Knowledge and awareness of Breast & Cervical cancer among women aged 15 to 35

A research paper is submitted to the Department of Pharmacy, East West University in conformity with the requirements for the degree of Bachelor of Pharmacy.

Submitted by

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Declaration by the Candidate

I, Nisrat Zerin, hereby declare that the dissertation entitled "Knowledge and awareness of Breast & Cervical cancer among women aged 15 to 35" submitted by me to the Department of Pharmacy, East West University and in the partial fulfillment of the requirement for the award of the degree Bachelor of Pharmacy, work carried out by me during the period 2016 of my research in the Department of Pharmacy, East West University, under the supervision and guidance of Ms. Tilka Fannana, Senior Lecturer, Department of Pharmacy, East West University. The thesis paper has not formed the basis for the award of any other degree/diploma/fellowship or other similar title to any candidate of any university.

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This is to certify that the thesis entitled “Knowledge and awareness of Breast & Cervical cancer among women aged 15 to 35” submitted to the Department of Pharmacy, East West University for the partial fulfillment of the requirement for the award of the degree Bachelor of Pharmacy, was carried out by Nisrat Zerin, ID: 2012-3-70-028, during the period 2016 of his research in the Department of Pharmacy, East West University, under the supervision and guidance of me. The thesis has not formed the basis for the award of any other degree/diploma/ fellowship or other similar title to any candidate of any university.

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This thesis paper is dedicated

to

My Parents

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Abbreviations

HPV	The human papillomavirus
ACS	American Cancer Society
CT	Computerized tomography
PET	Positron emission tomography
CIS	Carcinoma in situ
CIN	Cervical intraepithelial neoplasia
VEGF	Vascular endothelial growth factor
BSE	Breast self-examination
CBE	Clinical-based examination
KAP	Knowledge, attitude, and practice
SD	Standard deviation
WHO	World Health Organization

Abstract

In both the developed and the developing world, Breast & Cervical cancer are the most common cancers among women. It has become a high risk for the Asian women. In Bangladesh the number of breast & cervical cancer patients is increasing day by day. The aim of our study was to evaluate the knowledge practice and preventive measures of breast & cervical cancer among the general women in Bangladesh. This study is done by collecting data among women aged 15-35 (n=360) containing different questions and then those data was analyzed by using Microsoft excel. Majority of them were educated (35%).Heard about breast cancer (77%) & about cervical cancer (72%). Risk factors knowledge in my study, majority of the participants 92.90% recognized genetic factor, followed by 81.29% recognized oral contraceptive use. 80.64% recognized alcohol consumption Majority of population (n=360) said that mass media (65.28 %) is the largest source from where they get an information of breast & cervical cancer. Majority of them know about the treatment method of both type of cancer ,where 35.83% chose surgical, 8.61% chose radio therapy,26.67% chose chemotherapy. Among them majority of participants identified genetic factor(92.90 %), 50.96% recognized smoking, 76.12% recognized radiation to the chest, 80.64% recognized alcohol consumption, 81.29% recognized oral contraceptive use, as a risk factor of breast cancer and 89.70% of the participants said family history, 91.17% know about hormonal contraception use as risk factor for cervical cancer. In addition, 41.67 % heard of breast self exam knowledge and only 19.16% of the population said they heard about PAP test which is done for cervical cancer screening test.

In this study, findings showed that knowledge & awareness and practice of Breast & Cervical cancer in Bangladesh is still inadequate among women both illiterate and literate. The present situation can become more devastating if early attention is not given. Thus, more educational programs, conferences, public awareness program should be designed to provide comprehensive information and awareness on breast & cervical cancer as it is an alarming issue.

Key words: Breast cancer, Cervical Cancer, knowledge, awareness, risk factors, symptoms, practice, treatment.

1.1 Overview

Cancer, a major health problem occurs around the world (Ozdemir and Bilgili, 2010; Ersin and Bahar, 2012; Karadag et al., 2014). In 2012, a total of 14.1 million new cancer cases developed and 8.2 million cancer deaths occurred around the world (Globocan, 2012). Around 100 different types of cancers are diagnosed till now. Among these, both breast cancer and cervical cancer occurs commonly in women population throughout the world. All kinds of cancer start occurring with the abnormal cells division, cells growth and lack of apoptosis of the cancer cells in the tissue. Cancer has four different stages based on the cells growth. Lower stage (such as a stage 1 or 2) means that the cancer has not spread very much. A higher number (such as a stage 3 or 4) means it has spread more. Stage 4 is the highest stage. (*Cancer.org*, 2016).At the terminal stage, i.e. stage IV cancer cells can move out the parent tissue and travel to others healthy organs and starts growing in the new places too.

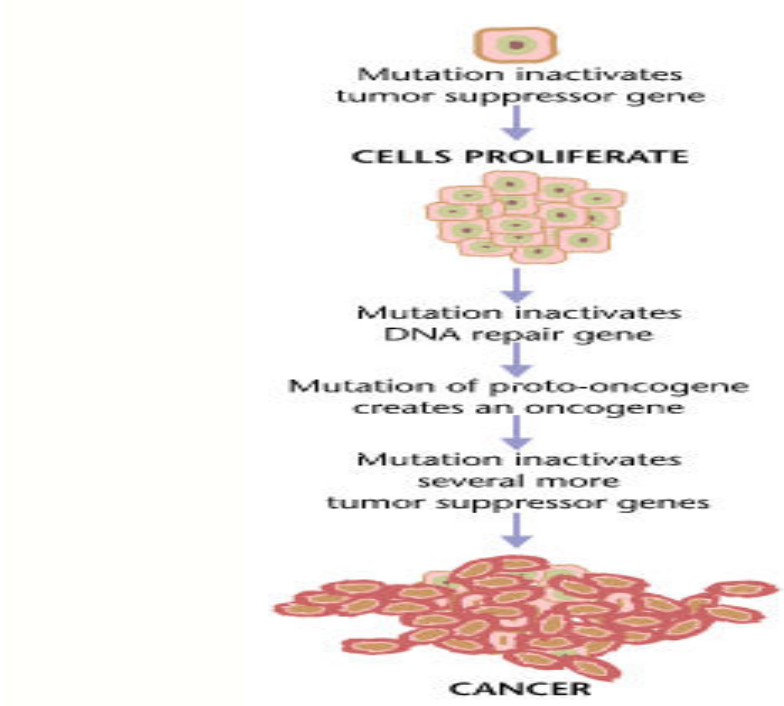


Fig:1.1 Cancer formation from abnormal cells division.

Cancerous tumors can be of malignant or benign types. Malignant cells are deleterious (can spread into, or invade, nearby tissues), however benign tumors do not spread into, or invade, nearby tissues. Benign tumors can sometimes be quite large, don't grow back after surgical removal. However, benign tumors can be of life threatening if it grows in the brain(*National Cancer Institute*, 2014).

Breast cancer and cervical cancer- two important types of cancers commonly occur in women (Gozum and Aydin 2004; Cam and Babacan Gumus 2006; Ozdemir and Bilgili, 2010).When cancer starts in the breast, it is called breast cancer.Women should undergo breast cancer screening before she has any symptom. an X-ray picture of the breast, gives the best way to find breast cancer early, when it is easier to treat and before it is big enough to feel or cause symptoms.

Cervical cancer starts in the cervix that connects the vagina (birth canal) to the upper part of the uterus (or womb). The human papillomavirus (HPV) is the main cause of cervical cancer. Cervical cancer is highly preventable in most Western countries because screening tests and a vaccine to prevent HPV infections are readily available. When cervical cancer is found early, it is highly treatable and associated with long survival and good quality of life.

Among all cancers, breast cancer is the most commonly occurred cancers in women population and also the one that causes most deaths in the world (Ozmen et al., 2009; Globocan, 2012; AydinAvci et al., 2014). One of every four women with cancer in the world has breast cancer (Globocan, 2012). According to the American Cancer Society (ACS), breast cancer is the most common form of cancer among women with 57,650 newly diagnosed cases of in situ breast cancer and 39,520 cases of death from breast cancer (ACS, 2014; Tuna, 2014).

On the other hand, cervical cancer is the second most prevalent cancer and third most common type of cancer after breast and lung cancers among women (Sogukpinar et al., 2013). Cervical cancer is excessively high among the rising countries where 85% of the estimated 493, 000 new cases and 273, 000 deaths around the world (Ali et al., 2012).

Effective cancer treatment depends on early diagnosis that can provide effective treatment, prolong life span and quality of life of a person and family.

1.2 Differences between Cancer Cells and Normal Cells

The main difference between cancer cells and normal cells are-

- Cancerous cells grow out of control and are invast vein nature.
- Cancer cells are less specialized than normal cells (i.e. when normal cells mature they developed to the very distinct cell types that possesses specific functions), whereas cancer cells lack of this property and they continue to divide without stopping.
- Cancer cells are capable to ignore signals to stop dividing, programmed cell death, or apoptosis.
- In some instances, normal cells, molecules, and blood vessels surround to nourish a tumor—an area known as the microenvironment. In this case, these healthy cells can be influenced by cancer cells, e.g. cancer cells can encourage neighboring regular cells to form blood vessels to supply oxygen, nutrients to the tumor and removal of waste products from that area.
- Cancer cells are capable to escape the immune system (National Cancer Institute,2014).

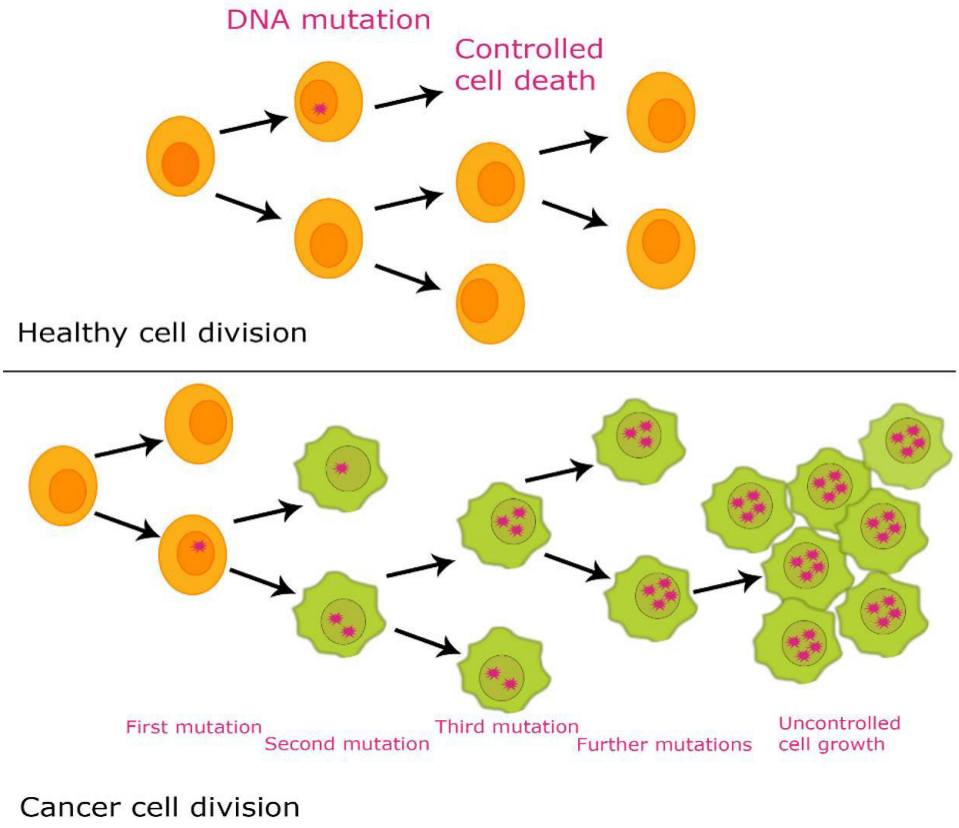


Figure : 1.2 Cell division in healthy and cancer cells.

1.3 How does cancer occur

There are many ways to develop cancer in the body-

1. Cancer could be a genetic disease.
2. Certain environmental exposures(i.e. such as the chemicals in tobacco smoke, and radiation, such as ultraviolet rays from the sun) can also result in cancer by initiating errors in cells divide or because of damage to DNA.
3. The genetic variations that contribute to cancer have a tendency to affect three principal genes—proto-oncogenes, tumor suppressor genes, and DNA repair genes.(National Cancer Institute,2014).

1.4 The normal breast

To understand better about breast cancer one should first know about the anatomy of a normal breast. As women are the principal victims of breast cancer, here we'll discuss the anatomy of a female breast. A female breast is made up of-

- Lobules-The glands that produces milk.
- Ducts- These are the tiny tubes that carry the milk from the lobules to the nipple.
- Stroma- These are the fatty tissue and connective tissue surrounding the ducts and lobules, blood vessels, and lymphatic vessels.
- Blood vessels- Numerous blood vessels are found in breast to supply nutrition, O_2 to the cells and out CO_2away from the cells present in the breast.

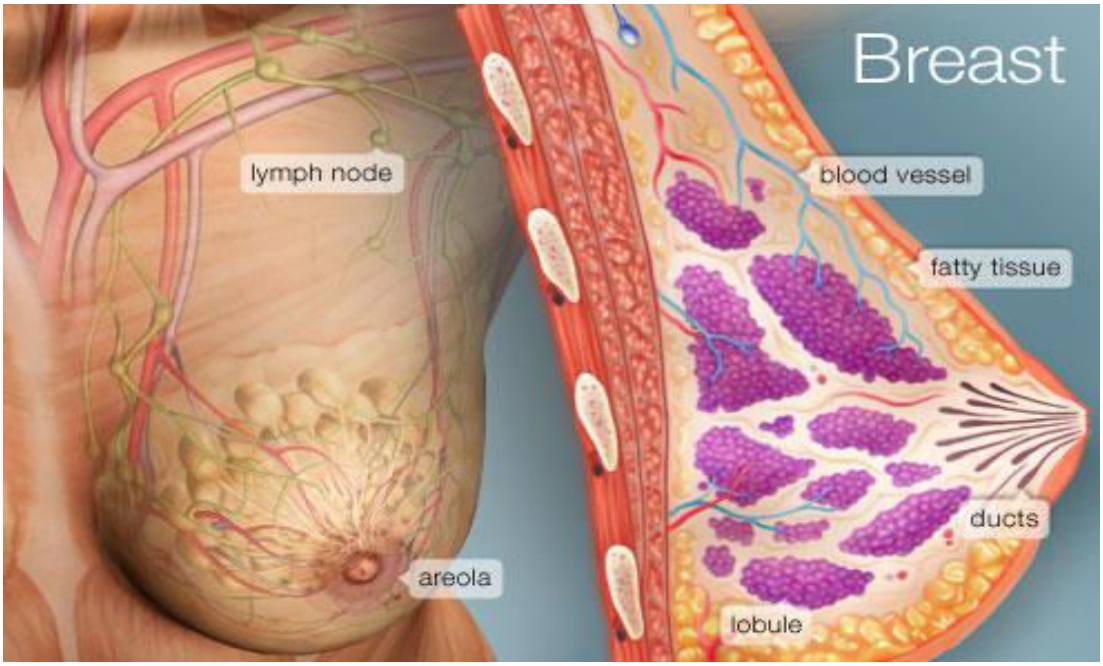


Figure:1.4 Normal breast tissue

Breast cancer develops mainly in the cells that line the ducts and causes ductal cancers. In some case cancer begins in the cells that line the lobules, which is known as lobular cancers. Very few cancers happen in other tissues of the breast (National Institutes of Health, 2006).

1.5 The lymphatic system of the breast

The lymphatic system is also found in the breast. This system could also play important role in spreading breast cancer, therefore it is also vital to know about this system. This system consists of -

- ✓ **Lymph nodes :**The small, bean-shaped collections of immune system cells in the breast that are connected by lymphatic vessels (Breastcancercampaign.org, 2014).
- ✓ **Lymphatic vessels :**Lymphatic vessels consist of small veins; unlike blood vessels these lymphatic veins carry a clear fluid called lymph away from the breast. Lymph contains tissue fluid and waste products, as well as immune system cells. When breast cancer cells come in lymphatic vessels and they begin to divide in lymph nodes (Breastcancercampaign.org, 2014).After that cancer cells spread in the lymph nodes, they can also move to the bloodstream and spread (metastasized) to other parts in the body. Hence, the more breast cancer cells spread to the lymph nodes, the more likely the cancer cells to be found in other organs of the body. Thus, finding cancer in one or more lymph nodes, direct the treatment strategy. In some women, it is found that cancer cells invaded their lymph nodes and contributed metastases. However, without lymph nodes invasion, cancer cells can also travel to other parts of the body (i.e. metastasis)in some women (Breastcancercampaign.org, 2014).

1.6 Breast cancer

Breast cancer is the cancer that occurs in the cells of the breasts. It can be stated as the formation of malignant tumor in the breast. Breast cancer can begin in the cells of the lobules (milk-producing glands), or the ducts that passages the milk from the lobules to the nipple. Stromal tissues that include the fatty and fibrous connective tissues in the breast are less commonly to cause cancer. Although women are the principal victim of this disease. Extensive awareness and research in this field has helped improve the screening and diagnosis and advances in the treatment of breast cancer. Hence survival rates from this deleterious disease have increased. Nowadays death rate is declining steadily, which is the consequences of a number of factors such as earlier detection, a new personalized approach to treatment and a better understanding of the disease etc(Cancer.org, 2016).

1.7 Signs and Symptoms

To increase the awareness among common people we need to know about the signs and symptoms of breast cancer that may include:

- ✓ A breast lump or thickening that feels different from the surrounding tissue.
- ✓ Bloody discharge from the nipple.
- ✓ Change in the size, shape or appearance of a breast.
- ✓ Changes to the skin over the breast, such as dimpling.
- ✓ A newly inverted nipple.
- ✓ Peeling, scaling or flaking of the pigmented area of skin surrounding the nipple (areola) or breast skin.
- ✓ Skin of an orange, i.e. redness or pitting of the skin over your breast.

Therefore, it is suggested that any abnormality, i.e. a lump or other change in breast, even though the person has a recent normal mammographic result, s/he person should see a doctor for further investigation.

1.8 Causes of Breast Cancer

An extensive research is going on. However, till now the underlying causes of breast cancer is not that clear. The research is showing that this life threatening cancer occurs when some breast cells begin growing atypically. These cells divide more promptly than healthy cells do and endure to gather, developing a lump or mass. The cells may metastasize through the breast to the lymph nodes or finally to other parts of the body. Breast cancer most often commences with cells in the milk-producing ducts (invasive ductal carcinoma). Breast cancer may also initiate in the glandular tissue known as lobules (invasive lobular carcinoma) or in other cells or tissue within the breast. Studies showed that hormonal imbalance, lifestyle and environmental factors contributes to the increased risk of breast cancer. However, research does not clearly reveal why some people without any risk factors develop cancer, while other people with risk factors do not develop the disease. It is anticipated that breast cancer is possibly caused by a multifaceted interaction of genetic and environment factors.

1.9 Risk factors

Breast cancer may result from a wide variety of risk factors. However, the presence of one or even several risk factors does not always develop breast cancer in a person. There are many women who developed breast cancer had no common risk factors. More research should be conducted on breast cancer development. Some common breast cancer risk factors are listed below:

- ✓ **Being female:** Women are much more likely to develop breast cancer than men.
- ✓ **Increasing age:** As age the risk to develop breast cancer increases.

- ✓ **A personal history of breast cancer:** If a person had breast cancer in one breast, s/he has an increased risk to develop breast cancer in other breast.

- ✓ **A family history of breast cancer:** If the mother, sister or daughter of a person is diagnosed with breast cancer, predominantly at a young age, s/he is at the increased risk of having breast cancer..

- ✓ **Inherited genes that increase cancer risk:** Breast cancer can be hereditary. There are certain genes that get mutated, which increase the risk of breast cancer and this can be passed from parents to children. BRCA1 and BRCA2 are two most common gene that get mutated to develop breast cancer.

- ✓ **Radiation exposure:** Breast cancer can be result from exposure to the radiation. Thus treatments to chest as a child or young adult increases the risk of developing breast cancer.

- ✓ **Obesity:** Obese people are more prone to develop breast cancer.

- ✓ **Beginning menopause at an older age:** If menopause begins at an older age, the woman is more likely to develop breast cancer.

- ✓ **Having first child at an older age:** Women's first child bearing age may also contribute to develop breast cancer. Women who give birth to their first child after age 35 may have an increased risk of breast cancer.

- ✓ **Having never been pregnant:** Women who have never been pregnant are at the increased risk of developing breast cancer compared to women who have had one or more pregnancies.

- ✓ **Postmenopausal hormone therapy:** Women under hormone therapy medications (combination of estrogen and progesterone to treat the signs and symptoms of menopause) are at the increased risk of having breast cancer. However, the risk of breast cancer decreases with when she stops taking these medications.

- ✓ **Drinking alcohol:** People drinking alcohol are at increased risk of developing breast cancer.

1.10 Tests and diagnosis

Breast cancer treatments are advancing with time. Currently a number of diagnostic tools are available to diagnose breast cancer. The commonly used diagnostic tools are given below-

- ✓ **Self-diagnosis:** The breast self-exam is a way of checking the breasts for changes (such as lumps or thickenings). It includes looking at and feeling the breast. Any unusual changes should be reported to the doctor (Cancer.org, 2014).
- ✓ **Breast exam:** The doctor will check both breasts and lymph nodes in the armpit to see if there is any lumps or other abnormalities are present in that part.
- ✓ **Mammogram:** A mammogram is an X-ray of the breast. This technique is commonly used to screen for breast cancer. After abnormality is detected on a screening mammogram, the doctor may recommend further diagnostic mammogram to see the what kind of abnormality .
- ✓ **Breast ultrasound:** Ultra sound is a useful tool to diagnose any changes in the body by utilizing a sound waves to produce an images in the deep organ. The difference between a solid mass and a fluid-filled cyst can be detected by this technique. Thus the formation of a new lump can be diagnosed by this technique which says many important information about breast cancer condition.
- ✓ **Biopsy of a sample of breast cells for testing:** Biopsy of a samples taken from the breast can be send to a diagnostic laboratory for further analysis by the experts to conclude whether these cells are cancerous or benign in nature. This diagnostic tool can also say what type of cells are involved in developing the breast cancer, the aggressiveness (grade) of the cancer, and whether the cancer cells have hormone receptors or other receptors etc. All the information would be very helpful to move further with the treatment options.

- ✓ **Magnetic resonance imaging (MRI) of breast:** An MRI machine uses a magnet and radio waves to create pictures of the interior the breast after injecting a dye in the body(Cancer Research UK,2016).

1.11 Staging breast cancer

Once doctor has diagnosed breast cancer, he or she works to establish the extent (stage) of cancer. Cancer's stage helps determine your prognosis and the best treatment options.

- ✓ Blood tests, such as a complete blood count.
- ✓ Mammogram of the other breast to look for signs of cancer
- ✓ Breast MRI.
- ✓ Bone scan.
- ✓ Computerized tomography (CT) scan.
- ✓ Positron emission tomography (PET) scan.

Treatment option is not same for every patient. It depends on the disease condition. Based on the specific circumstances and new symptoms that a person is being experiencing, doctor can decide on the appropriate examinations.

1.12 Stages of breast cancer

Breast cancer has different stages based on the size of the tumor and its presence in lymph nodes or other parts of the body. Stages of breast cancer are denoted by roman numerals 0, I, II, III, and IV and the letters A, B, and C. When breast cancer is its early-stage it is stated as Stage I cancer and when a cancer goes to its advanced stage it is called as Stage IV cancer. At stage IV cancer has spread to other parts of the body, such as the liver or lungs etc. This stage cannot be determined until the patient undergoes a surgery to remove the tumor and/or one or more underarm lymph nodes in the breast

(Breastcancercampaign.org, 2014).Below is the table that will give a better understanding of different stages of breast cancer-

Stages	Condition
Stage 0	Cancer cells remain inside the breast duct, without invasion into normal adjacent breast tissue
Stage IA	The tumor measures up to 2 cm and the cancer has not spread outside the breast. No lymph nodes are involved.
Stage IB	There is no tumor in the breast; instead, small groups of cancer cells larger than 0.2 millimeter but not larger than 2 millimeters are found in the lymph nodes, or there is a tumor in the breast that is no larger than 2 centimeters, and there are small groups of cancer cells – larger than 0.2 millimeter but not larger than 2 millimeters – in the lymph nodes.
Stage IIA	No tumor can be found in the breast, but cancer cells are found in the axillary lymph nodes the tumor measures 2 centimeters or smaller and have spread to the axillary lymph nodes or the tumor is larger than 2 but no larger than 5 centimeters and has not spread to the axillary lymph nodes.
Stage IIB	The tumor is larger than 2 but no larger than 5 centimeters and has spread to the axillary lymph nodes, or the tumor is larger than 5 centimeters but has not spread to the axillary lymph nodes.
Stage IIIA	No tumor is found in the breast. Cancer is found in axillary lymph nodes that are sticking together or to other structures, or cancer may be found in lymph nodes near the breastbone, or the tumor is any size. Cancer has spread to the axillary lymph nodes, which are sticking together or to other structures, or cancer may be found in lymph nodes near the breastbone.
Stage IIIB	The tumor may be any size and has spread to the chest wall and/or skin of the breast.May have spread to axillary lymph nodes that are clumped together or

	sticking to other structures, or cancer may have spread to lymph nodes near the breastbone.
Stage IIIC	There may either be no sign of cancer in the breast or a tumor may be any size and may have spread to the chest wall and/or the skin of the breast. The cancer has spread to lymph nodes either above or below the collarbone. The cancer may have spread to axillary lymph nodes or to lymph nodes near the breastbone.
Stage IV	The cancer has spread or metastasized to other parts of the body.

Table 1.12 Different stages of Breast Cancer (Yelena Bird et al,2010).

1.13 Treatments of Breast Cancer

Breast cancer specialist doctor decides a patient's breast cancer treatment preferences based on the type of breast cancer, its stage and grade, size, and whether the cancer cells are sensitive to hormones. The doctor also considers a patient's overall health and own preferences. Most women undergo surgery for breast cancer and also receive additional treatment before or after surgery, such as chemotherapy, hormonal therapy or radiation. There are many options for breast cancer treatment, and one must feel overwhelmed as he or she makes complex decisions about treatment (Womens Health. Org, 2016).

1.13.1 Breast cancer surgery

Operations used to treat breast cancer include:

- **Removing the breast cancer (lumpectomy).** During lumpectomy (breast-sparing surgery or wide local excision), the surgeon eliminates the tumor and a small margin of surrounding healthy tissue. For smaller tumors, lumpectomy is suggested.
- **Removing the entire breast (mastectomy).** Mastectomy is surgery to remove all of the breast tissue. Most mastectomy procedures remove all of the breast tissues.

These are- the lobules, ducts, fatty tissue and some skin, including the nipple and areola (simple mastectomy).In a skin-sparing mastectomy, the skin over the breast is left intact to improve reconstruction and appearance. Depending on the location and size of the tumor, the nipple may also be spared.

- **Removing a limited number of lymph nodes (sentinel node biopsy).** To determine whether cancer has spread to the lymph nodes, the surgeon will discuss with the patient about the role of removing the lymph nodes that are the first to receive the lymph drainage from the tumor. If no cancer is found in those lymph nodes, the chance of finding cancer in any of the remaining lymph nodes is small and no other nodes need to be removed.

- **Removing several lymph nodes (axillary lymph node dissection).** If cancer is found in the sentinel node, the surgeon will discuss with the patient about the role of removing additional lymph nodes in your armpit.

- **Removing both breasts.** Some women with cancer in one breast may choose to have their other (healthy) breast removed (contra lateral prophylactic mastectomy) if they have a very increased risk of cancer in the other breast because of a genetic predisposition or strong family history (Cancer Research UK,2016) .

1.13.2 Radiation Therapy

Radiation therapy uses high-powered beams of energy, such as X-rays, to kill cancer cells. Radiation therapy is typically done using a large machine that aims the energy beams at the body (external beam radiation). But radiation can also be done by placing radioactive material inside the body (brachy therapy).

External beam radiation is commonly used after lumpectomy for early-stage breast cancer. Doctors may also recommend radiation therapy to the chest wall after mastectomy for larger breast cancers or cancers that have spread to the lymph nodes.

Side effects of radiation therapy include fatigue and a red, sunburn-like rash where the radiation is aimed. Breast tissue may also appear swollen or more firm. Rarely, more-serious problems may occur, such as damage to the heart or lungs or, very rarely, second cancers in the treated area (National Cancer Institute,2016).

1.13.3 Chemotherapy

Chemotherapy uses drugs to destroy cancer cells. If cancer has a high risk of returning or spreading to another part of body, doctor may recommend chemotherapy to decrease the chance that the cancer will recur. This is known as adjuvant systemic chemotherapy. Chemotherapy is sometimes given before surgery in women with larger breast tumors. The goal is to shrink a tumor to a size that makes it easier to remove with surgery. Chemotherapy is also used in women whose cancer has already spread to other parts of the body. Chemotherapy may be recommended to try to control the cancer and decrease any symptoms the cancer is causing.

Chemotherapy side effects depend on the drugs you receive. Common side effects include hair loss, nausea, vomiting, fatigue and an increased risk of developing infection. Rare side effects can include premature menopause, infertility (if premenopausal), damage to the heart and kidneys, nerve damage, and very rarely, blood cell cancer (National Cancer Institute,2016).

1.13.4 Hormone therapy

Hormone therapy — perhaps more properly termed hormone-blocking therapy , is often used to treat breast cancers that are sensitive to hormones. Doctors sometimes refer to these cancers as estrogen receptor positive (ER positive) and progesterone receptor positive (PR positive) cancers.

Hormone therapy can be used after surgery or other treatments to decrease the chance of your cancer returning. If the cancer has already spread, hormone therapy may shrink and control it. Treatments that can be used in hormone therapy include:

1.13.4.1 Medications that block hormones from attaching to cancer cells Selective estrogen receptor modulator (SERM) medications act by blocking estrogen from attaching to the estrogen receptor on the cancer cells, slowing the growth of tumors and killing tumor cells.

- SERMs include tamoxifen, raloxifene (Evista) and toremifene (Fareston).
- Possible side effects include hot flashes, night sweats and vaginal dryness. More-significant risks include blood clots, stroke, uterine cancer and cataracts(National Cancer Institute,2016).

1.13.4.2 Medications that stop the body from making estrogen after menopause- Called aromatase inhibitors, these drugs block the action of an enzyme that converts androgens in the body into estrogen. These drugs are effective only in postmenopausal women.

- Aromatase inhibitors include anastrozole (Arimidex), letrozole (Femara) and exemestane (Aromasin).
- Side effects include hot flashes, night sweats, vaginal dryness, joint and muscle pain, as well as an increased risk of bone thinning (osteoporosis).

1.13.4.3 A drug that targets estrogen receptors for destruction- The drug fulvestrant (Faslodex) blocks estrogen receptors on cancer cells and signals to the cell to destroy the receptors. Fulvestrant is used in postmenopausal women. Side effects that may occur include nausea, hot flushes and joint pain.

1.13.4.4 Surgery or medications to stop hormone production in the ovaries- In premenopausal women, surgery to remove the ovaries or medications to stop the ovaries from making estrogen can be an effective hormonal treatment.

1.13.5 Targeted drugs

Targeted drug treatments attack specific abnormalities within cancer cells. Targeted drugs used to treat breast cancer include:

- **Trastuzumab (Herceptin).** Some breast cancers make excessive amounts of a protein called human growth factor receptor 2 (HER2), which helps breast cancer cells grow and survive. If breast cancer cells make too much HER2, trastuzumab may help block that protein and cause the cancer cells to die. Side effects may include headaches, diarrhea and heart problems.

- **Pertuzumab (Perjeta).** Pertuzumab targets HER2 and is approved for use in metastatic breast cancer in combination with trastuzumab and chemotherapy. This combination of treatments is reserved for women who haven't yet received other drug treatments for their cancer. Side effects ofpertuzumab may include diarrhea, hair loss and heart problems.

- **Ado-trastuzumab (Kadcyla).** This drug combines trastuzumab with a cell-killing drug. When the combination drug enters the body, the trastuzumab helps it find the cancer cells because it is attracted to HER2. The cell-killing drug is then released into the cancer cells. Ado-trastuzumab may be an option for women with metastatic breast cancer who've already tried trastuzumab and chemotherapy.

- **Lapatinib (Tykerb).** Lapatinib targets HER2 and is approved for use in advanced or metastatic breast cancer. Lapatinib can be used in combination with chemotherapy or hormone therapy. Potential side effects include diarrhea, painful hands and feet, nausea, and heart problems.

- **Bevacizumab (Avastin).** Bevacizumab is no longer approved for the treatment of breast cancer in the United States. Research suggests that although this medication may help slow the growth of breast cancer, it doesn't appear to increase survival times (National Breast Cancer, 2016).

1.14 Prevention

Breast cancer risk reduction for women with an average risk

Making changes in daily life may help reduce risk of breast cancer. Try to:

- **Asking doctor about breast cancer screening-** Discuss with doctor when to begin breast cancer screening exams and tests, such as clinical breast exams and mammograms. Talk to doctor about the benefits and risks of screening. Together, that can decide what breast cancer screening strategies are right .

- **Performing breast self-exam for breast awareness-** Women may chose to become familiar with their breasts by occasionally inspecting their breasts during a breast self-exam for breast awareness. If there is a new change, lumps or other unusual signs in breasts, it will help if he or she contacted with the physician.

- **Drinking alcohol in moderation, if at all-** Limit the amount of alcohol drink to less than one drink a day, if choose to drink.

- **Limiting postmenopausal hormone therapy-** Combination hormone therapy may increase the risk of breast cancer. Doctor should be consulted. To reduce the risk of breast cancer, use the lowest dose of hormone therapy possible for the shortest amount of time.

- **Healthy weight maintenance-** Reduce the number of calories each day and slowly increase the amount of exercise.

- **Healthy diet maintenance**- Women who eat a Mediterranean diet supplemented with extra-virgin olive oil and mixed nuts may have a reduced risk of breast cancer. The Mediterranean diet focuses mostly on plant-based foods, such as fruits and vegetables, whole grains, legumes and nuts. People who follow the Mediterranean diet choose healthy fats, like olive oil, over butter and fish instead of red meat (Metcalfe,2002).

1.15 Breast cancer risk reduction for women with a high risk :

- **Preventive medications (chemoprevention)-**Estrogen-blocking medications may help reduce the risk of breast cancer. Options include tamoxifen and raloxifene (Evista). Aromatase inhibitors have shown some promise in reducing the risk of breast cancer in women with a high risk.

These medications carry a risk of side effects, so doctors reserve these medications for women who have a very high risk of breast cancer. Discuss the benefits and risks with doctor.

- **Preventive surgery-** Women with a very high risk of breast cancer may choose to have their healthy breasts surgically removed (prophylactic mastectomy). They may also choose to have their healthy ovaries removed (prophylactic oophorectomy) to reduce the risk of both breast cancer and ovarian cancer (Medscape,2016).

1.16 Inherited Breast Cancer

Doctors estimate that only 5 to 10 percent of breast cancers are linked to gene mutations passed through generations of a family. A number of inherited mutated genes that can increase the likelihood of breast cancer have been identified. The most common are breast cancer gene 1 (BRCA1) and breast cancer gene 2 (BRCA2), both of which significantly increase the risk of both breast and cervical cancer(Martin,2000).

1.17 Breast Cancer Prevalence Around the World

Breast cancer is the most common cause of death of women in the world. Like other countries, in the USA, women are also dying because of breast cancer. It is reported that, in 2012, 1.7 million women were identified with breast cancer and there were 6.3 million women who had been detected with breast cancer in the over the last five years. This notorious disease killed 522 000 people in 2012 and the most frequently diagnosed cancer among women in 140 of 184 countries worldwide. This rate is seriously alarming. From 2008 to till now, studies showed that breast cancer occurrence has augmented by more than 20%, while mortality has raised by 14%. However, because of the advancement of the treatment facilities, earlier detection through screening, and increased awareness (American cancer society, 2014) the rate of mortality id going down. In general, developed countries (such as the U.S., England and Australia) have higher rates

than developing countries (such as Cambodia, Nepal and Rwanda). Women who live in developed countries also tend to have a higher lifetime risk of breast cancer than women who live in developing countries. Although we donot know all the reasons for these differences, lifestyle and reproductive factors likely play a large role. Low screening rates and incomplete reporting can make rates of breast cancer in developing countries look lower than they truly are and may also explain some of the difference (Cancer Research UK, 2015).

1.18 Breast Cancer Prevalence in Bangladesh

Like any other countries, breast cancer rate is also raising day by day in Bangladesh. WHO report reveals that, Bangladesh ranked 2nd in terms of mortality rate of women from breast cancer. Cancer specialist Prof Mahbubul Alam said around three-fourth of women aged over 50 in the country are at the risk of developing breast cancer. The prevalence of the disease is irrelevant to the marital status. Unmarried women are at high risk of breast cancer. However, if detected early, disease development can be cured completely (National Prof Dr. MR Khan, archive.thedailystar.net, 2014). Research showed that 22.5 per 100,000 females of all ages are developing breast cancerin Bangladesh. On the other hand, breast cancer is occurring around 124.8 per 100,000 females worldwide. Bangladesh Breast Cancer Awareness Forum is working to raise awareness among the women about the risk factor and treatment of breast cancer. Several steps have been taken to create awareness and significant improvement has been achieved in this issue. Considering this, 2nd Thursday of October every year is declared as the breast cancer awareness day in Bangladesh. The purpose of the day is to raise awareness on breast cancer (Green watch, 2013).The mortality rate by stage of breast cancer is given below in table 1. This study was carried out by American Cancer Society-

Mortality rate of breast cancer Stage	5-year relative survival rate
0	100 %
I	100%
IIA	92%
IIB	81%
IIIA	67%
IIIB	54%
IIIC	20%

Table 1:17 Mortality rate of Breast Cancer stages.

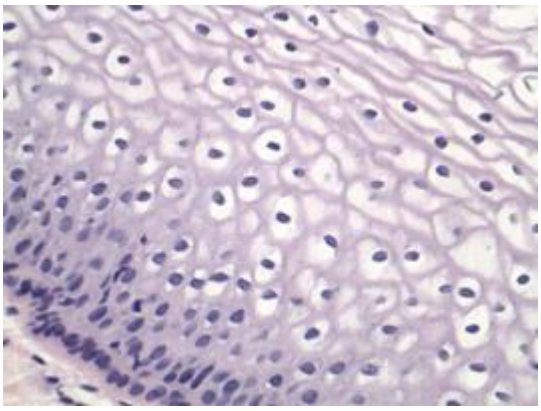
1.19 Cervical cancer

Cervical cancer is another important category of cancer that occurs in the cells of the cervix, i.e. the lower part of the uterus that links to the vagina. Cervical cancer could be developed by various strains of the human papilloma virus (HPV), a sexually transmitted infection. When exposed to HPV, a woman's immune system typically prevents the virus from doing any detrimental work. However, the virus survives for years, contributing to the process that causes some cells on the surface of the cervix to become cancer cells in some women. The risk of developing cervical cancer can be reduced by having screening tests and receiving a vaccine that protects against HPV infection. To understand better about cervical cancer one first needs to know the cervix, which is the lower, narrow part of the uterus. The uterus holds the growing fetus during pregnancy. The cervix can joints the lower part of the uterus to the vagina and, with the vagina, forms the birth canal (Shepherd,2000).

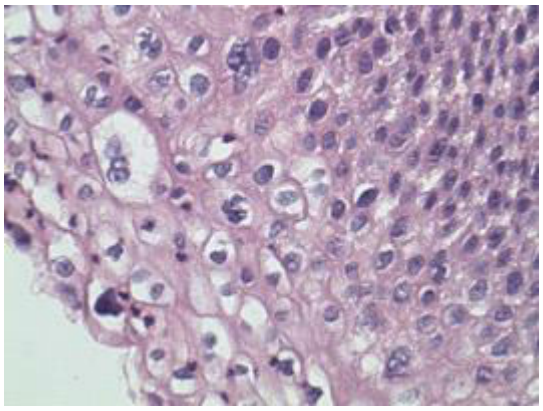
1.20 Pre-cancer and cervical cancer

When normal cells on the surface of the cervix change and grow uncontrollably, forming a mass called a tumor cervical cancer start its deleterious journey. A tumor can be of two types, i.e. cancerous or benign. A cancerous tumor is malignant, meaning it can spread to other parts of the body. A benign tumor means the tumor will not spread.

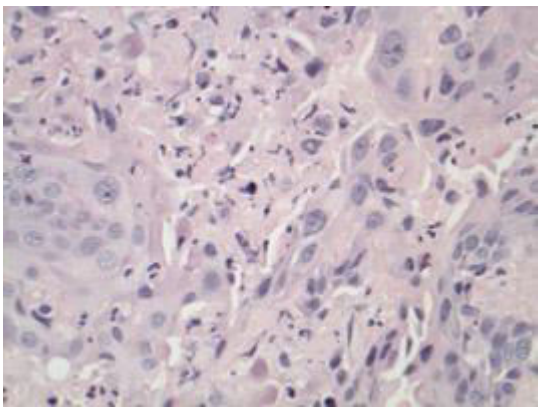
Initially, an abnormal changes begin in healthy cells. However, some of these abnormal changes can initiate a series of slow changes that can lead to cancer. Some of the abnormal cells go away without treatment, but others can become cancerous. This phase of the disease is called dysplasia, which is an abnormal growth of cells. The abnormal cells, sometimes called precancerous tissue, need to be removed to keep cancer from developing. Often, the precancerous tissue can be removed or destroyed without harming healthy tissue, but in some cases, a hysterectomy (removal of the uterus and cervix) is needed to prevent cervical cancer (Burd, 2003).



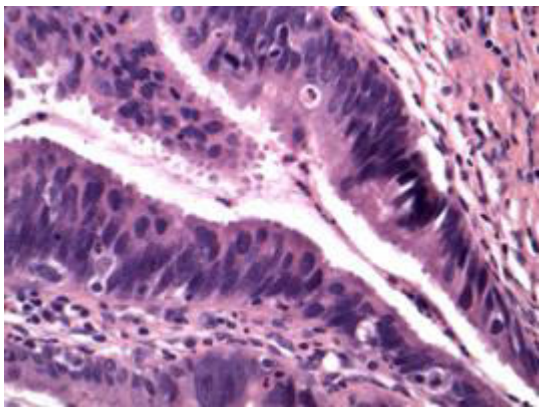
Normal cervical tissue



Mild cervical dysplasia



Invasive cervical squamous carcinoma



Adeno carcinoma in situ of endo cervix

Figure 7: Different changes in cervical cells to develop cervical cancer.

Treatment of a lesion, which is a precancerous area, depends on the following factors:

- The size of the lesion and the type of changes that have occurred in the cells
- If the woman wants to have children in the future
- The woman's age
- The woman's general health
- The preference of the woman and her doctor

If the precancerous cells change into true cancer cells and spread deeper into the cervix or to other tissues and organs, then the disease is called cervical cancer.

There are two main types of cervical cancer, named for the type of cell where the cancer started. Other types of cervical cancer are rare.

- Squamous cell carcinoma, which makes up about 80% to 90% of all cervical cancers
- Adenocarcinoma, which makes up 10% to 20% of all cervical cancers

1.21 Types of cervical cancer

There are two main types of cervical cancer: squamous cell carcinoma and adenocarcinoma. Each one is distinguished by the appearance of cells under a microscope.

- **Squamous cell carcinomas-** Begin in the thin, flat cells that line the bottom of the cervix. This type of cervical cancer accounts for 80 to 90 percent of cervical cancers.
- **Adenocarcinomas-**Develop in the glandular cells that line the upper portion of the cervix. These cancers make up 10 to 20 percent of cervical cancers.

Sometimes, both types of cells are involved in cervical cancer. Other types of cancer can develop in the cervix, but these are rare.

- **Metastatic cervical cancer** is cancer that has spread to other parts of the body.

Two types of cells line the surface of the cervix, and both can become cancerous. One type (glandular cells) has a column-shaped appearance. The other type (squamous cells) is thin and flat. The boundary between the two types of cells is where cervical cancer most commonly occurs (National Cancer Institute,2016).

1.22 Symptoms of Cervical Cancer

The common symptoms of cervical cancer may include:

- **Unusual vaginal discharge:** A watery, pink or foul-smelling discharge is common.
- **Pelvic pain:** Pain during intercourse or at other times may be a sign of abnormal changes to the cervix, or less serious conditions.
- **Vaginal bleeding:** This includes bleeding between periods, after sexual intercourse or post-menopausal bleeding.

1.23 Symptoms of Advanced Stages of Cervical Cancer

Cervical cancer may spread (metastasize) within the pelvis, to the lymph nodes or elsewhere in the body. Signs of advanced cervical cancer include:

- Fatigue
- Weight loss
- Leakage of urine or feces from the vagina
- Back pain

- Leg pain or swelling
- Bone fractures

Cervical cancer starts from the healthy cells in the cervix. these cells grow and multiply at a set rate, eventually dying at a set time. However, cancer cells grow and proliferate out of control, and they don't die naturally. The accumulating abnormal cells form a mass forms a tumor. Cancer cells attack nearby tissues and can disrupt the tumor mass to spread/metastasize in another place in the body.

Till now, it's not clear what causes cervical cancer, but it's certain that HPV plays a role. HPV is very common, and most women with the virus never develop cervical cancer. This means other factors such as environment or lifestyle choices also determine whether develop cervical cancer or not (Healthline,2016).

1.24 Risk Factors of Cervical cancer

- **Pregnancy:** Women who have had three or more full-term pregnancies, or who had their first full-term pregnancy before age 17, are twice as likely to get cervical cancer.
- **Family history:** Women with a sister or mother who had cervical cancer are two to three times more likely to develop cervical cancer.
- **Sexual history:** Certain types of sexual behavior are considered risk factors for cervical cancer and HPV infection. These include: sex before age 18, sex with multiple partners and sex with someone who has had multiple partners. Studies also show a link between chlamydia infection and cervical cancer.
- **Smoking:** A woman who smokes are risk of cervical cancer.
- **Oral contraceptive use:** Women who take oral contraceptives for more than five years have an increased risk of cervical cancer, but this risk returns to normal within a few years after the pills are stopped.

- **Weakened immune system:** In most people with healthy immune systems, the HPV virus clears itself from the body within 12-18 months. However, people with HIV or other health conditions or who take medications that limit the body's ability to fight off infection have a higher risk of developing cervical cancer.

- **Diethylstilbestrol (DES):** Women whose mothers took DES, a drug given to some women to prevent miscarriage between 1940 and 1971, have a higher risk of developing cervical cancer.

- **HPV:** Though HPV causes cancer, having HPV does not mean that onewill get cancer. The majority of women who contract HPV clear the virus or have treatment so the abnormal cells are removed. HPV is a skin infection, spread through skin-to-skin contact with a person who has the virus. Learn about the HPV vaccine to prevent HPV infections.

  Some important facts about HPV:

- ✓ There are more than 100 types of HPV, 30-40 of which are sexually transmitted.

- ✓ Of these, at least 15 are high-risk HPV strains that can cause cervical cancer. The others cause no symptoms or genital warts.

- ✓ Up to 80 percent of women will contract HPV in their lifetime. Men get HPV, too, but there is no test for them.

- ✓ A healthy immune system will usually clear the HPV virus before there is a symptom, including the high-risk types of HPV.

- ✓ Only a small percentage of women with high-risk HPV develop cervical cancer (National Cancer Institute,2016).

1.25 Tests and diagnosis:

1.25.1 Screening

Cervical cancer that is detected early is more likely to be treated successfully. Most guidelines suggest that women begin screening for cervical cancer and precancerous changes at age 21.

Screening tests include:

- **Pap test.** During a Pap test, doctor scrapes and brushes cells from cervix, which are then examined in a lab for abnormalities. A Pap test can detect abnormal cells in the cervix, including cancer cells and cells that show changes that increase the risk of cervical cancer.
- **HPV DNA test.** The HPV DNA test involves testing cells collected from the cervix for infection with any of the types of HPV that are most likely to lead to cervical cancer. This test may be an option for women age 30 and older, or for younger women with an abnormal Pap test.

1.25.2 Diagnosis

If cervical cancer is assumed doctor is likely to start with a thorough checkup of the cervix. A special magnifying instrument, i.e. colposcope is used to check for abnormal cells.

During the colposcopic checkup, doctor is likely to take a sample of cervical cells for biopsy. To obtain tissue, doctor may use:

- **Punch biopsy**, which involves using a sharp tool to pinch off small samples of cervical tissue.
- **End cervical curettage**, which uses a small, spoon-shaped instrument (curet) or a thin brush to scrape a tissue sample from the cervix.

If the punch biopsy worrisome, doctor may perform one of the following tests:

- **Electrical wire loop**, which uses a thin, low-voltage electrical wire to obtain a small tissue sample. Generally, this is done under local anesthesia in the office.
- **Cone biopsy**, which is a procedure that allows your doctor to obtain deeper layers of cervical cells for laboratory testing. Cone biopsy may be done in a hospital under general anesthesia.

1.26Staging of Cervical Cancer

Cervical cancer is staged using the TNM system:

- **Tumor (T)** describes the size of the original tumor.
- **Lymph Node (N)** indicates whether the cancer is present in the lymph nodes.
- **Metastasis (M)** refers to whether cancer has spread to other parts of the body, usually the liver, bones or brain.

Once the T, N and M scores have been determined, an overall cervical cancer stage is assigned.

Table 4: Different Stages of Cervical Cancer :-

Stages	Disease Condition
Stage 0	Stage 0 cervical cancer means that the cancer cells are confined to the surface of the cervix. This stage is also called carcinoma in situ (CIS) or cervical intraepithelial neoplasia (CIN) grade III (CIN III).
Stage I	In stage I cervical cancer, the cancer has grown deeper into the cervix, but has not spread beyond it. This stage is further separated into two subcategories:

	IA	There is a very small amount of cancer, less than 5 mm deep and less than 7 mm wide, that can only be seen under a microscope.
	IB	The cancer can be seen and measures 4 cm or less; or the cancer can only be seen under a microscope and measures more than 5 mm deep and 7 mm wide.
Stage II	Stage II cervical cancer means that the cancer has grown beyond the cervix and uterus, but has not reached the walls of the pelvis or the lower part of the vagina. In this stage of cervical cancer, the disease has not spread to lymph nodes or distant sites. Stage II has two additional subcategories:	
	IIA	The cancer has not spread into the tissues next to the cervix, the parametria, but it may have grown into the upper part of the vagina.
	IIB	The cancer has spread into the tissues next to the cervix, the parametria.
Stage III	Stage III cervical cancer means that the cancer has spread to the lower part of the vagina or the walls of the pelvis, but not to nearby lymph nodes or other parts of the body. This stage is separated into two subcategories:	
	IIIA	The cancer has spread to the lower third of the vagina, but not to the walls of the pelvis.
	IIIB	The cancer has grown into the walls of the pelvis and/or has blocked both ureters, but has not spread to the lymph nodes or distant sites. Or the cancer has spread to the lymph nodes in the pelvis, but not to distant sites.
Stage IV	In this cervical cancer stage, the disease has spread to nearby organs or other parts of the body. Stage IV is separated into two subcategories:	
	IVA	The cancer has spread to the bladder or rectum, but not to the lymph nodes or distant sites.

	IVB	The cancer has spread to organs beyond the pelvis, such as the lungs or liver.

Table: 1.26 Stages of Cervical Cancer

1.27 Treatments

Treatment for cervical cancer depends on several factors, such as the stage of the cancer, other health problems .Surgery, radiation, chemotherapy or a combination of the three may be used.

1.27.1 Surgery

Early-stage cervical cancer is typically treated with surgery to remove the uterus (hysterectomy). A hysterectomy can cure early-stage cervical cancer and prevent recurrence. But removing the uterus makes it impossible to become pregnant.

- **Simple hysterectomy.** The cervix and uterus are removed along with the cancer. Simple hysterectomy is usually an option only in very early-stage cervical cancer.
- **Radical hysterectomy.** The cervix, uterus, part of the vagina and lymph nodes in the area are removed with the cancer.

Minimally invasive surgery may be an option for early-stage cervical cancer .Surgery that preserves the possibility of becoming pregnant also may be an option, if you have very early-stage cervical cancer without lymph node involvement (Cancer Research Institute UK, 2016).

1.27.2 Radiation

Radiation therapy uses high-powered energy beams, such as X-rays, to kill cancer cells. Radiation therapy may be used alone or with chemotherapy before surgery to shrink a tumor or after surgery to kill any remaining cancer cells.

Radiation therapy can be given:

- Externally, by directing a radiation beam at the affected area of the body (external beam radiation therapy)
- Internally, by placing a device filled with radioactive material inside your vagina, usually for only a few minutes.
- Both externally and internally.

Premenopausal women may stop menstruating and begin menopause as a result of radiation therapy. If you might want to get pregnant after radiation treatment, ask your doctor about ways to preserve your eggs before treatment starts.

1.27.3 Chemotherapy

Chemotherapy uses medications, usually injected into a vein, to kill cancer cells. Low doses of chemotherapy are often combined with radiation therapy, since chemotherapy may enhance the effects of the radiation. Higher doses of chemotherapy are used to control advanced cervical cancer that may not be curable (New England Journal of Medicine,2016)

1.28Prevention of Cervical Cancer

1.28.1Risk can be reduced by :

- **Smoking Cessation.**
- **Getting vaccinated against HPV.** Vaccination is available for girls and women ages 9 to 26. The vaccine is most effective if given to girls before they become sexually active.
- **Practising safe sex.** Using a condom, having fewer sexual partners and delaying intercourse may reduce your risk of cervical cancer.

- **Having routine Pap tests.** Pap tests can detect precancerous conditions of the cervix, so they can be monitored or treated in order to prevent cervical cancer. Most medical organizations suggest women begin routine Pap tests at age 21 and repeat them every few years.

1.28.2 Recent research

Doctors are working to learn more about cervical cancer, ways to prevent it, how to best treat it, and how to provide the best care to women diagnosed with this disease. The following areas of research may include new options for patients through clinical trials. Always talk with doctor about the diagnostic and treatment.

1.29.2.1 Improved detection and screening methods- Because cervical cancer is highly treatable when detected early, researchers are developing better ways to detect pre-cancer and cervical cancer. For example, fluorescent spectroscopy is the use of fluorescent light to detect changes in precancerous cervix cells.

1.29.2.2 HPV prevention-As discussed in the Prevention section, the HPV vaccines help prevent infection from the HPV strains that cause most cervical cancer. Gardasil is also approved by the FDA for boys and men ages 9 through 26 to prevent genital warts. Researchers are looking at the impact of the HPV vaccine on boys to reduce the risk of HPV transmission.

1.29.2.3 Immunotherapy- Immunotherapy, also called biologic therapy, is designed to boost the body's natural defenses to fight the cancer. It uses materials either made by the body or in a laboratory to improve, target, or restore immune system function. For women who already have cervical cancer, a therapeutic vaccine is being developed. These vaccines help "train" the immune system to recognize cervical cancer cells and destroy them.

1.29.2.4 Fertility-preserving surgery-There is continued interest in improving surgical techniques and finding out which patients with cervical cancer can be treated successfully without the loss of fertility.

1.29.2.5 Targeted therapy. Targeted therapy is a treatment that targets the cancer's specific genes, proteins, or the tissue environment that contributes to cancer growth and survival. Drugs calledanti-angiogenesis inhibitorsthat block the action of a protein called vascular endothelial growth factor (VEGF) have been shown to increase the cancer's response to treatment and survival in women with cervical cancer that has spread to other parts of the body. VEGF promotes angiogenesis, which is the formation of new blood vessels. Because a tumor needs the nutrients delivered by blood vessels to grow and spread, the goal of anti-angiogensis therapies is to "starve" the tumor.

1.29.2.6 Combination therapy- Some clinical trials are exploring various combinations of immunotherapy, radiation therapy, and chemotherapy.

1.29.2.7 Supportive care- Clinical trials are underway to find better ways of reducing symptoms and side effects of current cervical cancer treatments in order to improve patients' comfort and quality of life.

1.30 Cervical Cancer Prevalence Around the World

This year, an estimated 12,990 women in the United States will be diagnosed with cervical cancer. It is estimated that 4,120 deaths from the disease will occur this year.

The 5-year survival rate tells what percent of women live at least 5 years after the cancer is found. Percent means how many out of 100. The 5-year survival rate for women with cervical cancer is 68%. The 10-year survival rate is 64%. However, survival rates depend on many factors, including the stage of cervical cancer that is diagnosed.

When detected at an early stage, the 5-year survival rate for women with invasive cervical cancer is 92%. If cervical cancer has spread to surrounding tissues or organs and/or the regional lymph nodes, the 5-year survival rate is 57%. If the cancer has spread to a distant part of the body, the 5-year survival rate is 17%.

It is important to remember that statistics on how many women survive this type of cancer are an estimate. The estimate comes from data based on thousands of women with this cancer in the United States each year(Diaz et al,2014).

2.1 Breast and Cervical Cancer Knowledge and Awareness among University Students

The goal of this study was to assess breast and cervical cancer knowledge, practices, and awareness among female university students in Samsun, Turkey. This research was a cross-sectional survey of female university students using a self-administered questionnaire to investigate participant awareness and knowledge of breast and cervical cancer. A total of 301 female university students participated. Descriptive statistics and chi square tests were used for data analysis. The mean age of the participants in this study was 22.0±5.91 years. Regarding family history, 89.7 % of the students had no known familial history of breast cancer. Students (65.4%) had knowledge about breast self examination and 52.2 % of them had performed breast self examination while 55.1% of them had knowledge about prevention of cervical cancer. The study points to an insufficient knowledge of university students in Samsun about breast and cervical cancer.

2.2 Level of Awareness of Cervical and Breast Cancer Risk Factors and Safe Practices among College Teachers of Different States in India: Do Awareness Programmes Have an Impact on Adoption of Safe Practices?

This study was conducted to assess the level of awareness and impact of awareness programs in adoption of safe practices in prevention and early detection. During cancer awareness events in 2011 at various women colleges in different parts in India, a pre-test related to cervical cancer and breast cancer was followed by an awareness program. Post-tests using the same questionnaire were conducted at the end of the interactive session, at 6 months and 1 year. A total of 156 out of 182 teachers participated in the study (overall response rate was 85.7 %). Mean age of the study population was 42.4 years (range- 28-59 yrs). Magazines and newspapers were sources for knowledge regarding screening tests for breast cancer in more than 60% of teachers where as more than 75% were educated by doctors regarding the Pap test. Major reasons for not doing screening test were found

to be ignorance (50%), lethargic attitude (44.8%) and lack of time (34.6%). Level of knowledge of breast cancer risk factors, symptoms and screening methods was high as compared to cervical cancer. There was a significant increase in level of knowledge regarding cervical and breast cancer at 6 months and this was sustained at 1 year. Adoption of BSE was significantly greater in comparison to CBE, mammography and the Pap test. To inculcate safe practices in lifestyle of people, awareness programmes such as pink chain campaign should be conducted more widely and frequently.

2.3 Literacy and Breast Cancer Prevention: a Population-Based Study from Iran

A population-based study was conducted in Iran to determine breast cancer awareness and screening practices among Iranian women and to examine its association with women's literacy. The study was carried out in two provinces, with 1,477,045 population, located in central and eastern part of Iran. Overall, 770 women were studied. Of these, 482 (62.7%) were literate and 287 (37.3%) were not. The results obtained from the data analysis indicated that there was a significant difference between literate and illiterate women. The findings suggest that in order to improve women's health and breast cancer outcomes providing equal educational opportunities for women seems necessary.

2.4 Breast Cancer Knowledge, Beliefs, and Screening Practices among Women Seeking Care at District Hospitals in Dar es Salaam, Tanzania

A study was conducted on breast cancer knowledge, screening practices, and educational preferences among outpatients at Tanzanian government-supported hospitals. A convenience sample of women was surveyed regarding,

(1) knowledge/beliefs of breast cancer etiology, risk factors, symptoms, treatment,

(2) early detection knowledge/practice, and

(3) educational preferences

Among 225 respondents, 98.2% knew of breast cancer; 22.2% knew someone affected by breast cancer. On average, 30% of risk factors and 51% of symptoms were identified. Among 126 aware of breast self-exam, 40% did not practice it; only 0.9% underwent regular clinical breast examinations despite 68% being aware of the procedure. Among treatments, 87% recognized surgery, 70% radiation, and fewer systemic therapy. Preferred educational sources were group sessions, television/radio, and meetings with breast cancer survivors. This work reveals incomplete breast cancer awareness among Tanzanian women.

2.5 Breast Cancer Knowledge, Attitudes, and Early Detection Practices in United States-Mexico Border Latinas.

The purpose of this study was to investigate breast cancer knowledge, attitudes, and use of breast cancer preventive screening among U.S. Latina and Mexican women residing along the U.S.-Mexico border.U.S. Latinas had significantly increased odds of having ever received a mammogram/breast ultrasound (adjusted odds ratio [OR]=2.95) and clinical breast examination (OR=2.67) compared to Mexican participants. A significantly greater proportion of Mexican women had high knowledge levels (54.8%) compared to U.S. Latinas (45.2%, $p<0.05$). Age, education, and insurance status were significantly associated with breast cancer screening use. Despite having higher levels of breast cancer knowledge than U.S. Latinas, Mexican women along the U.S.-Mexico border are not receiving the recommended breast cancer screening procedures. Although U.S. border Latinas had higher breast cancer screening levels than their Mexican counterparts, these levels were lower than those seen among the general U.S. Latina population(Banegas*et al.,* 2012).

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

The objectives of this study were to assess breast cancer knowledge and attitudes and factors associated with the practice of breast self examination (BSE) among female teachers of Saudi Arabia. More than half of the women showed a limited knowledge level. Among participants, the most frequently reported risk factors were non-breast feeding and the use of female sex hormones. The printed media was the most common source of knowledge. Logistic regression analysis revealed that high income was the most significant predictor of better knowledge level. Knowing a non-relative case with breast cancer and having a high knowledge level were identified as the significant predictors for practicing BSE. The study showed that the insufficient knowledge of female teachers about breast cancer and identified the negative influence of low knowledge on the practice of BSE. Accordingly, relevant educational programs to improve the knowledge level of women regarding breast cancer are needed (Khadiga F. Dandash, 2007).

2.7 Knowledge, attitude and practice of Nigerian women towards breast cancer: A cross-sectional study.

A cross-sectional study was designed to assess the knowledge, attitude and practices of community-dwelling women in Nigeria towards breast cancer. Study participants had poor knowledge of breast cancer. Mean knowledge score was 42.3% and only 214 participants (21.4%) knew that breast cancer presents commonly as a painless breast lump. Practice of breast self examination (BSE) was low; only 432 participants (43.2%) admitted to carrying out the procedure in the past year. Only 91 study participants (9.1%) had clinical breast examination (CBE) in the past year. Women with higher level of education ($X^2 = 80.66$, $p < 0.0001$) and those employed in professional jobs ($X^2 = 47.11$, $p < 0.0001$) were significantly more knowledgeable about breast cancer. Participants with higher level of education were 3.6 times more likely to practice BSE (Odds ratio [OR] =

3.56, 95% Confidence interval [CI] 2.58–4.92). This study suggested that community-dwelling women in Nigeria have poor knowledge of breast cancer and minority practice BSE and CBE. They recommended the establishment of institutional framework and policy guidelines that will enhance adequate and urgent dissemination of information about breast cancer to all women in Nigeria (Okobia *et al*., 2006).

2.8 A survey of breast cancer knowledge and attitude in Iranian women.

Due to shortage of facilities, breast self-examination (BSE) instead of clinical-based examination (CBE) and mammography is advocated as the first step of screening in developing countries including Iran. It is quite clear that the related knowledge, attitude, and practice (KAP) of the community is necessary to have a successful screening program particularly for BSE. The mean age of participants was 40.72 years with standard deviation (SD) of 9.58. Eighty-two point six percent (82.6%) were married and 48.4% were post graduates. A painless mass (60.8%) and bloody discharge (44.9%) were reported as the two important symptoms for BC. In this assay, 80.3% of participants knew females are at risk of BC and 70.6% of them perceived that early detection and operation in early stages are effective issues. Thirty point eight percent (30.8%) of respondents knew the BSE and this knowledge had significant association with their educational status. Fifty-nine point nine percent (59.9%) of participants were able to do BSE but only 12.9% of respondents practiced BSE regularly. Community awareness and education level are important elements in BSE as a substitute for traditional screening in BC for early detection (Motamedi *et al.,* 2012).

2.9 Awareness of cervical cancer risk factors and practice of Pap smear testing among female primary school teachers in Kasarani division, Nairobi Kenya

The objective of this study was to find out the awareness about cervical cancer, knowledge of risk factors and practice of Pap smear testing. A cross-sectional study design was adopted. Systematic random sampling was used to obtain the required sample

size of 384 respondents. Data analysis was conducted using SPSS and Excel programmed. The study findings revealed that 87% of the women were aware about cervical cancer, while 75% knew about the Pap smear test. Among them only 39% knew that HPV infection was a risk factor for developing cervical cancer while only 41% had ever had a Pap smear test done. There was a crude association between awareness of cervical cancer risk factors and practice of Pap smear test with 1.04 increasing odds of having a Pap smear if women were aware of the risk factors. This association was however not significant (P=0.9).

2.10 Cervical Cancer Awareness and Preventive Practices: A Challenge for Female Urban Slum Dwellers in Lagos, Nigeria

A study was conducted on the awareness of cervical cancer, attitude towards the disease and screening practice of women residing in two urban slums of Lagos, Nigeria. It also determined the prevalence of major risk factors for cervical cancer among the women. Multistage sampling was used to select 240 women who were interviewed with a structured questionnaire and data collected was analyzed with Excel-info version 3.5.1 statistical software. Only 10 (4.2%) women in this study were aware of cervical cancer and none of them believed they were at risk of developing the disease. Most (73.3%) were willing to undergo a cervical cancer screening test. Age, education and previous history of vaginal examination were positively associated with willingness to undergo screening ($p < 0.05$). The respondents had a high prevalence of major risk factors for cervical cancer such as early age at sexual debut, multiple sexual partners and male partner with other female partners. Efforts need to be intensified to increase awareness of this condition and to promote low-cost cervical cancer screening among this underserved population.

2.11 Knowledge of Cervical Cancer and Practice of Pap Smear Testing among Secondary School Teachers in Nnewi North Local Government Area of Anambra State, South Eastern Nigeria

This study was conducted to determined the knowledge and practice of cervical cancer screening among female secondary school teachers in Nnewi North Local Government Area of Anambra State. This was a cross-sectional descriptive study in which self-administered questionnaires were returned by 142 respondents and results were analyzed using Statistical Package for Social Sciences version 17. The mean age of the respondents was 35.6 ± 1.76 years. A high proportion of the respondents were aware of cervical cancer 106 (74.6%). About 44 (41.5%) knew of cervical cancer screening by Pap smear, out of which only 20.5% had done a pap smear. The most common reasons given for not doing the test were; not deeming the test necessary, not knowing where the test could be done and feeling of not being at risk of developing cervical cancer. Though the level of awareness of cervical cancer screening was high, the level of uptake of Pap smear was still very low. A national cervical cancer Pap smear campaign should be intensified to change the negative perception towards Pap smear test.

2.12 Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a qualitative study.

A qualitative study was undertaken using face-to-face in-depth interviews to investigate knowledge, attitudes and beliefs on cervical cancer screening of Malaysian women. A lack of knowledge on cervical cancer and the Pap smear test was found among the respondents. Many women did not have a clear understanding of the meaning of an abnormal cervical smear and the need for the early detection of cervical cancer. Many believe the purpose of the Pap smear test is to detect existing cervical cancer, leading to the belief that Pap smear screening is not required because the respondents had no symptoms. Despite considerable awareness of a link between cervical cancer and sexual activity, as well as the role of a sexually-transmitted infection, none of the respondents had heard of the human papilloma virus. The findings highlighted the importance of

emphasising accurate information about cervical cancer and the purpose of Pap smear screening when designing interventions aimed at improving cervical cancer screening for Malaysian women(Wong LP, 2016).

2.13 Cervical cancer and Pap smear screening in Botswana: knowledge and perceptions.

Cervical cancer is the most common cancer in Botswana. Little is known about women's use of (Pap) cervical smear tests. The study is to explore knowledge and beliefs of 30 women about cervical cancer and Pap smear tests using the Health Belief Model. Knowledge of cervical cancer and the Pap smear test was inadequate among women with low incomes. Pap smear utilization was also limited among low-income women. Of the 18 women who had at least one Pap smear test in their lifetime, eight (44%) had opportunistic testing as a result of having gynaecological symptoms. Twelve women (40%) had never had Pap smear tests. Major barriers to Pap smear screening included inadequate knowledge about Pap smear testing, providers' negative attitudes, and limited access to doctors. The study has implications for health education and health policy and for nurses' involvement in both (DM, 2016).

Significance of the 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 (Global Health Estimates, 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.

Cervical cancer is the fourth most common cancer in women, and the seventh overall, with an estimated 528,000 new cases in 2012.In the third world cervical cancer is the most common cancer, where over three quarters of the estimated half a million newly diagnosed cases occur annually. Cervical cancer is largely preventable with effective screening and treatment of precancerous lesions, and breast cancer survival rates are greatly reduced through early detection and treatment. Hence, much of the disproportion in disease trouble is rooted in unfair access to be concerned(World Health Organization, 2016)..

Awareness for breast and cervical cancers can lead to reductions in incidence and mortality of two major causes of death among women, and can address the profound inequities seen in the incidence and mortality from these two cancers. Thus, to make an analysis of the current statistics of the knowledge & awareness of the Breast & Cervical Cancer among women 15 to 35 I decided to conduct a survey on “Knowledge & Awareness of Breast & Cervical Cancer among women aged 15 to 35”.

Aim and Objectives of this study

1. To determine the level of knowledge and awareness regarding Breast & Cervical Cancer among the general women in Bangladesh.
2. To find out the risk factor knowledge prevalence of Breast& Cervical Cancer among them.
3. To study demographic characteristics and determine if they influences knowledge and awareness of Breast& Cervical cancer.
4. To assist women find out the early signs and symptoms of Breast Cancer and Cervical Cancer, thus enabling them to seek treatment at an early stage.
5. To encourage the participants to seek prompt medical attention for symptoms which may include lumps; nipple discharge; swelling, redness or darkening of breast skin; bleeding; abnormal vaginal discharge, etc.

3.1 The Type of Study

This study was survey based.

3.2 Study Area

The study was conducted general women including illiterate and literate in Bangladesh.

3.3 Study Population

This study was performed on 360 women among age 15 to 35 in Bangladesh, from March.2016 to May,2016.

3.4 Inclusion Criteria

1. Age includes from 15 to 35.

3.5 Exclusion Criteria

1. Unwilling to participate or unable comply with protocol requirements were excluded.

2. Women aged above 36 were excluded.

3.6 Study Tool

To facilitate this study of knowledge and awareness of Breast & Cervical Cancer among women in Dhaka , Bangladesh , a questionnaire was established in March 2016. Through this questionnaire, demographic information was collected along with some risk factors that contribute to the knowledge and attitude of Breast & Cervical Cancer among women 15 to 35.

3.7 Questionnaire Development

The questionnaire was developed based on some common criteria that influence knowledge and awareness of Breast & Cervical Cancer among women in Dhaka, Bangladesh do that maximum accurate statically data can be collected from the survey.

3.8 Data Analysis

After all the data collected, these data were set on the Microsoft Office Excel and filtered out according to the age range, educational qualification, knowledge about Breast & Cervical Cancer risk factors, symptoms etc. Some graphical representation were found that gave visual representations.

3.9 Ethics

This study was done without conflicting the ethical issues. Ethical consideration was checked by the research supervisor with the research policy of the East West University.

4.1 Prevalence of age groups in study population:

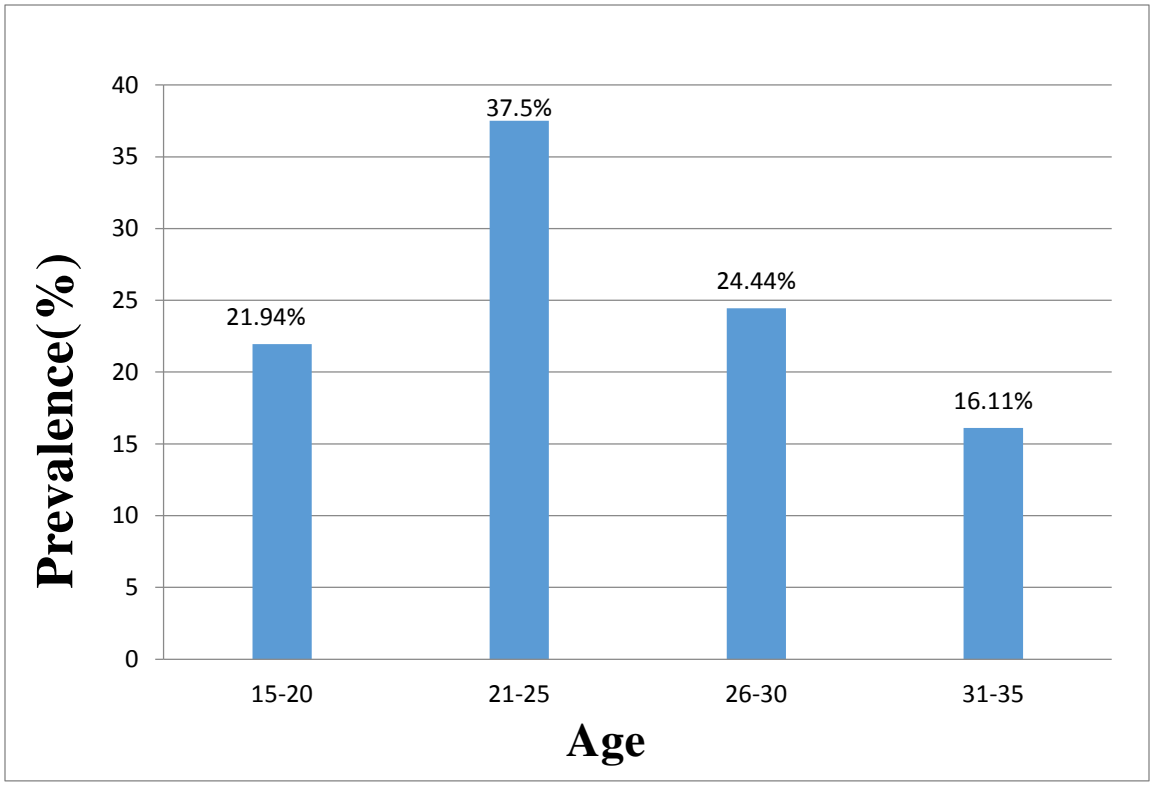


Fig: 4.1 Age groups

The study showed that among 360 women, there 37.5% of the population belongs to the age group 21-25. 24.44% of the population belonged to the age group 26-30, 21.94% of the population belonged to the age group 15-20, and 16.11% of the population belongs to the age group 31-35.

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4.2 Prevalence of different religion in the study population

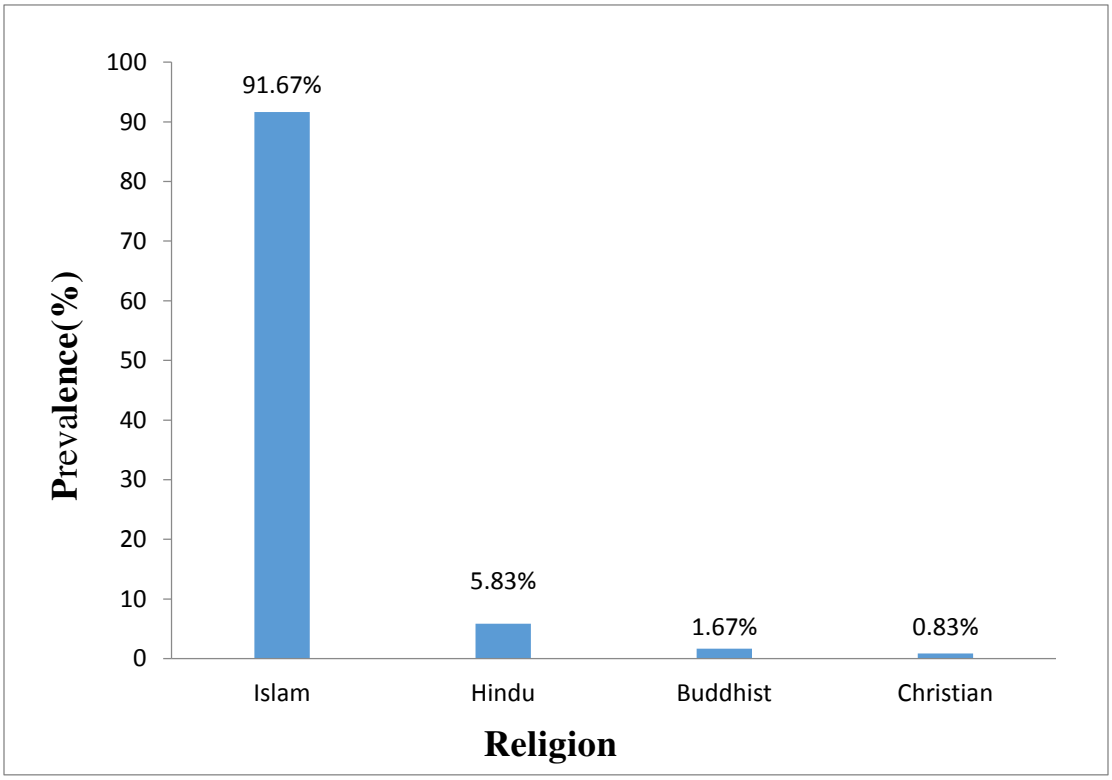

Fig:4.2 Religion groups

The study showed that among 360 women, there were 91.67% of the population were Muslim, 5.83% of the population were Hindu, 1.67% of the population were Buddhist, 0.83% of the population were Christian.

4.3 Prevalence of different education groups in the study population

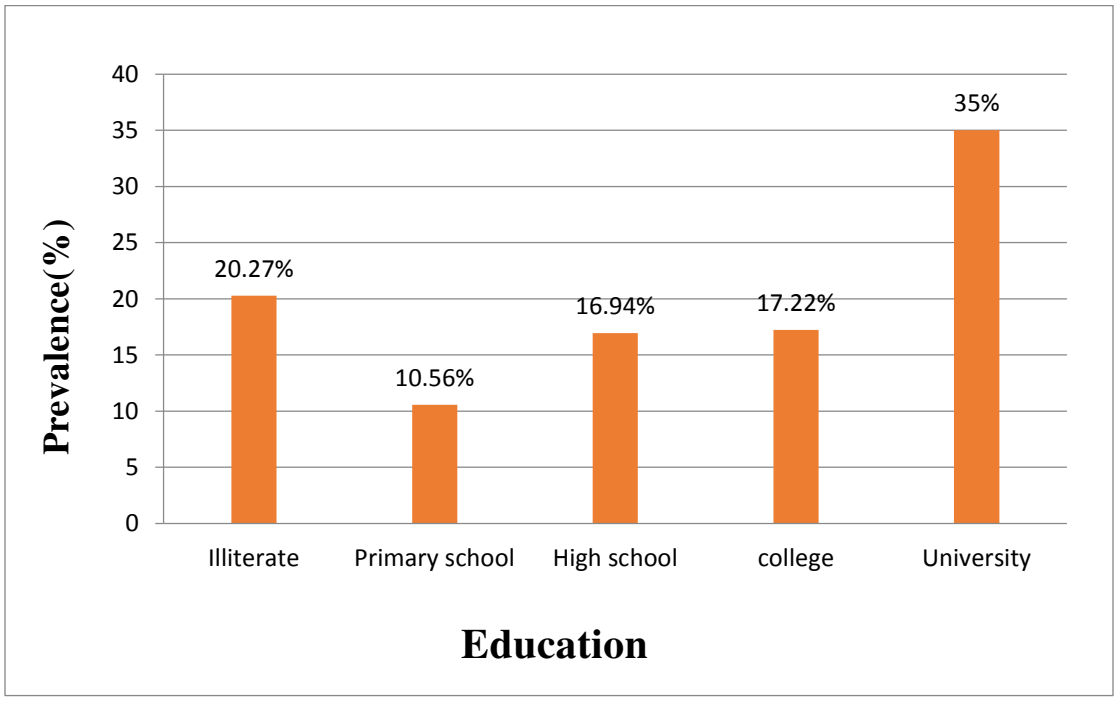

Fig:4.3 Education groups

The study showed that, 35% of the women were completed their graduation. 20.27% of the women were illiterate, 17.22% of the women have completed their college16.94% of the women have completed high school, 10.56% of the women have completed primary school.

4.4 Prevalence of the occupation in the study population

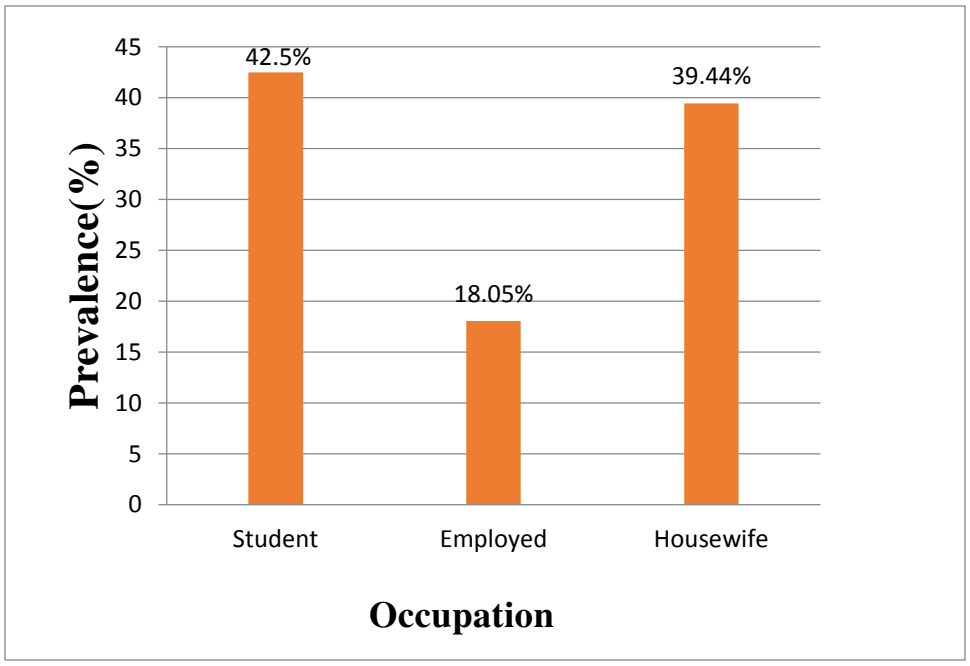

Fig: 4.4 Occupation

The study showed that, 42.5% of the women were student, 39.44% of the women were housewife and 18.05% of the women were employed.

4.5 Prevalence of the marital status in the study population:

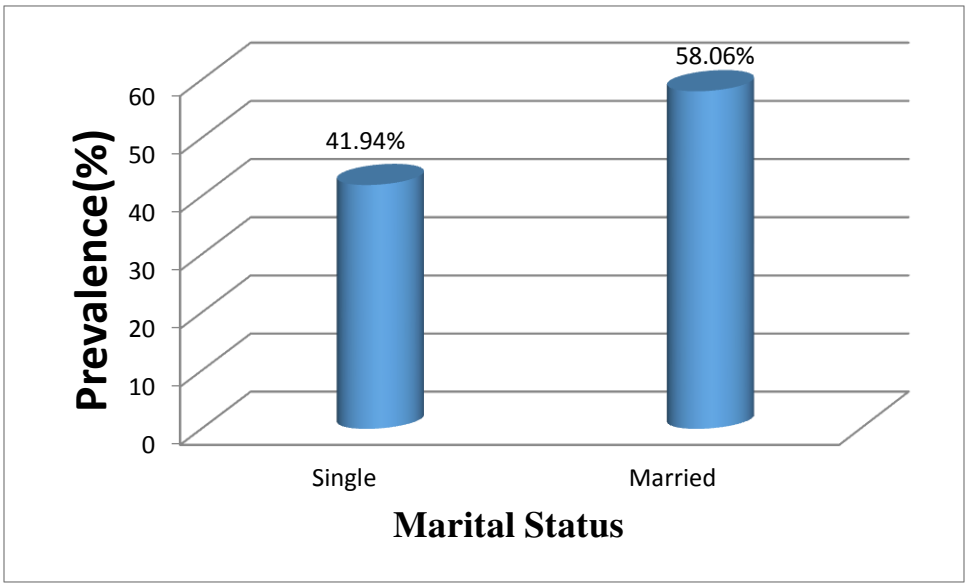

Fig: 4.5 Marital status

Among the 360 women there were 58.06% of the women were married 41.94% of the women were single.

4.6 Prevalence of the net household income in the study population

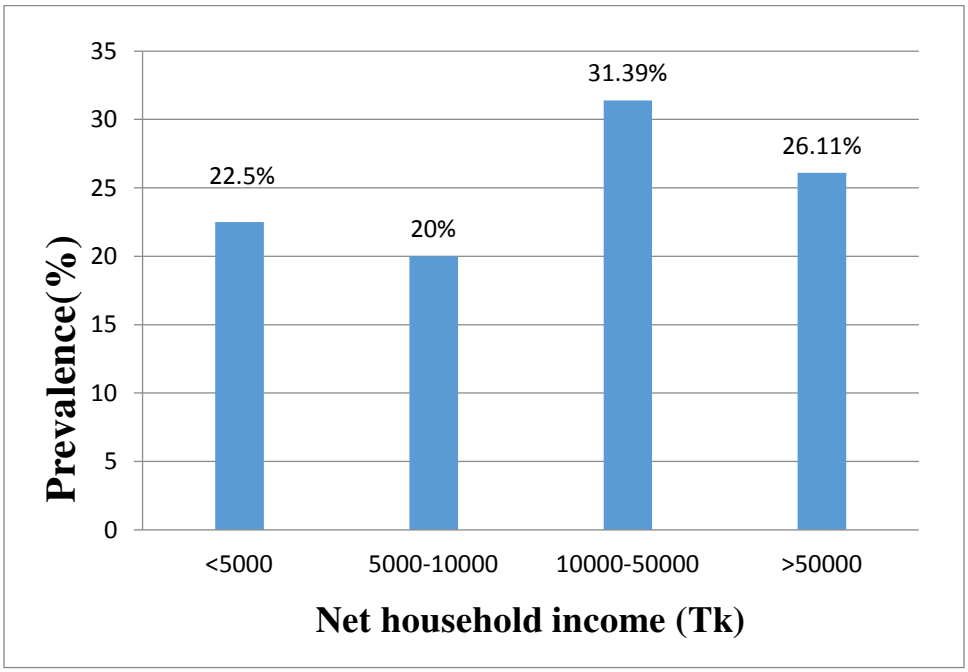

Fig: 4.6 Net household income

The study showed that, 31.39% of the population had net household income of 10000-50000, 26.11% of the population net household income is >50000, 22.5% of the population net household income is <5000 and 20% of the population net household income is 5000-10000.

4.7 Prevalence of heard about Breast Cancer

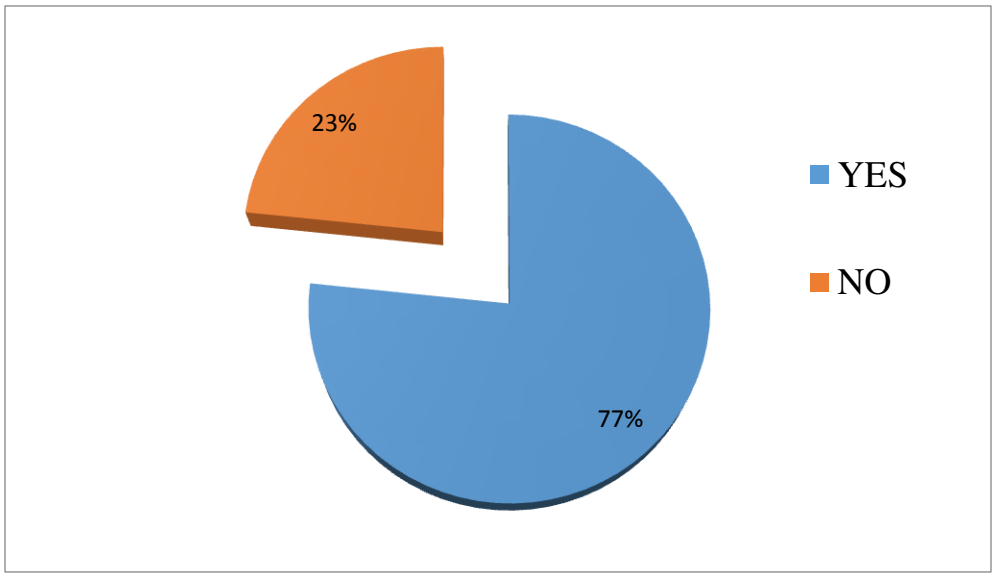

Fig: 4.7 Heard about Breast Cancer

In this study showed that, 77**%** of the population heard about brest cancer and 23% old did not hear about it.

4.8 Awareness of Breast Cancer Risk Factors

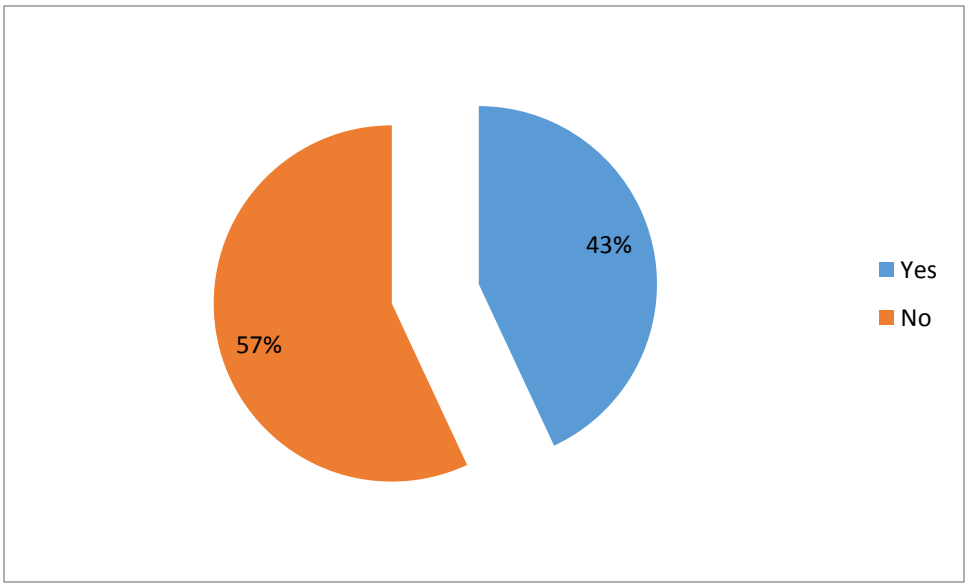

Fig: 4.8 Aware of Breast Cancer risk factors

The study showed that, **57%** of the populations are **aware** and 43% of the population were not aware of Breast Cancer risk factors.

4.9 Knowledge about Breast Cancer Risk factors

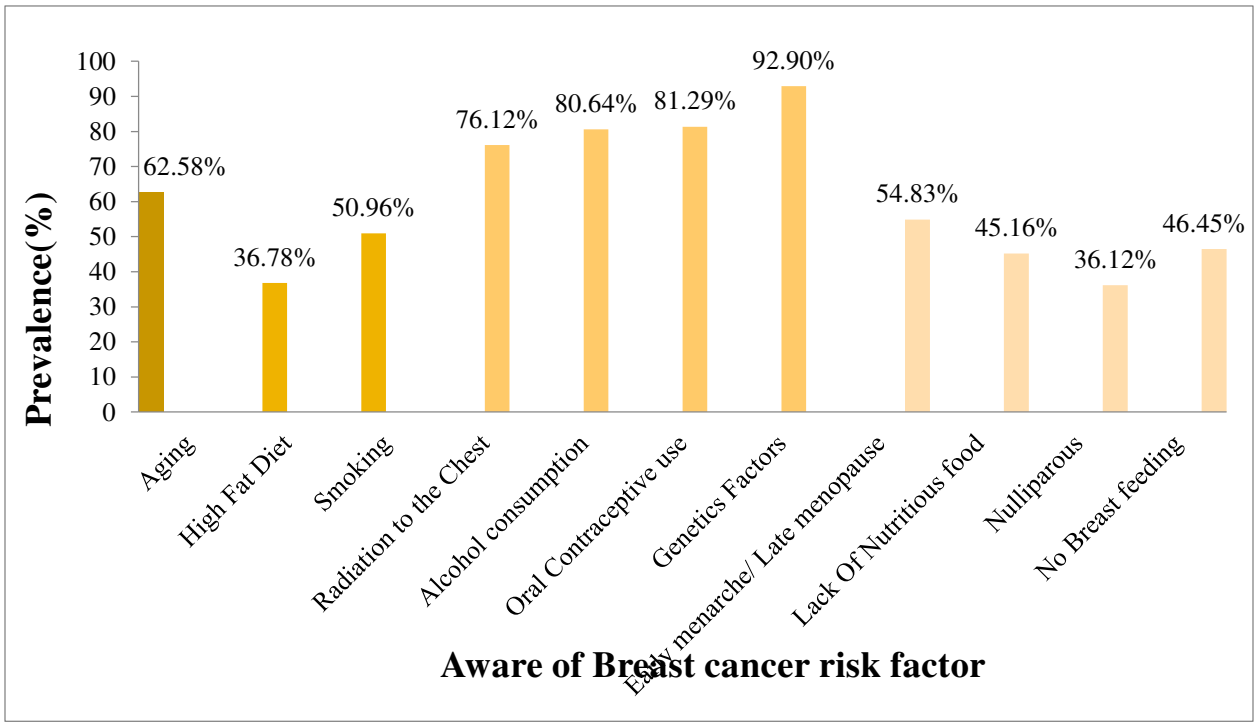

Fig: 4.9 Breast Cancer risk factors

The study showed that, 92.90% recognized genetic factor. 81.29% recognized oral contraceptive use. 80.64% recognized alcohol consumption,76.12% recognized radiation to the chest, 62.58% of the women recognized aging, ,54.83% recognized early menarche & late menopause, 50.96% recognized smoking 45.16% recognized lack of nutritious food, 46.45% recognized no breast feeding, 36.78% recognized high fat diet, and 36.12% percent recognized nulliparous and as the risk factor.

4.10 Awareness of Breast Cancer Signs and Symptoms

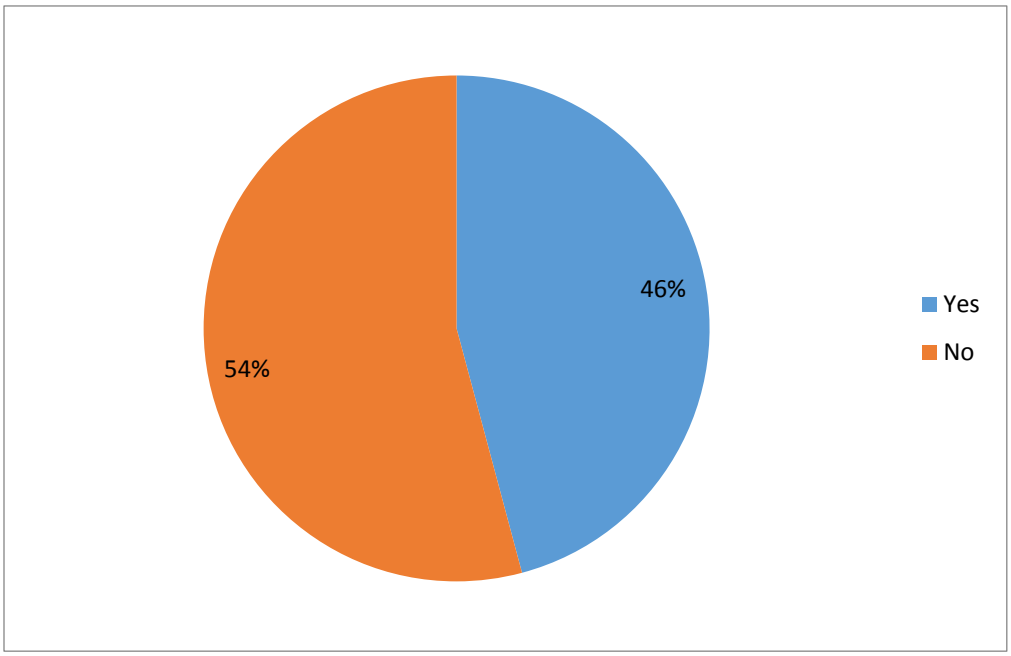

Fig: 4.10 Breast Cancer signs and symptoms

The study showed 54% of the population knew the Breast cancer sign and symptoms and 46% did not know about Breast Cancer signs and symptoms.

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4.11 Knowledge about Breast Cancer signs and symptoms

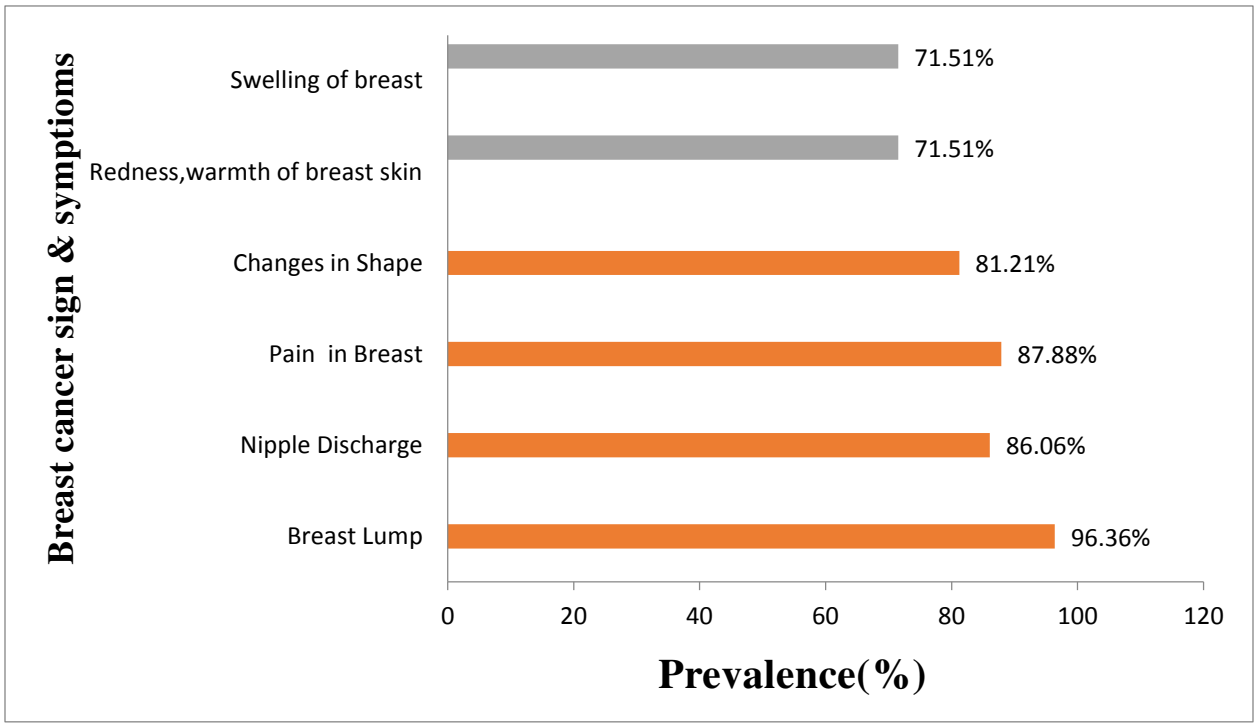

Fig: 4.11 Knowledge about Breast Cancer signs and symptoms

According to the knowledge of the participants,96.36% recognized breast lump, 87.88% recognized pain in breast, 86.06% recognized nipple itches, 81.21% change in nipple shape/ size of breast, 71.51% recognized redness/ warmth/ darkening of breast skin, and swelling of breast as the signs and symptoms of Breast Cancer.

4.12 Breast Self Exam Knowledge

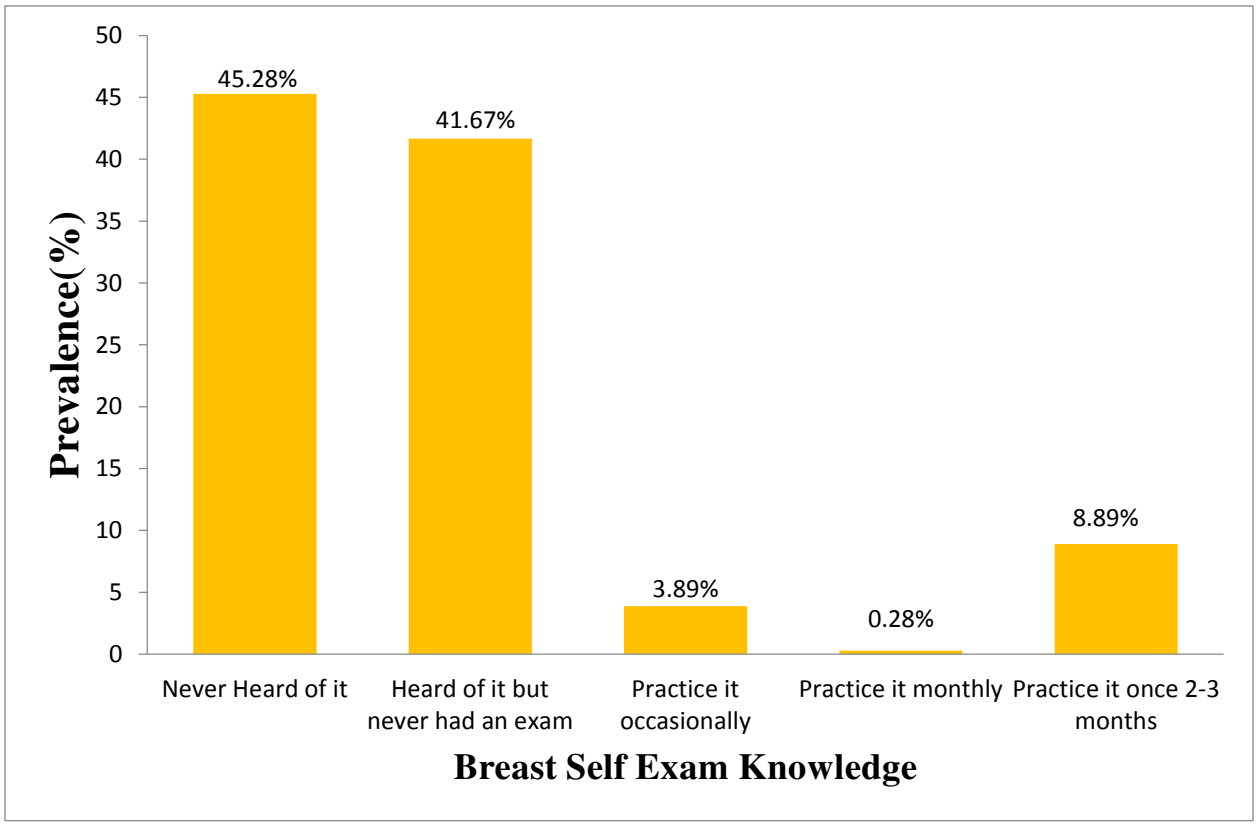

Fig: 4.12 Breast Self Exam Knowledge

Among the participants, 45.28% never heard of it,41.67% population heard of it but never had an exam, 3.89% practiced it occasionally, and 0.28% practiced it monthly and 8.89% practiced it once in 2-3 months.

4.13 Prevalence of Clinical Self Exam Knowledge

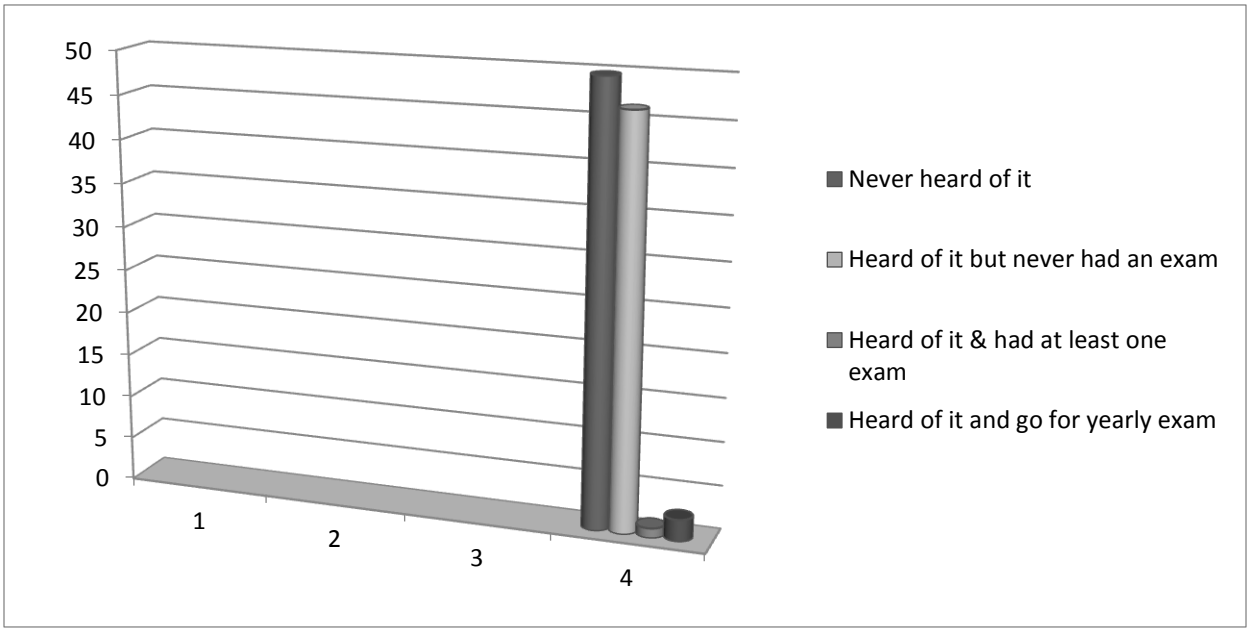

Fig: 4.13 Clinical self exam knowledge

In this study,49.72% never heard of it, 46.89% heard of it but never had an exam, 1.11% heard of it and had at least one exam and 2.5% heard of it and went for yearly exams.

4.14 Actions if a lump is found

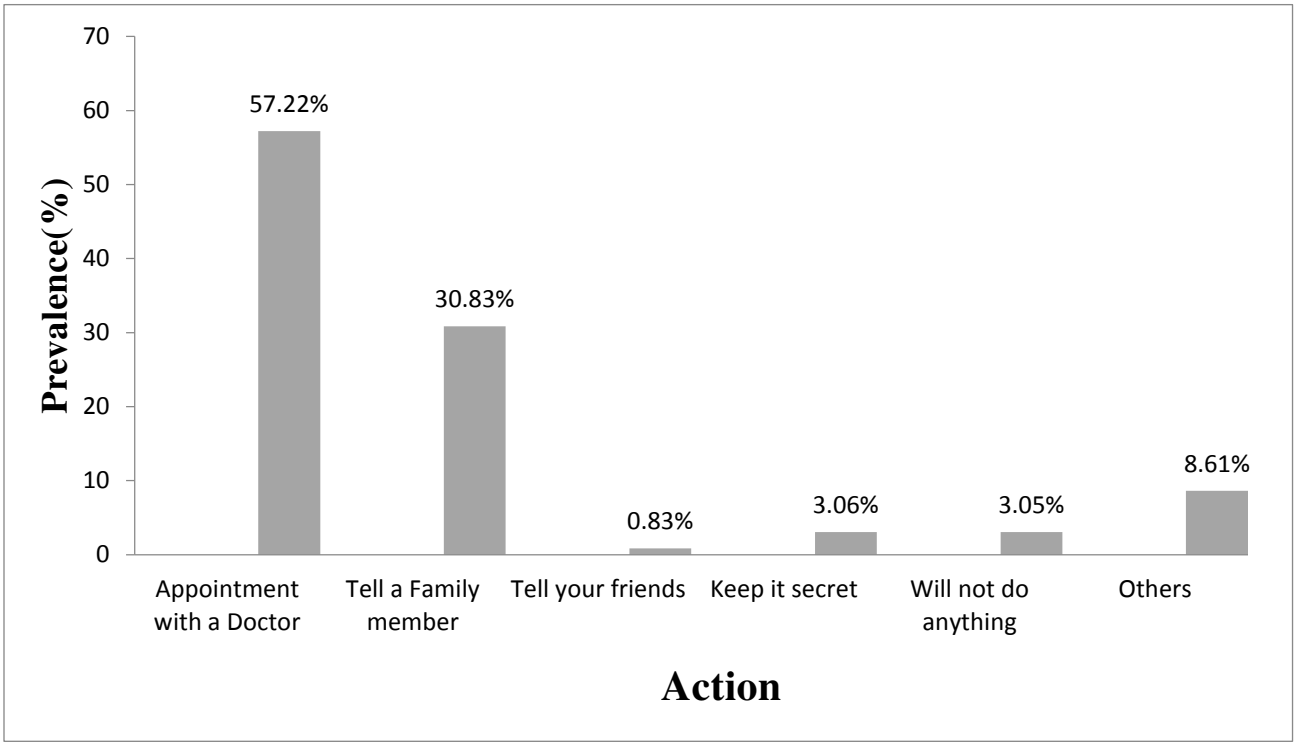

Fig: 4.14 Prevalence of if a lump is found

In the study, 57.22% said they would appoint with a doctor**,** 30.88% would tell a family member, 0.83% said they would tell their friend, 3.06% will keep it secret, 3.05% would not do anything, 8.61% choose the option others if they found a lump.

4.15 Awareness of mammography

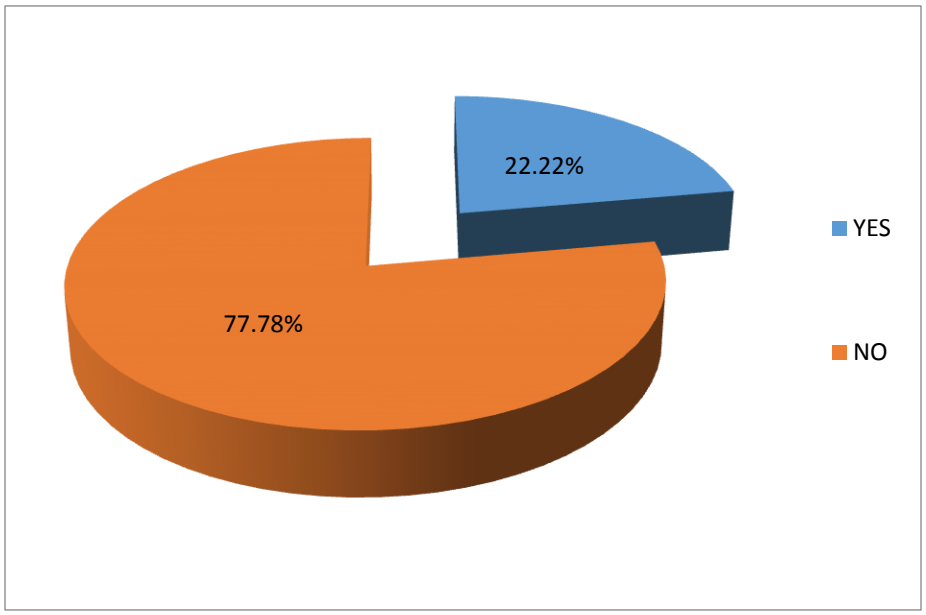

Fig : 4.15 Awareness of mammography

A majority of the population, 77.78% said they did not heard about mammography, and only 22.22% said they heard about mammography.

4.16 Awareness of Cervical Cancer

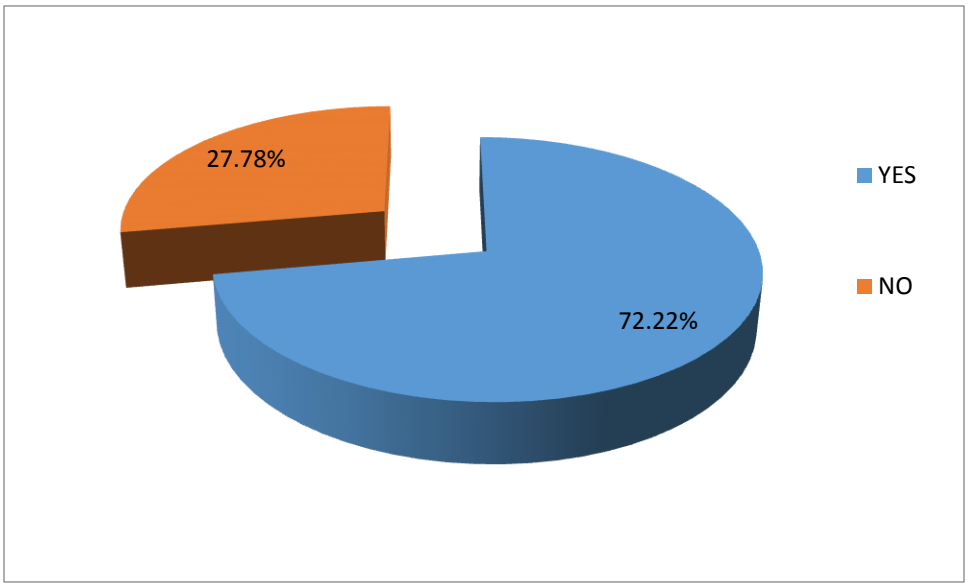

Fig: 4.16 Awareness of Cervical Cancer

In this study, majority of the participants, 72.22% heard about Cervical Cancer, and 27.78% said they did not heard about Cervical Cancer.

4.17 Awareness of Cervical Cancer Risk Factors

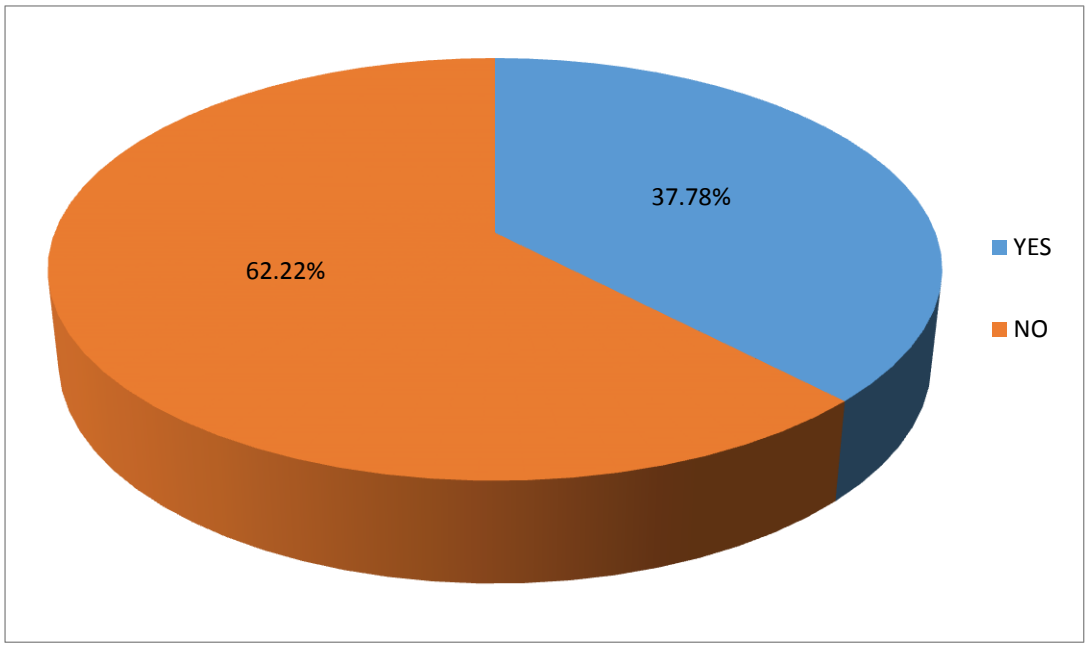

Fig: 4.17 Aware of Cervical Cancer risk factors

Among the population, 62.22% women were aware, and 37.78% were not aware of Cervical Cancer risk factors.

4.18 Knowledge about Cervical Cancer Risk Factors

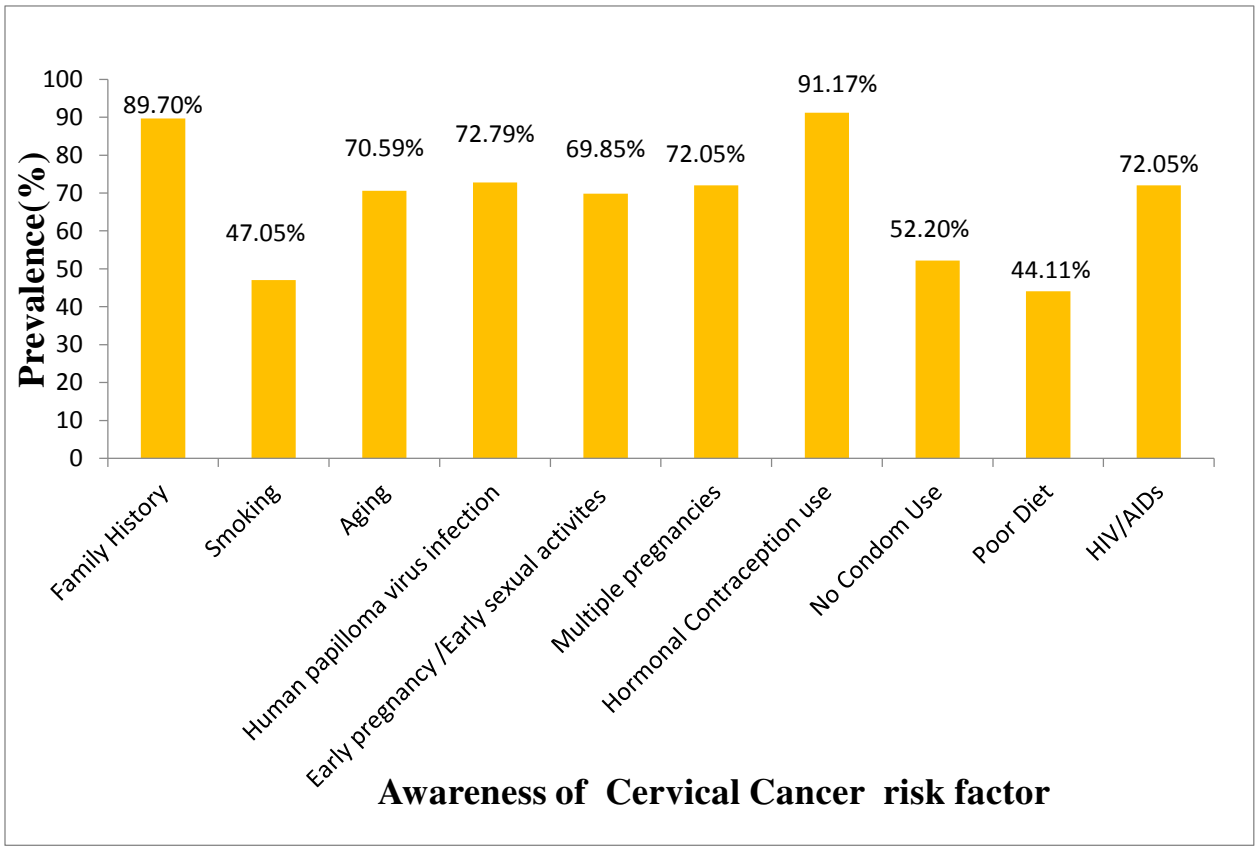

Fig 4.18 Cervical Cancer risk factors

In this study, 89.70% of the participants were of family history, 47.05% knew smoking, 70.59% knew aging, 72.79% knew about Human papilloma virus, 69.85% know about multiple sexual partner, 72.05% know multiple pregnancies, 91.17% know about hormonal contraception use, 52.20% knew no condom use, 44.11% knew about poor diet and 72.05 % know HIV/AIDS as the Cervical Cancer risk factors.

4.19 Awareness of Cancer Signs & Symptoms

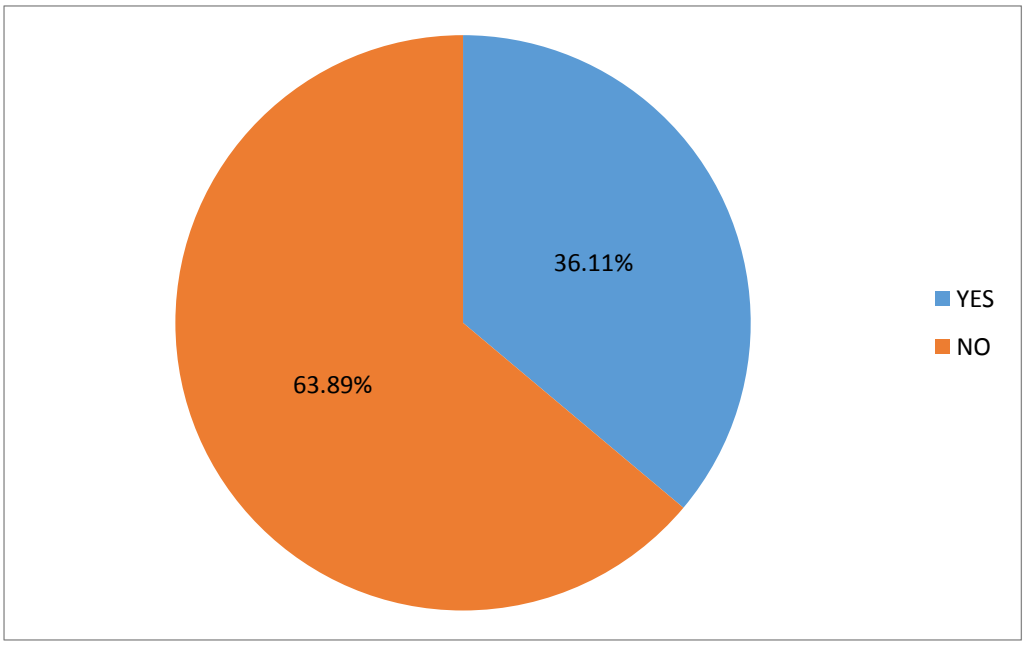

Fig: 4.19 Aware of Cervical Cancer signs and symptoms

Among the 360 women, 63.89% women were aware and 36.11% are not aware of Cervical Cancer signs and symptoms.

4.20 Knowledge about Cervical Cancer signs and symptoms

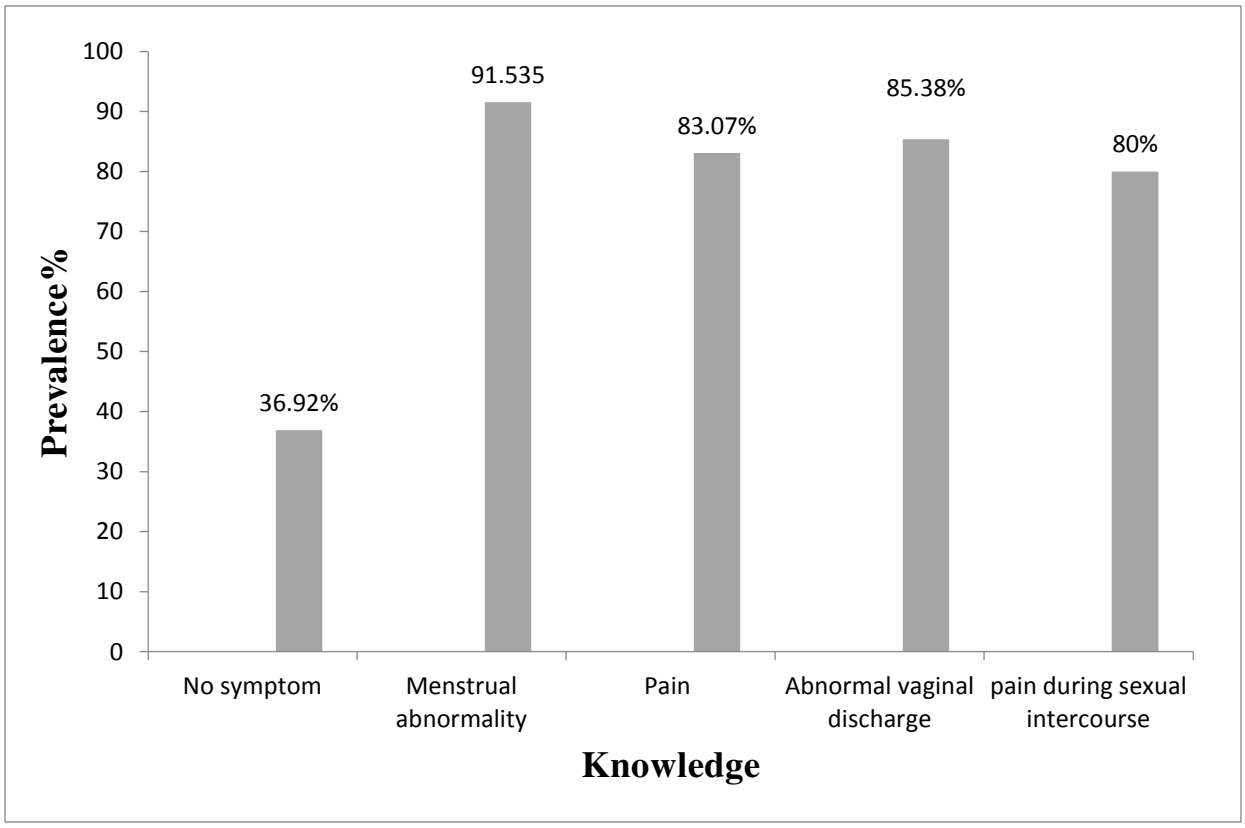

Fig: 4.20 Cervical Cancer signs and symptoms

From the study among 360 women, 91.53% identified menstrual abnormality, 85.38% identified abnormal vaginal discharge, 80% identified pain during sexual intercourse, 83.07% identified pain (pelvic, back and leg), 36.92% identified no symptoms as the signs and symptoms of Cervical Cancer.

4.21 Methods of Cervical Cancer prevention

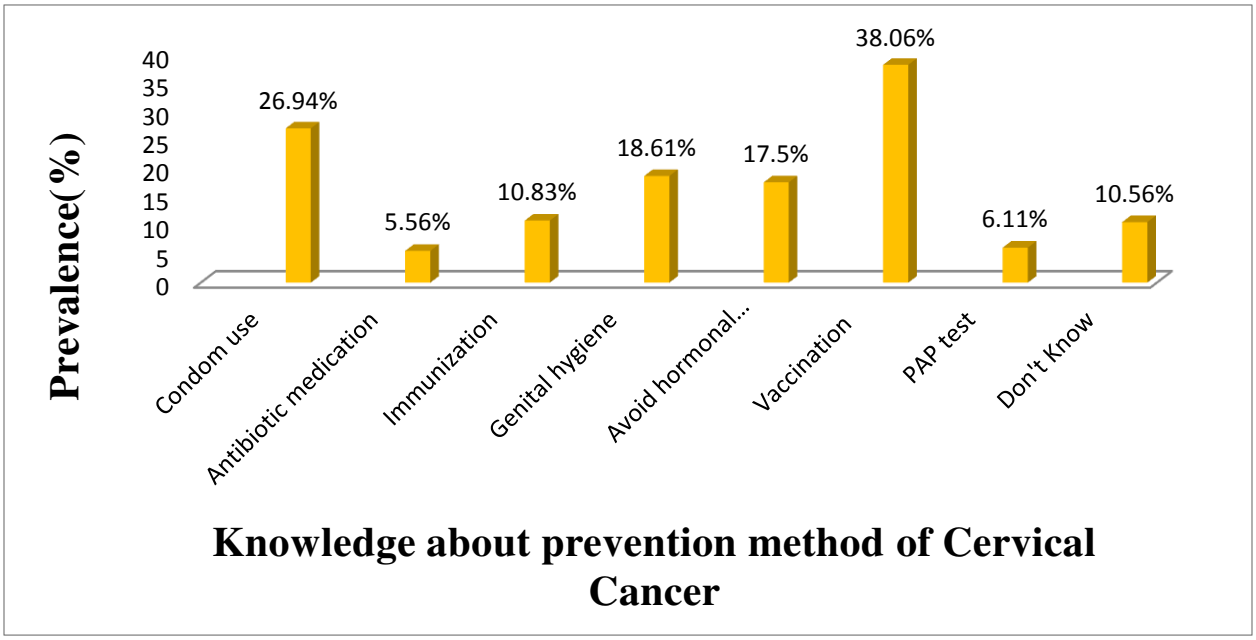

Fig: 4.21 Methods of Cervical Cancer prevention

Among 360 women, 38.06% identified vaccination, 26.94% knew condom use, 18.61% identified genital hygiene, 17.5% knew avoid of hormonal contraception use, 10.83% knew immunization,6.11% identified PAP test, 5.56% know antibiotic medication as the method of prevention of Cervical Cancer. And 10.56% did not have any knowledge about prevention method of cervical cancer.

4.22 Heard about PAP test

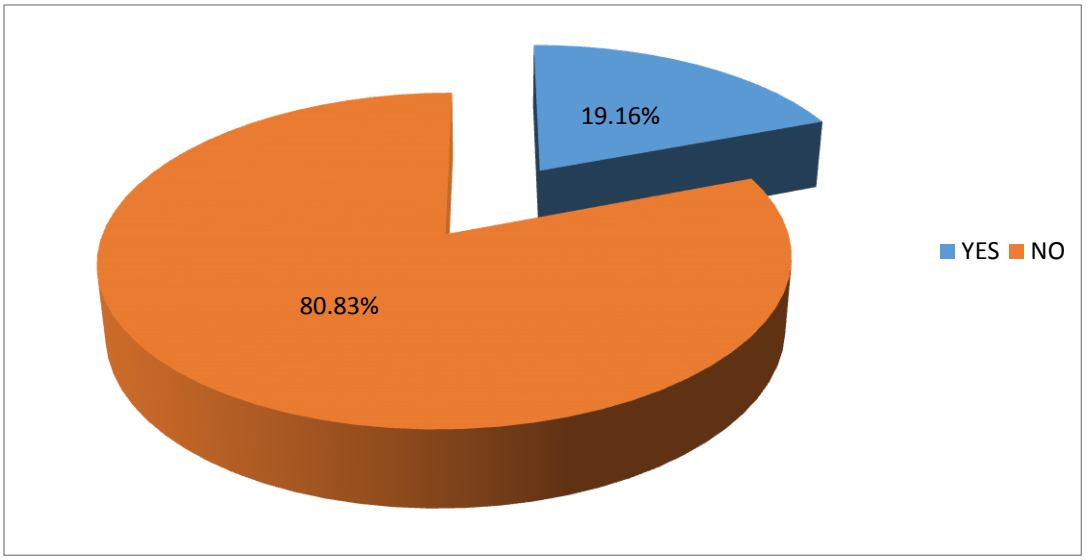

Fig: 4.22 Heard about PAP test

19.16% of the population said they heard about PAP test and 80.83% said they did not heard about PAP test.

4.23 Reasons for doing PAP smear test

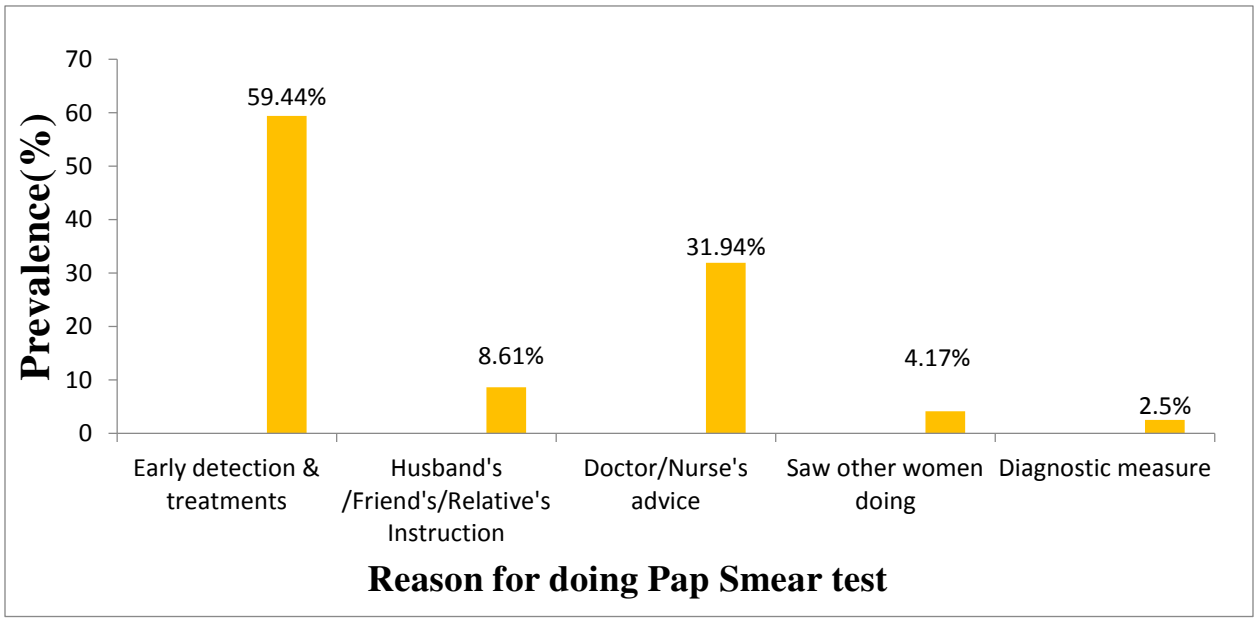

Fig: 4.23 Reasons for doing PAP smear test

The study showed that, 59.44% participants chose early detection & treatments for doing Pap Smear test, the remaining 31.94% did it for doctor's/Nurse's advice, 8.61% did it for husband's/relatives instruction,, 4.17% did it because of doctor's/ nurse advice, 2.5% did it for diagnostic measure.

4.24 Treatments Methods of both type of cancer

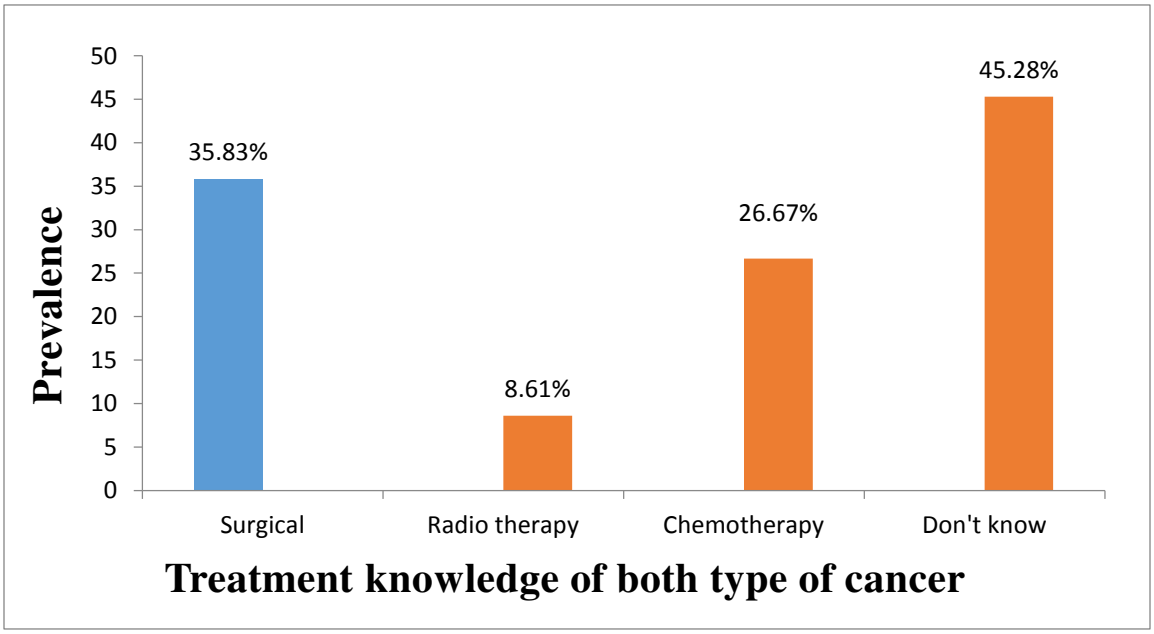

Fig: 4.24 Reasons for doing PAP test

The study showed that, 45.28% population did not have any knowledge. 35.83% chose surgical, 26.67% chose chemotherapy as the possible treatments methods of both type of cancer, 8.61% chose radio therapy.

4.25 Knowledge of both the cancer reaching other parts of the body

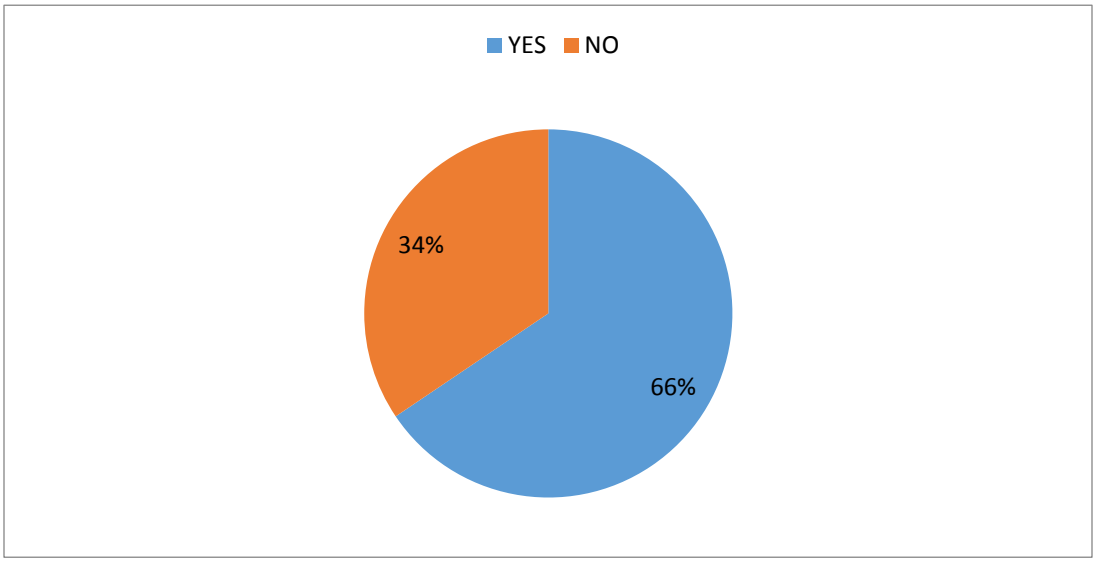

Fig: 4.25 Know that both the cancer reach other part of the body

A majority of the population, 66% knew that both the cancer reach other parts of the body and 34% do not know that both the cancer can reach other part of the body.

4.26 Early Detection can improve Treatment outcome

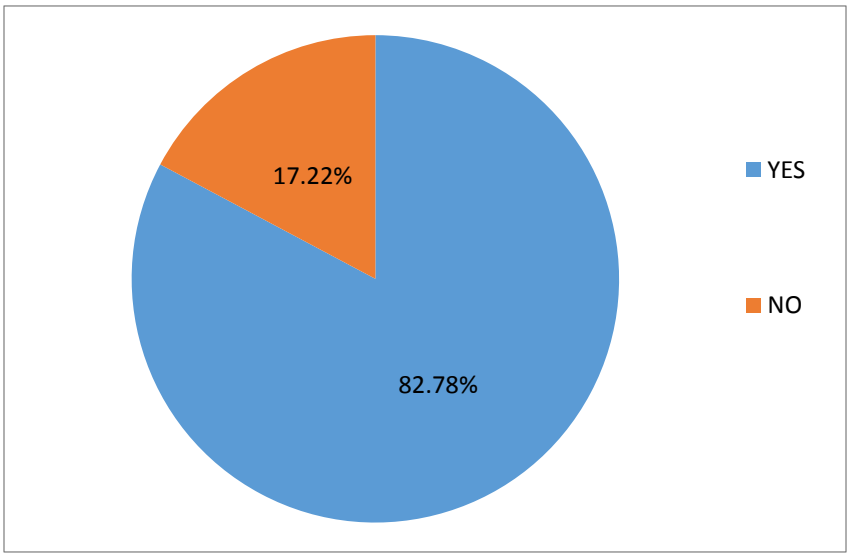

Fig: 4.26 Early Detection can improve Treatment Outcome

The study showed that, 82.28% believed that early detection can improve treatment outcome and 17.22% did not believe this.

4.27 Women who should undergo Screening Test

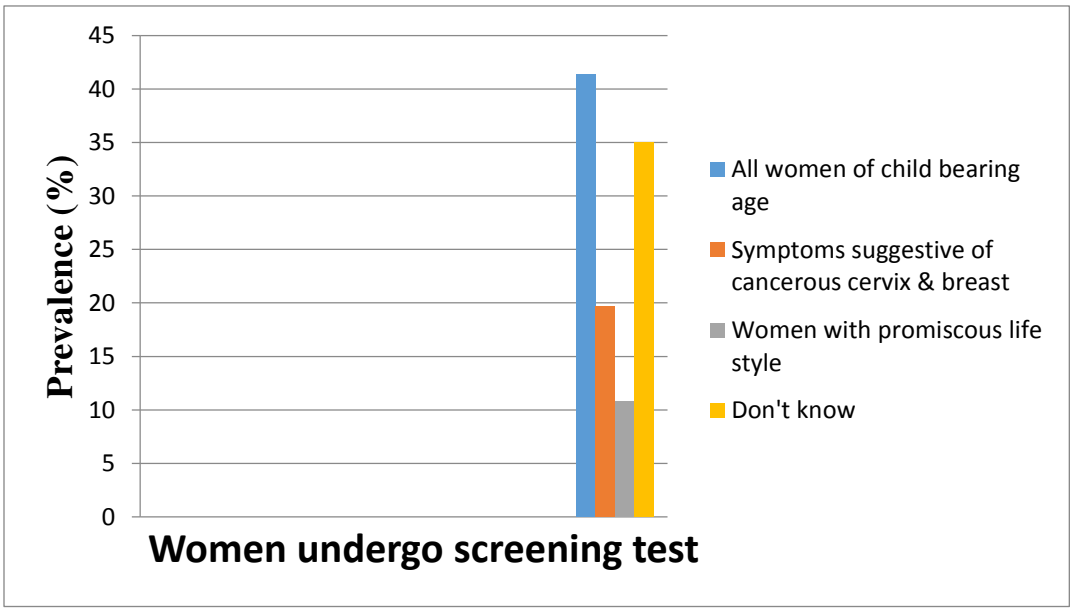

Fig: 4.27 Women who should undergo screening test

Among the 360 women, 41% said that only women of child bearing age should screening test followed by women 19% said that Symptoms suggestive of cancerous cervix & breast should go, and 10.83% chose women with promiscuous life style should undergo for screening test. And 35% population did not have any idea.

4.28 Reasons for unwillingness or major barrier to undergo Screening test

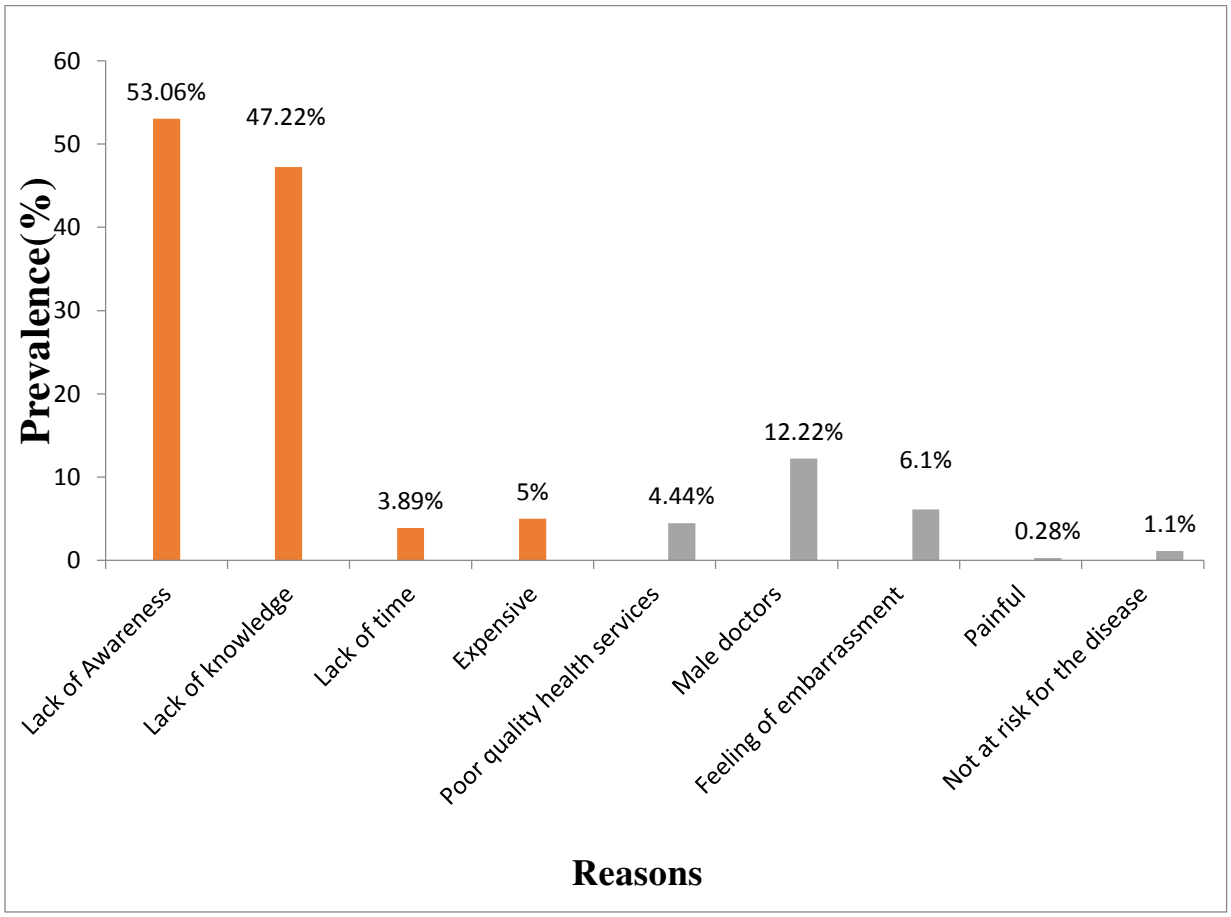

Fig: 4.28 Major barrier to undergo screening test

The study showed that, 53.06% said lack of awareness, 47.22% said lack of knowledge, 12.22% said male doctors. 6.11% said feeling of embarrassment,5% said expense, 4.44% said poor quality health service, 3.89% said lack of time, 0.28% said painfulness and 1.1% said not at being risk of disease as the reasons for unwillingness/ major barrier to undergo screening test.

4.29 Sources of Information

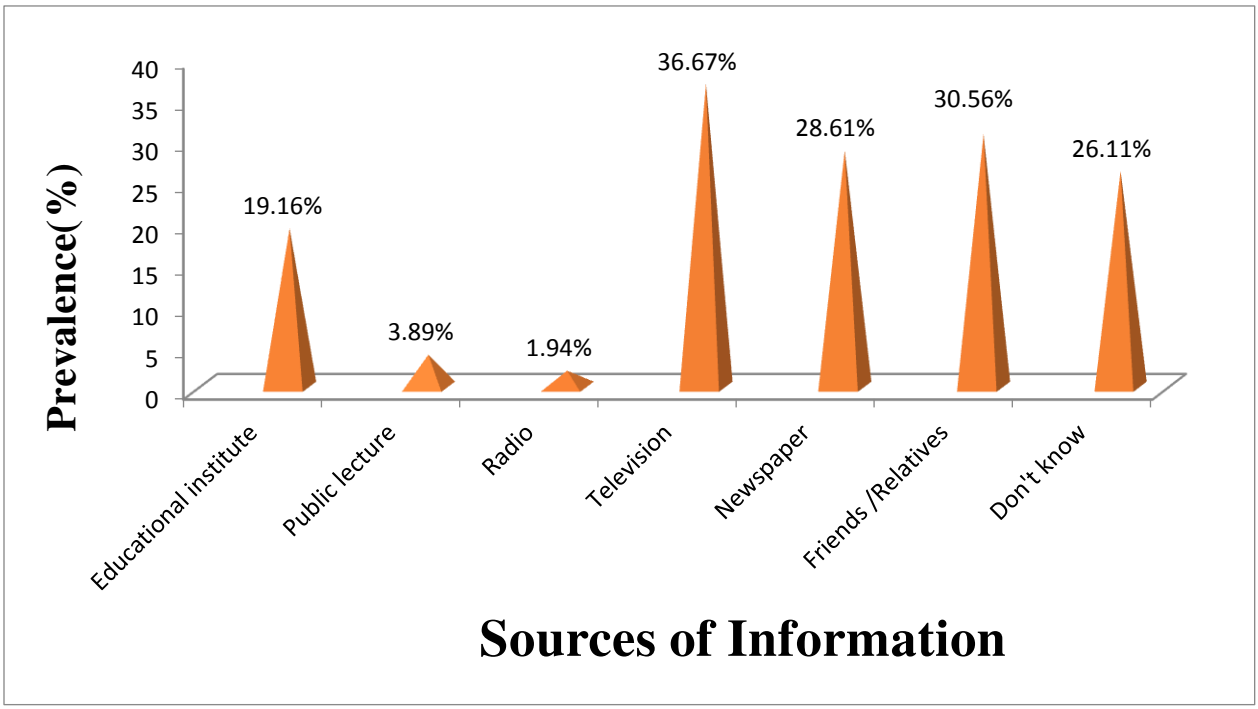

Fig: 4.29 Sources of information

In this study ,among 360, majority population get their knowledge about Breast & Cervical Cancer from the source as 36.67% as major sources from television followed by 30.56% from friends and relatives 28.61% from newspaper, 19.16% from educational institute, 3.89% from public lecture, 1.94% from radio, ,. And 26.11 % population do not get any information.

5.1 Discussion

Breast & Cervical cancer are the leading causes of cancer related deaths among women worldwide. Worldwide different studies have been done on breast & cervical cancer based on knowledge, awareness, screen and treatment. This study was done using a structured questionnaire is conducted on (n=360) general women from Bangladesh. Among 360 women, there were 21.94% of the population belongs to the age group 15-20,followed by 37.5% of the population belongs to the age group 21-25, 24.44% of the population belongs to the age group 26-30,followed by 16.11% of the population belongs to the age group 31-35.

In my study, I was concerned about the women aged about 15 -35 , where there were variation of their education levels, study showed that, 20.27% of the women were illiterate, 10.56% of the women had completed primary school, 16.94% of the women had completed high school, followed by 17.22% of the women had completed their college, 35% of the women were completed their graduation.

The study showed that, 42.5% of the women were student, 18.05% of the women are employed, and 39.44% of the women are housewife.

It was found that , about 77% among 360 participants heard about breast cancer. This percentage is lesser than that found in the similar study of women seeking care at District Hospital in Dares Salaam Tanzania, where 98.2 % heard about breast cancer. In their study 120 respondents (53.3%) believed that cancer can reach other parts of the body, which is similar to my study that, 66% participants believed it(*Chantal and Stephen,2009*).

With regard to awareness of breast cancer risk factors in my study, majority of the participants 92.90% recognized genetic factor, followed by 81.29% recognized oral contraceptive use. 80.64% recognized alcohol consumption,76.12% recognized radiation to the chest, 62.58% of the women recognized aging, as the risk factor. In another study of Tanzania, majority of participants (57.5%) identified family history as risk factor, 41% of the respondents recognized alcohol drinking as risk factor and followed by 35.5%

said hormonal therapy as risk factor (*Chantal and Stephen,2009)*. A similar result found in the study conducted by Chantal and Stephen's in which 45% knew family history as a risk factor for breast cancer (Chantal and Stephen,2009).

Among the participants knowledge about BSE, 45.28% never heard of it, 41.67% population heard of it but never had an exam, 3.89%practised it occasionally, and 0.28% practice it monthly and 8.89% practice it once in 2-3 months. In compare to another study which conduct in student in Saudi Arabia, awareness of BSE, 79% of participants heard about BSE, 47.5% knew how to perform BSE and rest of were neither aware of frequency of performing BSE (Oluwole,2008).

In our study, only 22.22 % of the population just heard about the term mammography but most of them 77.78 % population have no idea about mammography. Here, a similarity can be seen with the Ugandian women (Wampler, Ryschon and Manson, 2006). Although the study was done on the students, but they have the lack of information of mammography and other diagnosis options.

For Cervical cancer, In our study we found about 91.17% knew about hormonal contraception use, followed by 89.70% of the participants identified family history, 72.22 % heard about cervical cancer, and 62.22 % women were aware of the risk factors of cervical cancer. And among them 47.05% knew of smoking, 70.59% knew of aging, 72.79% knew about Human papilloma virus, 69.85% knew about multiple sexual partner, 72.05% knew multiple pregnancies, 52.20% knew no condom use,and 72.05 % know HIV/AIDS as the Cervical Cancer risk factors. A study conducted by Agam B. Bansal and Abhijit P. Pakhare in which 65.5% had heard about cervical cancer among population 400(AgamB. Bansal et al) Which is similar to our study. In another study in Tanzania overall knowledge of cervical cancer was low, and the majority of women were not aware of cervical cancer risk factor and importance of cervical cancer screening (Chantal and Stephen,2009).

A lack of knowledge on cervical cancer and the Pap smear test was found among Malaysian women that is similar to our study, such that we found 19.16% of the population said they heard about PAP test and 80.83% said they had not heard about PAP

test. 59.44% participants chose early detection & treatments for doing Pap Smear test, The remaining 31.94% did it for doctor's/nurse's advice, 8.61% did it for husband's/relatives instruction,, 4.17% did it because of doctor's/ nurse advice, 2.5% did it for diagnostic measure.

Major barrier to undergo for screening both the breast and cervical cancer in Bangladesh is lack of knowledge, statistics showed that 53.06% said lack of awareness followed by 47.22% said lack of knowledge. And in this study participants of 82.28% believed that early detection can improve treatment outcome. That is similar to a study in Egypt where 98.7 % believe the same (Dina N.K.B & Ramy R.G,2013).

Statistics showed that source of information were 36.67% as major sources from television, 28.61% from newspaper, 30.56% from friends and relatives. 19.16% from educational institute, 3.89% from public lecture, 1.94% from radio. Media was the main source of information on cancer by 48.6% female high school student in Turkey while 44.4% mentioned health professional (Karayur et al, 2008). In another study, Chinese women aged 20 years or greater got information through mass media such as newspaper and television was acknowledged by 73.2% as the major information (Yan ,2009). These result means that media one of the most important sources of information about both type of cancer.

5.2. Conclusion

Throughout the world as well as our country number of breast and cervical cancer patient is increasing day by day. Results showed that women in Bangladesh heard about both type of cancer but they did not have proper knowledge about it. Respondents were found having a low level of knowledge on the sign and symptoms. Results showed that only few people practice BSE, 45.28% never heard of it, 41.67% population heard of it but never had an exam, and they have limited knowledge on CBE and extremely poor knowledge in Pap smear test. There is a need to raise the knowledge among people. Importantly efforts should be made from govt. level to remove barriers to breast and cervical cancer health promotion and early detection found even when no symptoms found. Knowledge about important of screening and practice of it was also very low. Policy makers and health professionals are not much concerned about this alarming condition. This study conducted to improve the knowledge and awareness to change the misconceptions regarding breast and cervical cancer. Thus, more educational programs, conferences should be designed to provide comprehensive information on breast cancer. Mass media can also contribute to improve this alarming condition.

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KNOWLEDGE AND ATTITUDE OF BREAST CANCER AND CERVICAL CANCER AMONG WOMEN AGE 36 TO 55

(Department of Pharmacy, East West University)

(All the questions asked are used for research purpose only and all the information is kept confidential)

Place a tick (√) on your choice of answer

DEMOGRAPHIC INFORMATION

1. Name ***(if interested)***: _____

2. Age: ☐ 15-20 ☐ 21-25☐ 26-30☐ 31-35 ☐ 36-40 ☐ 41-45 ☐ 46-50 ☐ 51-55

3. Religion: ☐ Islam ☐ Hindu ☐ Buddhist ☐ Christian ☐ Others: _____

4. Education: ☐ Illiterate ☐ Primary school (Class 1- Class V) ☐ High school (Class 6- Class 10) ☐ College ☐ University ☐ Others: _____

5. Occupation: ☐ Student ☐ Employed ☐ Retired ☐ Housewife

6. Marital status: ☐ Single ☐ Married ☐ Divorced ☐ Widowed

7. Net household income (BDT) : ☐ < Tk 5000 ☐ Tk 5000-10,000 ☐ Tk 10,000-50,000 ☐ >Tk 50,000

BREAST CANCER RELATED INFORMATION

8. Have you ever heard about Breast Cancer? ☐ Yes ☐ No

9. Are you aware of Breast Cancer Risk Factor? ☐ Yes ☐ No

(If answer to question no.9 is 'Yes' then tick the following table)

Risk Factors of Breast Cancer	Yes	No	Don't know
10. Aging			
11. High Fat Diet			
12. Smoking			
13. Radiation to the chest			
14. Alcohol consumption			
15. Oral contraceptive use			
16. Genetics Factors			
17. Early menarche (<12 years)/ Late menopause (>55 years)			
18. Lack of nutritious food			
19. First childbirth after 30 yrs			
20. Nulliparous (no child)			
21. No breast-feeding			