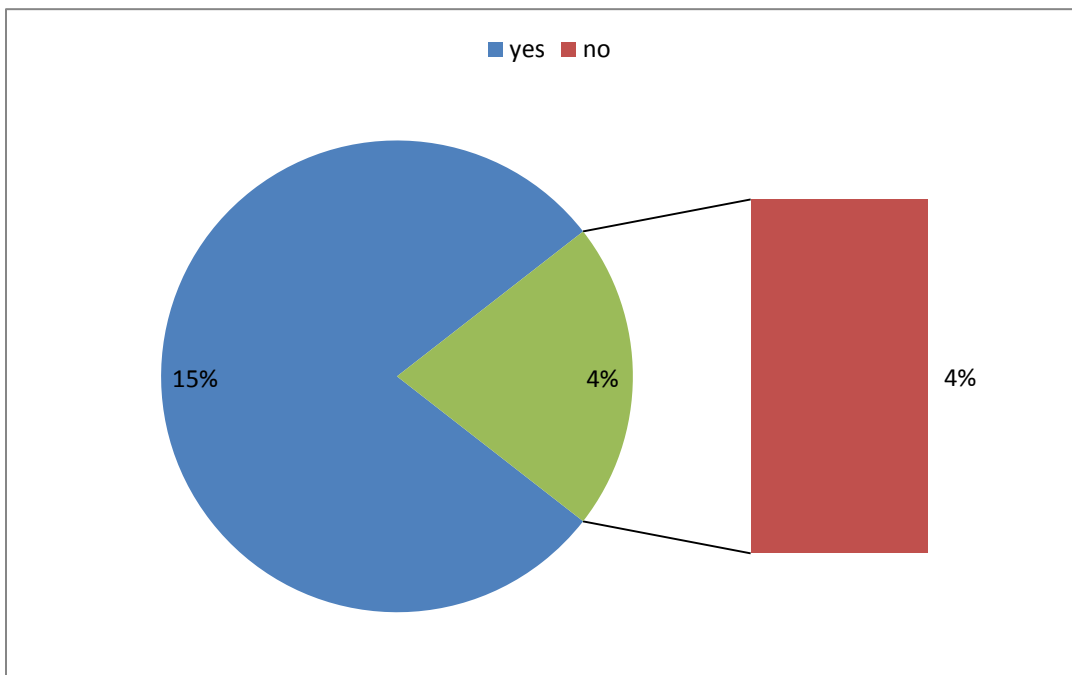


Figure 4.29: Knowledge about clinical breast exam

Among all of participants 15% respondents had knowledge about clinical breast exam perform. Rest 4% respondents had no idea about this.

4.31 Knowledge about mammography

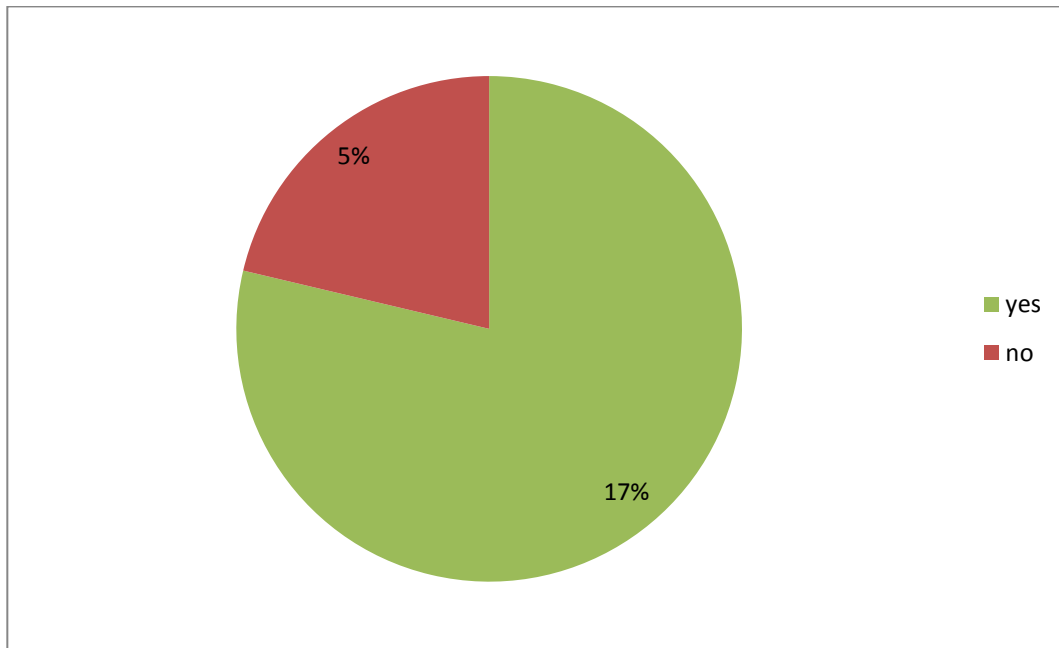


Figure 4.30: Knowledge about mammography

Among all participants 17% respondents heard about mammography and 5% respondents had no idea about this. Among this 17% respondent's very little amount respondents knew at which age mammography perform and the recommendation time of mammography perform.

Discussion

Now a days, breast cancer is a common female diseases all over the world. Day by day it is increasing very rapidly. There is various reason to increase breast cancer. This study was evaluated the level of awareness & correlated the risk factors. Early warning signs and screening methods are used for early detection and treatment. Due to lack of adequate knowledge about breast cancer Bangladeshi general females are largely suffered from it .To raise awareness among the rural women about breast cancer, this study was conducted on general women. The basic level of knowledge about breast cancer among the population about treatment, diagnosis, and process of diagnosis, diagnosis tools, screening, early diagnosis is important to control breast cancer.

A study was done to determine the level of knowledge regarding breast cancer and to increase awareness about breast cancer screening practices among a group of women in a tertiary care hospital in Mumbai, India. In this study, it was reported that a substantial proportion of women (38.5%) had relatively high level of awareness (Ahuja and Chakrabarti,2009).

Another study was conducted by (Petta and Flores, 2014). They performed a questionnaire survey on breast feeding awareness it was recommended that babies be only breastfed for the first 6 months of life,” and “It was recommended that babies continue to be breastfed until at least one year of age” had the lowest percentage of correct responses. In both cases had a correct response rate of 30% and 42.5%. According to the findings of our study, Majority respondents 85.6% have children and only 0.8% feeding their baby less than 6 month and majority respondents(99.2%) feeding their baby more than 6 months.

According to our present study, majority of the participants education level 33% was graduate 12% completed primary education, 11% have passed SSC, 27% had passed HSC,12% had completely illiterate and only 4% had been passed post-graduate education and 70% of respondents had knowledge about breast cancer and 30% of respondents had no knowledge. A study was done in Korean people about breast cancer knowledge. In that study majority of women almost 70% have lack of knowledge about breast cancer (Sadller *et al*, 2001).

In our study most of respondents have gained information about breast cancer from electronic media (81%),13% Educational institute. Among Nigerian rural woman, the leading source of information about breast cancer was "elders, neighbors and friends" and 63 (15.4%) acknowledged this source, while only 18 (4.4%) respondents acknowledged health workers as source (Oluwatosin, 2006) and in a study in Iran 61% of the respondents stated that they knew about breast cancer screening programs and most indicated that electronic media (television 34% and radio 14%) were their source of information (Montazeri *et al*,2008).

A study was done in Egypt ,where 93% of the patients recognized “painless breast mass” as a breast cancer symptom (Shinawi *et al*,2013) but in our present study only 59% respondents said size and shape change as a symptoms of breast cancer. This is one of the major symptoms so the knowledge of symptom is right.

A study was done in Angola where maximum respondents had chosen family history as a risk factor (Sambanje *et al*,2012) .According to our present study maximum respondents (32%) chose genetic factor as a risk factor.

In a study in UAE almost half (44.8%) of women who never had a Clinical Breast Exam (CBE) and 44.1% of women who never had a mammography expressed a lack of knowledge about the existence of these screening techniques (Elobaid *et al*, 2014).In our study, 15% respondents have knowledge about clinical breast exam perform and 17% respondents heard about mammography and 5% respondents have no idea about this.

In East London a study was done, in that study the most commonly reported barriers to seeking medical help were worry about what the doctor might find (47%), being embarrassed to see the doctor (38%), being worried about wasting the doctor's time (37%) and finding it difficult to make an appointment (35%) (Forbes *et al*, 2011). In our present study 44% respondents were scared & worried about what the doctor might find, and 52% were embarrassed to go & see the doctor.

In Tehran a study was done where, 75% of the women knew about breast cancer prevalence and 63% claimed to know how to examine their breasts, only 6% of them practiced BSE monthly (Haji mahmoodi *et al*, 2002).In our study,21% participants had idea about how to

perform breast self-exam but 3% participants had no idea about this. About 21% participants knew the recommendation time of breast self-exam and very few of performed breast self-exam regularly.

With respect to knowledge about breast cancer screening were 72% respondents said breast cancer screening is very important, 20% respondents did not know about this matter, 3% female said not necessary, 5% said less important . On the other hand, the study in Esanland found that over half (54.8%) of the respondents in the study area were not aware of breast cancer screening; the respondents (55.6%) had low knowledge of breast cancer screening 67.3% of female health workers in Esanland had never been screened for breast cancer (Uhunmwagho *et al*, 2013).

Conclusion

In conclusion, this study has highlighted the need of a breast cancer awareness, early signs and its screening and therapeutic approaches among female population in Bangladesh. Majority female respondent's knowledge level about risk factor, treatment, diagnosis was not so high. They know about the risk factor but still now that much not aware about this disease. Majority respondents had no idea about regular practice that can lower risk of breast cancer. So different types of Government and non-government educational program, conferences, campaign should be arranged to inform about breast cancer, its risk factor, treatment and diagnosis among all sector of women in our country.

References

Ahuja, S., Chakrabarti, N. (2009). To Determine The Level Of Knowledge Regarding Breast Cancer And To Increase Awareness About Breast Cancer Screening Practices Among A Group Of Women In A Tertiary Care Hospital In Mumbai, India, *The Internet Journal of Public Health*. [online], Available at: <http://file:///D:/seurvy/Internet%20Scientific%20Publications.htm> [Accessed 8 Jul. 2015].

Avis, N., Crawford, S. and Manuel, J. (2005) Quality of life among younger women with breast cancer. *J Clin Oncol*. (23). p. 3322–3330.

Cedars-sinai., (2015). Steps to Reduce the Risk of Breast Cancer - Cedars-Sinai. [online] Available at: <http://www.cedars-sinai.edu/Patients/Programs-and-Services/Breast-Center/Breast-Cancer-Risk-Reduction-Program/Steps-to-Reduce-the-Risk-of-Breast-Cancer.aspx> [Accessed 8 Jul.2015].

Cancer research. (2014). Breast cancer tests, *Cancer Research UK*. [online] [Cancerresearchuk.org](http://www.cancerresearchuk.org). Available at: <http://www.cancerresearchuk.org/about-cancer/type/breast-cancer/diagnosis/breast-cancer-tests#mamm> [Accessed 8 Jul. 2015].

Cancer, B. (2015). Breast cancer statistics , *World Cancer Research Fund International*. [online] Available at: <http://wcrf.org/int/cancer-facts-figures/data-specific-cancers/breast-cancer-statistics> [Accessed 8 Jul. 2015].

Dehn, R.W. and Asprey, D.P (2007) Essential Clinical Procedures. *Saunders Elsevier, Philadelphia*. <http://www.amazon.com/Essential-Clinical-Procedures-Expert-Consult/dp/1455707813>

Doshi, D., Reddy. B. S., and Karunakar , P. (2012). Breast Self-examination: Knowledge, Attitude, and Practice among Female Dental Students in Hyderabad City, India. *Indian J Palliat Care*, 18(1),pp. 68–73.

Elobaid, Y., Aw, T., Grivna, M. and Nagelkerke, N. (2014). Breast Cancer Screening Awareness, Knowledge, and Practice among Arab Women in the United Arab Emirates: A Cross-Sectional Survey. *PLoS ONE*, 9(9), p.e105783.

El-Shinawi, M., Youssef, A., Alsara, M., Aly, M., Mostafa, M., Yehia, A., Hurlbert, M., El-Tawab, R. and Mohamed, M. (2013). Assessing the level of breast cancer awareness among recently diagnosed patients in Ain Shams University Hospital. *The Breast*, 22(6), pp.1210-1214.

Forbes, L., Atkins, L., Thurnham, A., Layburn, J., Haste, F. and Ramirez, A. (2011). Breast cancer awareness and barriers to symptomatic presentation among women from different ethnic groups in East London. *British Journal of Cancer*, 105(10), pp.1474-1479.

Haji-Mahmoodi, M., Montazeri, A., Jaryandi, S., Ebrahimi, M., Haghigat, S. and Harirchi, I. (2002) Breast self-examination: Knowledge, Attitudes, and Practices Among Female Health Care Workers in Tehran, Iran. *Breast J*, 8: 222.

Khadiga., F. Dandash., A. (2007). Knowledge, Attitudes, and Practices Surrounding Breast Cancer and Screening in Female Teachers of Buraidah, Saudi Arabia. *International Journal of Health Sciences*, [online] 1(1), p.61. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068667/> [Accessed 8 Jul. 2015].

Komen, G. S., (2014). Breast Self-Exam, *Susan G. Komen*®. [online] Available at: <http://ww5.komen.org/BreastCancer/BreastSelfExam.html> [Accessed 8 Jul. 2015].

Komen, G. S., (2015). Mammography - Free Mammograms, *Susan G. Komen*®. [online] Available at: <http://ww5.komen.org/BreastCancer/Mammography.html> [Accessed 8 Jul. 2015].

Latif, R. (2014). Knowledge and attitude of Saudi female students towards breast cancer: A cross-sectional study, *sciencedirect*. [online] Available at: <http://www.sciencedirect.com/science/article/pii/S1658361214000614> [Accessed 8 Jul. 2015].

Loh, SY., Chew ,SL.(2011). Awareness and practice of breast self examination among malaysian women with breast cancer, *Asian Pac J Cancer Prev*, 12(1), pp.199-202.

Martha, S., Mafuvadze, B. (2012). Breast cancer knowledge and awareness among university students in Angola. *The Pan African Medical Journal*, [online] 11. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3361208/> [Accessed 8 Jul. 2015].

Muhammad, S. M. (2007). *Knowledge, Attitude and Practice Regarding Breast Cancer Among Medical Students of Bangladesh*. [online] Available at: http://www.phmed.umu.se/digitalAssets/30/30072_2007-1-muhammad-sohel-mia.pdf [Accessed 8 Jul. 2015].

National Cancer Institute, (2015). Breast Cancer Risk in American Women, *National Cancer Institute*. [online] Available at: <http://www.cancer.gov/cancertopics/types/breast/risk-fact-sheet> [Accessed 8 Jul. 2015].

National Cancer Institute, (2015). Breast Cancer Treatment, *National Cancer Institute*. [online] Available at: <http://www.cancer.gov/cancertopics/pdq/treatment/breast/Patient/page5> [Accessed 8 Jul. 2015].

National Cancer Institute, (2015). Understanding Breast Changes: A Health Guide for Women, *National Cancer Institute*. [online] Available at: <http://www.cancer.gov/cancertopics/screening/understanding-breast-changes/basics> [Accessed 8 Jul. 2015].

National Cancer Institute, (2015). What Is Cancer?, *National Cancer Institute*. [online] Available at: <http://www.cancer.gov/cancertopics/what-is-cancer> [Accessed 8 Jul. 2015].

Oluwatoin, O. A. & Oladepo, O. (2006) Knowledge of breast cancer and its early detection measures among rural women in Akinyele Local Government Area, Ibadan, Nigeria. *BMC Cancer*, 26 (6), 271.

- Petta, D., Flores. (2014). Survey about breast feeding awareness among UNHS female respondents childbearing age, in San Francisco, USA. [online] Available at: <http://www.nmfonline.org/file/2014-pclp.../Petta-Flores-Danielle-Paper.pdf> [Accessed 10 Jul. 2015].
- Sadler, G., Ryujin, L., Ko, C. and Nguyen, E. (2001) Korean women: breast cancer knowledge, attitudes and behaviors. *BioMed Central Public Health*, 1, 3.
- Singlestory, S. E. & Connolly, J. L. (2006) Breast cancer staging: working with the sixth edition of the AJCC Cancer Staging Manual. *CA: A Cancer Journal for Clinicians*.56. (1) p. 37-47.
- Uhunmwagho, Q. N., Aluede, O. O. & Fajoju, S. A. (2013) Awareness level and attitude towards breast cancer screening practices among female health workers in Esanland, Edo state, Nigeria. *African Journal for Physical, Health Education, Recreation and Dance*, 19 (4).