**YANGON UNIVERSITY OF ECONOMICS**
**DEPARTMENT OF APPLIED ECONOMICS**
**MASTER OF PUBLIC ADMINISTRATION PROGRAMME**
**(NAY PYI TAW)**

# A STUDY ON KNOWLEDGE AND PRACTICES REGARDING BREAST CANCER AMONG WOMEN IN MYANMAR

**(CASE STUDY IN ZABUTHIRI AND OTTARATHIRI TOWNSHIP, NAY PYI TAW)**

**LEI YIN MON PHYO**
**EMPA - 18 (18th BATCH)**

**MAY, 2023**

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A thesis submitted in partial fulfillment of the requirements for the degree of Master of Public Administration (MPA)

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# YANGON UNIVERSITY OF ECONOMICS
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This is to certify that this thesis entitled **"A Study on Knowledge and Practices Regarding Breast Cancer among Women in Myanmar (Case Study in Zabuthiri and Ottarathiri Township, Nay Pyi Taw)"**, submitted as a partial fulfillment towards the requirements for the degree of Executive Master of Public Administration (EMPA) has been accepted by the Board of Examiners.

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# ABSTRACT

This paper examines a study on knowledge and practices regarding to breast cancer among women in Myanmar: case study on Zabuthiri and Ottarathiri Township, Nay Pyi Taw. The objectives of the study are to evaluate the knowledge of risk factors and early warning signs of breast cancer and to examine the practice of breast self-examination and breast cancer screening test among women. In this study, 200 respondents are asked to collect the data. Their responses are gathered through questionnaire surveys with structured questionnaires. It is found that most of respondents use the clinical breast examination. Costing money is the main difficult factor in clinical breast examination for respondents. Most of respondents perform breast self-examination in the week after the period ends. Respondents consider that using oral contraceptives increases the risk of breast cancer. It is also found that half of respondents make physically active throughout life to prevent breast cancer. Most of respondents check for breast self-examination. The results say that respondents lactated due to risk factor of breast cancer, and majority avoids smoking for the risk of breast cancer. Nearly half of respondents answered that being physically active throughout life is less risk of breast cancer.

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# LIST OF ABBREVIATIONS

| | |
|---|---|
| ACS | American Cancer Society |
| ANCCN | American National Comprehensive Cancer Network |
| ASCO | American Society of Clinical Oncology |
| ASEAN | Association of South East Asia Nations |
| BSE | Breast Self-Examination |
| CBE | Clinical Breast Examination |
| CRA | Collaborative Research Agreement |
| CT | Computed Tomography |
| DMR | Department of Medical Research |
| ER | Estrogen Receptor |
| GAVI | Global Alliance for Vaccines and immunization |
| HBV | Hepatitis B Virus |
| HDR | High Dose Rate |
| HER | Human Epidermal Growth Factor Receptor |
| IAEA | International Atomic Energy Agency |
| IARC | International Agency for Research on Cancer |
| MNCCP | Myanmar National Cancer Control Plan |
| MOHS | Ministry of Health and Sport |
| MRI | Magnetic Resonance Imaging |
| NCDs | Non-communicable diseases |
| NGO | Non-governmental Organization |
| PACT | Program of Action on Cancer Therapy |
| PBCR | Population Based Cancer Registries |
| PET | Positron Emission Tomography |
| PR | Progesterone Receptor |
| SAC | State Administration Council |
| SARA | Service Availability and Readiness Assessment |
| SPSS | Statistical Package for the Social Sciences |
| WHA | World Health Assembly |
| WHO | World Health Organization |

# CHAPTER I
# INTRODUCTION

## 1.1 Rationale of the Study

Today cancer is a major public health problem both in our country and around the world due to its disease burden and increase in mortality and incidence. Breast cancer mortality rate can be reduced by early detection and by early treatment initiation. Many patients with symptomatic breast cancer experience are a long delay in getting diagnosis and treatment which can negatively affect their prediction.

Breast cancers is a disorder in the cells of the breast can't be controlled. There are different types of breast cancer. The type of breast cancer depends on which cells in the breast become cancerous. Most breast cancers are detected in the early stages. But a small proportion of women are diagnosed with breast cancer after it has spread to other parts of the body. Breast cancer treatment is very effective, especially when the disease is detected early. The first type of treatment for breast cancer is surgery and other additional treatments are chemotherapy, radiation therapy and hormone therapy. Treatment relies upon at the sort of breast cancer. If this is the case, the type of treatment may be different. Secondary cancer also called “advanced” or “metastatic” cancer, is not curable.

Many symptomatic breast cancer patients experience long delays in receiving diagnosis and treatment. Breast cancer mortality rates can be reduced by the early diagnosis of disease, as well as by early treatment initiation. So, early detection of breast cancer plays an important role in reducing breast cancer incidence and mortality. Breast self-examination practice is cost effective, easy to apply, convenient, painless and private screening for every woman to ensure safe and early detection of breast cancer. It is safe and non-invasive screening method. Early detection should be prioritized based on awareness of early signs and symptoms. BSE involves a woman looks and feels each breast for possible breast lumps, distortion, change in nipple appearance and swellings.

When women do BSE regularly, any changes on the breasts are more likely to be detected early. Although BSE is a simple ways that can potentially save women's lives, but BSE has received little attention and there are no studies on BSE at the community level. Breast cancer.org recognize that breast self-examination can be a useful and important screening tool, when combined with regular physical exams by a doctor, mammography, ultrasound and CT (Computed Tomography) or MRI (Magnetic resonance imaging) . Breast cancers can be early detected by performing breast self-examination in combining with other screening methods. According to the latest WHO data published in 2020 Breast Cancer Deaths in Myanmar reached 3,192 or 0.89% of total deaths.

According to the National Breast Cancer Foundation, if breast cancer is detected early and has not spread to other parts of the body, the 5-year relative survival rate is 99 percent. Therefore, it is very important to be proactive about health through early detection. The good survival rates have to do with increasing discussion, awareness and early treatment. Every woman should know how their breasts look and feel so she can be aware of any changes that may occur. Awareness in the context of this thesis can be defined as the combination of knowledge, practices and health seeking behavior. After exploring knowledge level and practices of participants, the aim is to improve their knowledge level towards breast cancer by providing them information on breast cancer. Therefore this study aimed to assess the knowledge and practices of women with breast cancer in Myanmar. It seeks to highlight what women from the Nay Pyi Taw Region (Zabuthiri and Ottarathiri Townships) of Myanmar think or know about breast cancer.

## 1.2 Objectives of the Study

The objectives of the study are as follow:

- To evaluate the knowledge of risk factors and early warning signs of breast cancer
- To examine the practice of breast self-examination and breast cancer screening test among women.

## 1.3 Method of Study

In this study, descriptive and quantitative methods are used. It is based on primary and secondary data. The primary data is collected from 200 respondents by random sampling method and conducting survey with structured questionnaires to assess the knowledge of risk factors and early warning signs of breast cancer and the practice of breast self-examination and breast cancer screening test among women. Cross-sectional descriptive method is used to realize the objectives of the study. The secondary data is collected from research papers, publications, libraries, reports, relevant books, Articles, internet journal and internet websites.

## 1.4 Scope and Limitations of the Study

This study is focused on knowledge and practices regarding to breast cancer among women at Zabuthiri and Ottarathiri Township, Nay Pyi Taw. To examine the practice of breast self-examination and breast cancer screening test among women, 200 female respondents' age from 20 to above 50 years are collected. Among them 142 respondents are collected from Zabuthiri Township and 58 respondents are collected from Ottarathiri Township. This study is conducted on November, 2022. It was impossible to study on all women in Nay Pyi Taw in this period. Therefore, this study limits to assess the knowledge and practices regarding to breast cancer among women in Zabuthiri and Ottarathiri Township only. Other cancers and other areas are not focused in this study.

## 1.5 Organization of the Study

This study is organized into five chapters. In the first chapter, rationale, objectives, methodology as well as the scope and limitations of the study are introduced. The second chapter presents the reviews on background literature that include the sign and symptoms of breast cancer, and breast lump, understanding a breast cancer diagnosis, risk factors of breast cancer, the breast cancer screening and review on the related research studies. The third chapter describes background of breast cancer in Myanmar and management of cancer cases in Myanmar. Data analysis and result were presented in fourth chapter. The fifth chapter presents the conclusion with discussion and appropriate recommendations for breast cancer knowledge and practices among women in Myanmar.

# CHAPTER II
# LITERATURE REVIEW

Cancer is a large group of diseases that can start in any organ or tissue of the body when abnormal cells grow out of control and that grow beyond their usual boundaries to invade adjoining parts of the body and spread to other organs. The latter process is called metastasizing and is a leading cause of death from cancer. Cancer is a main purpose of dying worldwide, accounting for almost 10 million deaths in 2020, or almost one in six deaths. In 2020, new cases of breast cancer are 2.26 million and 685000 deaths globally. As of the end of 2020, there have been 7.8 million women alive who were diagnosed with breast cancer in the past 5 year, making it the world's most prevalent cancer (World Health Organization 2020). The common cancers are breast, lung, colon and rectum and prostate cancers. Lung, prostate, colorectal, stomach and liver cancers are the maximum among cancers in men, whilst breast, colorectal, lung, cervical and thyroid cancers are the most common among women. In countries with strong health systems, survival rates for many types of cancer are higher due to early detection, improvements in quality treatment and survivorship care (World Health Organization, 2018).

There are three steps to diagnose cancer early .The first step the WHO focus in diagnosing cancer is also "Awareness". Improving knowledge and access to people-centered services at all levels of care requires a multidisciplinary team approach and coordination. Step 2 includes diagnosing and staging after the sign and symptoms are detected. Teams of medical professionals are required to clinically assess the patient and diagnose the stage. Step 3 includes the treatment after the cancer stage is diagnosed. After diagnostic testing and cancer stage confirmation, oncologists begin treatment as needed. To access high quality treatment on time is essential for cure which in low-income countries is less than 30% of available treatment services (World Health Organization, 2020).

According to Cambridge Dictionary (2018), awareness in breast cancer is defined as to have the knowledge of existence, or understand of a subject based on

evidence or experience. Breast aware is being aware of any abnormal changes in breast, how they look and feel. Breast aware helps detect any changes in breast appearance and seek medical assistance. Awareness in breast cancer is very important because detecting the cancer at an early stage can save life. Awareness regarding breast cancer helps people to acknowledge about the disease which not only benefits reducing breast cancer stigmas but also improving health literacy.

## 2.1 Causes and Symptoms of Breast Cancer and Breast Lump

The most common symptom of breast cancers is a brand new lump or mass. Breast cancer occurs mostly in the age of over 45 but younger women can affect breast cancer occasionally. In uncommon cases, men also can be identified with breast cancer. Although breast cancer can have various symptoms, the first noticeable symptom is usually a lump or area of thickened breast tissue. If women notice an unusual lump in the breast, it is important to consult a health professional no later than 1-2 months, even if there is no pain associated with the breast. The key characteristics of breast cancer collected from Cancer research UK (2014) and ACS (2016) may be:

- Presence of one or more “hard masses” lumps of any size, shape, texture, with smooth or rough edges in one or both breasts.
- Inflammation (redness, swelling, increase of temperature) of the whole or part of the breast.
- Breast skin changes: significant depressions, redness, or thickening.
- The cause of persistent pain in one or both breasts is not clear (in many cases, breast cancer grows painlessly).
- Retraction of the nipple (before the nipple was another form)
- Redness, peeling, ulcers appear on the nipple.
- Unexplained nipple discharge (including bleeding or transparent fluid).
- Prolonged (over 2 weeks) swollen lymph nodes below or above the collarbone or in the armpit

Generally, signs and symptoms of breast cancers encompass a breast lump or thickening, alteration in size, shape or appearance of a breast, dimpling, redness, pitting or different alteration with inside the skin, alternate in nipple appearance or alteration in the skin surrounding the nipple (areola) and/or abnormal nipple discharge (World Health Organization ,2020).

There are various reasons for breast lumps, most of which are not cancerous. Causes of breast lumps include: infection, trauma, and fibro adenoma, changes in the breast tissue (fibrocystic changes): Tiny, fluid-filled sacs and fibrous (rubbery) tissue feel like lumps. Breast cysts: Fluid-crammed sacs shape while fluid turns into trapped with inside the milk ducts.

Even though breast cancer symptoms vary extensively, many breasts cancers have no obvious symptoms at all. In some cases, the lump may be too small to feel, or it may develop unusual changes that may not notice by own. Occasionally, an abnormal area shows up on a mammogram (X-ray) for diagnosis and leads to further tests. In other cases, the early sign of breast cancer is a new lump or mass in the breast that by own or the doctor can feel. A lump that is no pain, hard and has uneven edges is apparently to be cancer. But sometimes cancers can be tender, soft and rounded. Monthly breast self-examination is the best way to notice any changes in the breasts and it is crucial to get any breast changes checked out by doctor by immediately. (Breast Cancer Org, 2022)

Non-cancer breast tumors are abnormal growths, but they do not spread outside of the breast. Although they are not life threatening, but some types of benign breast lumps can grow a woman's risk of getting breast cancer. Whether any breast lump or change is benign or cancerous, it needs to be checked by a healthcare professional to find out. About 90% of breast masses are not cancerous. Non-cancerous breast abnormalities include benign masses like fibro adenomas and cysts (D Wood, 2016). A benign breast condition is a lump, cyst or nipple discharge (fluid) of the female or male that is not cancerous. The most common for women are fibrocystic breast changes that are fibrosis feels like scar tissue and can be rubbery and firm and cysts that are sacs filled with fluid, they may enlarge and tender before period. Fibro adenomas are solid, smooth, firm, noncancerous (benign) lumps; it is most common in women in their 20s and 30s.

They are common lumps in women and can occur at any age (Adena, 2021). Benign breast conditions are caused by many factors. These factors include the structure of the breasts (fatty tissue and dense tissue) also including age and hormonal issues. Hormone therapy, contraceptive, obesity, menopause and breastfeeding can also cause them. Benign breast conditions cannot be prevented or avoided. The biggest impact on the breast health is family genes. Even so, people can lower the risks for certain conditions. For instance, if they benign breast condition is due to

obesity, consider losing weight. If it's due to taking hormones or contraceptive, talk to doctor about other medication options. The pain and tenderness of benign breast conditions can be uncomfortable. The pain level can be affected by sleep position and clothing. Living with benign breast conditions can also be emotionally difficult. Lots of women are worried that a non-cancerous lump will turn into cancer, although it is less likely (Beth Oller, 2022).

## 2.2 Understanding Breast Cancer Diagnosis

Breast cancer is generally first diagnosed as a palpable mass or as a mammographic abnormality, but also nipple discharge, breast skin changes or it can be noticed in the beginning from breast pain. Suspicious lumps and breast lesions detected by mammography are investigated by biopsy. In rare case, no palpable masses may be diagnosed by screening mammogram. Most breast masses, those seen especially in postmenopausal women are benign. There are numerous potential causes of non-cancerous (benign) breast lumps. The two most common causes of benign breast lumps are cysts and fibro adenomas. Fibro adenomas are the most common breast lumps in young women and are normally small. Additionally many other conditions can present themselves as lumps, such as fat narcosis and sclerosing adenosis. Only the healthcare provider can examine the breast lump.

Cancer begins when genetic mutations disrupt this systemic process. Cells begin to develop uncontrollably. Cancer cells stay inside the body tissue where they have developed, grown and divided to create more cells, which will eventually form a tumor. A tumor may contain millions of cancer cells. Benign tumors are usually grown quite slowly. Cancerous tumors usually grow more rapidly than benign tumors and spread into surrounding tissues, causing damage. It may spread to other parts of the body through the bloodstream or lymph system to form secondary tumors. This is called metastasis. (Cancer Research UK, 2020)

Most people with cancer have no symptoms. For this population, cancer is diagnosed during a medical test for another problem or condition. Test and procedure used to diagnosed breast cancer include Breast Self-Examination, Mammogram, Ultrasound, Computed Tomography (CT) and Magnetic Resonance Imaging (MRI). A person may need additional tests to confirm or disprove the result of the screening test. For most cancers, the only way to make a definite diagnosis is a biopsy. A biopsy

is the removal of a piece of tissue or a sample of cells for further study. (Cancer.Net Editorial Board, 2019)

Once the doctor has diagnosed the breast cancer and works to decide the extend (stage) of the cancer. The stage of the cancer helps determine prognosis and the best treatment options. Detail information about the stage of cancer may not be obtainable until after undergo breast cancer surgery (ML Czajka, 2021) .Test and procedure used to stage breast cancer may include, blood tests, such as a complete blood count, mammogram of the other breast to look for signs of cancer, bone scan, computerized tomography (CT) scan, breast MRI, positron emission tomography (PET) scan. Not all women will require all of these tests and procedures. The doctor chooses the relevant tests based on the specific circumstances and taking into account new symptoms that may be experienced. Breast cancer stages range from 0 to IV with 0 indicates cancer that has not spread or within the milk ducts. Breast cancer stages range from 0 to IV with 0 indicating cancer that does not spread or involve within the milk ducts. The cancer cells spread to other parts of the body indicate stage IV breast cancer, also called metastasis breast cancer. Staging is a way of describing how widespread breast cancer is including the size of the tumor and it helps determine how severe the cancer is and how best to treat it. Staging can be done either before or after the patient undergoes surgery. Preoperative staging is called clinical staging and postoperative staging is called pathologic staging (Judy C, 2021).

Sometimes the cancer will be clinically staged if surgery is not possible right way, or if it's not possible at all. It is based on physical examination, results of biopsy and imaging tests. Clinical grading is used to help plan treatment. Sometimes, cancer is more widespread than clinical stage estimates, and the patient's perspective cannot be predicted as accurately as pathological stage. In both staging systems, 7 key pieces of information are used; (1) The extent size of the tumor (T) – How large is the cancer? Has it grown into nearby areas? (2) The spread to nearby lymph nodes (N) – Has the cancer spread to nearby lymph nodes? (3) The spread (metastasis) to distant sites (M); Has the cancer spread to distant organs such as the lungs or liver? (4) Estrogen Receptor (ER) status; Does the cancer have the protein called an estrogen receptor? (5) Progesterone Receptor (PR) status; Does the cancer have the protein called a progesterone receptor? (6) HER2 status; Does the cancer make too much of a protein called HER2 (7) Grade of the cancer (G); How much do the cancer cells look

like normal cells? Once all of these factors have been determined, this information is combined in a process called stage grouping to assign an overall stage (ACS, 2021).

## 2.3 Risk Factors of Breast Cancer

Studies show that breast cancer risk is due to a combination of factors. In the attempt to understand the occurrence of breast cancer, research focused on the identification of risk factors.

### A. Gender

Gender is the biggest risk factors and simply being a woman is the major risk factor for developing breast cancer. Men can get breast cancer, but this disease is about 100 times more common in women than in men. It may be due to low levels of the female hormones estrogen and progesterone, which can promote the growth of breast cancer cells in men. (National Cancer Institute, 2012).

### B. Family history

Women with a family history of breast cancer have been found to be more likely to develop breast cancer. This risk is linked with a history of breast cancer in a first - degree relative (mother, sister, or daughter) but it is also thought to be associated with a paternal history of breast cancer. Women who develop breast cancer at a younger age are more likely to have a family history risk. Having a close male blood relative with breast cancer also increases a woman's risk of developing the disease (National Cancer Institute, 2012).

### C. Drinking alcohol

Regularly consuming alcohol is related to multiplied hazard of breast cancer. Limiting the quantity of alcohol you drink can lessen your threat of breast cancer. Studies indicate that the more alcohol a woman drinks, the more likely she is the risk for breast cancer (National Cancer Institute, 2012). There does now no longer look like a ‘safe’ stage of normal alcohol intake for hazard of breast cancer, consistent with the evidence. Alcohol can also additionally growth threat for breast most cancers in some of ways, inclusive of assisting most cancers-inflicting molecules to go into cells or negative mobileular DNA. Alcohol is also thought to increase levels of the hormone oestrogen, which can influence breast cancer risk.

**D. Breast feeding History**

Breastfeeding can lower breast cancer risk, especially if a woman breastfeeds for longer than 1 year. There is less benefit for women who breastfeed for less than a year, which is more typical for women living in countries such as the United States. There are numerous motives why breastfeeding protects breast health: making milk 24/7 limits breast cells' potential to misbehave maximum ladies have fewer menstrual cycles while they may be breastfeeding (brought to the nine overlooked durations throughout pregnancy) ensuing in decrease estrogen degrees many ladies generally tend to consume extra nutritious meals and comply with more healthy lifestyles (restriction smoking and alcohol use) while breastfeeding Beyond breast health protection, breastfeeding provides important health benefits to the baby and helps the bonding process.

**E. Smoking**

The hyperlink among smoking and breast most cancers is unclear, however pollution from cigarettes had been determined in breast cells. As smoking is a chief motive of coronary heart disease, lung most cancers and lots of different cancers, now no longer smoking is constantly a clever fitness choice. If you smoke and drink, the hazard for a few cancers will increase even more. This is due to the fact tobacco and alcohol paintings collectively to harm the cells of the body. Smoking also can increase complications from breast cancer treatment, including:

- harm to the lungs from radiation therapy
- trouble restoration wounds after surgical procedure and breast reconstruction
- higher risk of blood clots when taking hormone-blocking therapy medicines.

**F. Physical activity level**

Women who are not physically active throughout life may have a higher risk of breast cancer. (National Cancer Institute, 2012). Active humans have decreased breast most cancers chance as compared with inactive humans. National tips suggest at the least half-hour of slight depth exercising maximum days of the week, aiming for 2.five to five hours according to week. Moderate depth exercising makes them puff. Muscle strengthening workout 2 days per week also is recommended. One way to reduce the risk of breast cancer is through regular physical activity. They can

communicate together along with your GP approximately how they could satisfactory reap this.

According to some studies, the other factors such as changes in other hormones due to night shift working and smoking that expose to carcinogenic chemical and also may increase breast cancer risk. Studies have shown that postmenopausal women who do not use hormone therapy, the chance of getting breast cancer is higher in women who are overweight than in women of a healthy weight (National Cancer Institute, 2012).

Breastfeeding can also reduce the risk of breast cancer. Other ways to reduce the risk include keeping a healthy weight and avoiding oral contraceptives or hormone replacement therapy after menopause (Cancer.Net Editorial Board, 2021). Several breast cancer risk assessment tools have been developed to help people estimate their risk of breast cancer. Having a threat aspect does now no longer imply they will get the disorder and now no longer all threat elements have the identical effect. Some women are at risk for breast cancer without other known risk factors. Because it was not known how to prevent the risk of breast cancer based on the identified risk factors, cancer advocacy. The American Cancer Society (2006) recommended that women should participate in regular screening, get clinical breast examinations, and do monthly BSE. These methods were believed to offer the best chance of survival by detecting breast cancer as early as possible.

**G. Body weight**

Overweight or obese of older women have a higher risk of getting breast cancer than those a healthy weight, especially after menopause. Fatty tissue is the body's foremost supply of oestrogen after menopause. Having extra fatty tissue way better oestrogen ranges inside the body, which might also additionally growth breast most cancers risk. Being overweight can also increase the risk of the breast cancer coming back (recurrence) in people who have had the disease.

**H. Using the oral contraceptive pill**

A range of research suggest a woman's breast most cancers danger is expanded at the same time as she is taking the oral contraceptive tablet and for up to ten years after preventing it. For maximum younger girls of their 20s and 30s the

boom in chance is small, however for older women and people with different sturdy danger factors (together with a defective gene) the danger can be greater.

## 2.4 Breast Cancer Screening

Early-degree most cancers detection can drastically lessen breast most cancers loss of life quotes with inside the long-term. The most important factor for the best prognosis is to identify early-stage cancer cells. There are several diagnostic methods for breast cancer, including mammography, magnetic resonance imaging, ultrasound, computerized tomography, positron emission tomography and biopsy. However, these technologies have some limitations such as being expensive, time consuming and inappropriate for young women.

The most important benefits of breast cancer screening are reduction in the risk of death and the additional number of years of life that a person lives as a result of receiving a treatment. Costs include the financial costs and other costs of the screening system itself (risk of radiation, suffering, anxiety and inconvenience), follow-up diagnostic work-up when false-positive results occur, and over diagnosis (diagnosis of cancer that is never clinically evident). The cost-benefit ratio varies significantly with patient age. Methods used for detection of breast cancer are Breast Self – examination (BSE) and Clinical Breast Examination (CBE) (Ellen Warner, 2011).

### 2.4.1 Breast Self - Examination

Breast self - examination known as self - awareness, BSE are encouraged for women of any age by the American Cancer Society (2007 a, 2007 c). BSE have to be accomplished month-to-month via way of means of the girl herself. BSE is an option for women starting in their early 20s. It can be performed at home by the woman; as a consequences , there is no cost associated with the examination. Another thing is that there is only a one month time interval between screenings. BSE seems to be an important viable optional substitute available in rural areas, where access to CBE and mammograms is difficult and early detection of breast cancer for treatment that can prolong women's lives and reduce suffering.

According to ACS (2008) recommendations, women should know how their breasts normally feel and report any breast changes promptly to their health care providers. Health care providers should educate women about appropriate technique as well as the benefits and limitations of BSE. Whether women participate in

structured BSE or not, all women should be familiar with the shape and texture of their breasts. It is also theorized that a woman will be extremely sensitive to subtle changes in her breast tissue. The combination of frequency of performance and familiarity of her own breast tissue suggests that breast cancer could be detected in the earliest stage (ACS, 2008). Consistent with guideline by Oussama (2006), instructs that breast self - examination can be done in different positions including lying down or standing up in the shower, primarily depending on the preference of the woman. The tactile examination of the breast can be done using vertical strip, wedge section, and/or concentric circle as the following:

**1. Vertical strip:** The woman should start in the underarm area of the breast, moving the fingers downward slowly until she reaches the area below the breast. Then move the fingers moved slightly towards the middle and start the process again, this time moving the hand upwards over the breast. This process continues up and down until the entire breast and underarms surface is examined. Both breasts ought to be examined (Oussama, 2006).

**2. Wedge section**: This method is developed as some women find the circular movement of the hand easier to use during the BSE. In this method, the breast is divided into wedges, and the fingers move towards the centre of the breast or the nipple. Both breasts are examined wedge by wedge in this manner until completely covered (Oussama, 2006).

**3. Concentric circle:** The woman uses a circular motion starting with a small circle around the nipple area to feel the breast. The circle is widened as the woman moves over the surface of the breast. The breast, higher chest and underarm vicinity are absolutely tested via this round motion. As with other methods, both breasts should be fully examined (Oussama, 2006).

The American National Comprehensive Cancer Network [ANCCN] (2008), Women are advised to perform BSE as follows,

**A. Frequency Performance Breast Self - Examination**

- BSE should be done seven to ten days after the first day of menstruation.
- BSE should not be performed during pregnancy.
- Monthly BSE should be done at the same time.

**B. Ways of Self-Breast - Examination**

The American National Comprehensive Cancer Network [ANCCN] (2008), instructs that breast self - examination can be examined in two positions including lying down on the bed and standing undressed from the waist up in front of a mirror**,** as follow:

**B.1. Stand undressed from the waist up in front of a mirror.**

Step 1. Let arms relaxed by your sides and compare breasts while turning from side to side. Look for any change in breast size, shape, skin texture or color, including redness, dimpling, puckering or retraction of the skin.

Step 2. Put the hands on waist and press inward, then turn from side to side to notice any changes.

Step 3. Raise your arms above your head and press forward. Again, turn from side to side and look for changes.

Step 4. Place hands on waist, and lean towards the mirror, letting the breasts fall forward. Notice any change in breast shape.

Step 5. Check for nipple discharge by using the thumb and middle finger to squeeze the breast tissue around the nipple.

Step 6. Applying skin cream, lotion or while taking a bath to check for bean-sized lumps or thickening under arm; deeply up and down the inside of the armpit, and up and forward toward chest; above and below collarbone

Lie down on the bed:

Step 7. Place a pillow under left shoulder. Place the left hand behind the head and reach across with right hand to left breast.

Step 8. Holding three middle fingers together and flat to use light, medium and deep pressures, move hand in a wide circle or vertical strips around the breast, letting the breast tissue slide under the pads of fingertips.

Step 9. Move hand in increasingly smaller circles until the entire breast is covered.

Step 10. Place fingers flat on the nipple and depress, feeling beneath for any changes. Then, reverse hands and the pillow to repeat the exam on the right breast.

In addition, performing BSE following the guideline can help women familiar with their breasts and help them early detect the unusual changes on their breasts.

Moreover, BSE is a simple procedure that every woman can do. By this method, women do not rely on professionals or healthcare facilities. Women who can perform by themselves at any time and any places without charge. It is considered low cost exam but effective in detecting abnormal breast (ACS, 2008). The American Cancer Society (2008) published a Cancer Prevention and Early Detection Facts and Figures report, including challenges, goals, and objectives for the early detection of breast cancer Cokkinides, Bandi, Seigel, Ward, and Thun (2008)

### 2.4.2 Clinical Breast Examination (CBE)

CBE includes a visual and physical examination of the entire breast and chest and should be performed annually by a trained health care provider, which includes lymph node areas above and below the collarbone and under each arm (ACS , 2008). Health care providers examine shape, texture, location of any lumps, and skin changes during a CBE (American Cancer Society, 2007a; & 2007c). CBE are employed to detect breast abnormalities, to evaluate patient reports of symptoms and detect palpable breast cancers at an early stage. Early stage breast cancer treatment options are generally more extensive, include less toxicity and are usually more effective than treatments for later-stage cancers. Early detection of significant tumors identified by CBE in average-risk women younger than 40 years may lead to earlier therapy and better prognosis. The involvement of CBE to detect breast cancer in asymptomatic women is controversial as it improves survival and decreases mortality (Kirsten M. 2009).

There is no universal agreement on mammogram screening intervals, they vary in age. The American Cancer Society recommends those women between the ages of 40 and 49 have a routine screening every 1-2 years and that those over the age of 50 have an annual screening mammogram (ACS, 2008). Although mammogram plays an important role in breast cancer screening, it is expensive and available only in hospital. Mammogram is the most sensitive method for early detection of breast cancer, but both clinical breast examination (CBE) and breast self-examination (BSE) have the potential to detect breast cancer early without the expense of a mammogram. CBE can detect about 60% of cancers detected on mammograms and some cancers are not detected on mammograms. False positives occur when CBE finds something that looks or feels like cancer but is not. Getting a false positive result can lead to follow-up tests and cause fear and anxiety. However, the goal of CBE is not to avoid

false-positive results, but to find as many cancers as possible. (Noel S,2003). CBE continues to be widely practiced and recommended by many leading health organizations (Saslow et al., 2004).

**A. Mammograms**

The goal of screening mammography is to detect breast lesions earlier in their natural history than would be detected by clinical or self-breast examination. By detecting lesions early, they are less likely to metastasize and can be treated with less toxic therapy, increasing survival. There are two ways to create a mammogram. Film-screen mammography creates photographic film, while digital mammography creates digital images. Both methods use the same process for the images. When taking mammogram X-ray, the breast will place between two clear plates, which will squeeze it between them to hold it in place. This flattens the breast for a higher photo and prevents the photo from blurring. Some humans might also additionally enjoy mild ache and discomfort. A specialist checks for anything unusual that could be a sign of cancer by using the mammogram X-ray. Any area that is different from normal tissue can be a concern.

The radiologist will search for regions of white, excessive density tissue and be aware its size, form and edges. A lump or tumor will appear as a focused white area on a mammogram. Tumors may be cancerous or benign. It is not a health risk and is unlikely to grow or change shape if a tumor is benign. Most lumps located the breast aren't cancerous. Sometimes they can be a sign of cancer, so a radiologist will check their shape and pattern. The test doesn’t always find cancer that’s there. So some people with breast cancer may be missed due to a false negative result. For some, there is no breast cancer, but a mammogram can pick something up. This is called a false positive result and may lead to further tests, such as a breast biopsy (Claire Sissons , 2018). Overall, breast cancer seems to reduce breast cancer death rates, but it is not without its risks. Investigators have raised concerns about over diagnosis, false- positive mammograms and over-anxiety among women (Lauren M. 2014).

**B. Ultrasound breast imaging**

Whole breast ultrasound (SWBUS) is more and more getting used as a complementary screening device further to mammography. Multiple randomized trials

(RCT) evidence shows that routine screening mammography in women over 40 can help detect breast cancer early and reduce breast cancer deaths by more than 30%. However mammography is an imperfect test and is particularly limited by dense breast tissue. Dense breast tissue may cover the underlying tumor, and therefore reduces mammographic sensitivity. Therefore, dense breast tissue is an independent risk factor for breast cancer (J Geisel, M Raghu, R Hooley 2018). Clinical studies show that ultrasound can detect smaller cancers in women with dense breasts, where mammogram might miss them (Ying et al., 2012).

Breast ultrasound also used for women who are at high risk of breast cancer and cannot undergo MRI screening or for pregnant women and women who should not be exposed to the X-ray used in mammography. A breast ultrasound scan is a test that uses high frequency sound waves to create an image of the inside of the breast. Ultrasound of the breast can also be used to screen women with dense breast tissue, ducts, glands and fibrous tissues that are difficult to detect with mammograms. This test has become a routine procedure for detecting tumors in young women (Cancer Research UK, 2022). The ultrasound test may also be done along with other tests, such as a breast exam and a mammogram. The ultrasound scan can also be done when a breast biopsy is needed. The ultrasound will help the doctor find the exact area of the breast to biopsy. There are no randomized clinical trials examining the effect of screening ultrasonography on breast cancer mortality ( M Akram, 2017).

**C. Computed Tomography (CT)**

CT scan is a test that uses x-rays and a computer to create detailed pictures of the inside of your body. It takes pictures from different angles. The laptop places them collectively to make a three dimensional (3D) image. CT scans display a slice, or cross-section, of the body. The image shows your bones, organs, and soft tissues more clearly than standard x-rays. CT scans can show a tumor's shape, size, and location. They can even show the blood vessels that feed the tumor – all without having to cut into the patient. The CT can detect totally unsuspected very small breast cancers that were unable to be identified by conventional mammography or physical examinations. The CT scan also seems to be a better test for recognizing precancerous high risk lesions. Doctors often use CT scans to help them guide a needle to remove a small piece of tissue. This is called a CT-guided biopsy**.** CT scans can also be used to guide needles into tumors for some types of cancer treatments.

### D. Magnetic resonance imaging (MRI) and breast cancer

MRI or magnetic resonance imaging is a technique that uses magnets and radio waves to produce detailed cross-sectional images of the inside of the body. MRI doesn't use X-rays, so it doesn't involve any radiation exposure. Unlike mammogram or breast ultrasound, a breast MRI requires that may need to have a contrast dye injected into the vein through the intravenous line before the image is taken. The contrast solution will help show potentially cancerous breast tissue more clearly.

## 2.5 Reviews on Previous Studies

Many studies of applied and theoretical research concerning Breast Cancer have been conducted to examine the practice of breast self-examination and breast cancer screening test among women.

Naharin Syeed (2014) studied A Study of Awareness about Breast Cancer and Practice of Breast Self-Examination among Female Respondents in Dhaka. The finding shows that 21% women had knowledge about performing breast self-exam and 17% had heard about mammography. Overall, to controlling the morbidity and mortality rate of breast cancer we should increase the level of knowledge.

Besides, Harrindra Seepersaud (2020) examined Breast Cancer Knowledge, Attitude, and Screening Practices among Hispanic/Latino. The findings show that Hispanic/Latino women had a positive attitude toward information sources such as physicians and clinical facilities; however, the findings imply Hispanic/Latino girls had bad mind-set whilst those people lacked records sources. There had been amazing variations in how often Hispanic/Latino girls get right of entry to screening practices, due to income, knowledge, culture, and attitudes in the direction of a fitness circumstance like breast cancer. The findings discovered an possibility for fitness specialists to sell breast most cancers recognition with the aid of using teaching Hispanic/Latino women approximately the significance of screening practices and behavioral compliance to lessen their late-degree diagnoses of breast cancer.

Dr Vanshika Gupta (2020) highlighted Awareness of Breast Cancer risk factors and practice of Breast Awareness among female college students of Delhi University. The findings showed that the need of educational programs to enhance awareness among young women, as the study clearly shows low levels of awareness regarding Breast Cancer and Breast Awareness. Significant association between knowledge of risk factors and Breast Awareness report that poor awareness levels of

Breast Cancer and its risk factors result in poor practice of self-examination of breasts hence poor breast awareness.

Salina Shrestha (2020) explored knowledge, attitudes and practices regarding breast cancer among college students in Nepal. The findings showed that the students had poor knowledge level regarding breast cancer. This suggests that the humans in Nepal are nevertheless missing expertise concerning breast most cancers, for this reason excessive mortality fee from breast most cancers as compared to evolved countries. The easy steps of teaching girls approximately attention concerning breast most cancers can help them locate breast most cancers early and feature ideal survival prices with most cancers treatment.

Myo Khin, San Shwe, Khin May Oo, Le-Le Win (2021) examined Breast Cancer Awareness in Myanmar: Results of a Hospital-based Study in Mandalay. The findings show that older women (age 49 years or more) had significantly better awareness of two early breast cancer signs; change of breast shape and discharge from nipple. Those with less than high school education had significantly lower awareness of the following signs of breast cancer; thickening of the breast skin dimpling of the breast skin, change of breast shape and discharge from nipple. They also displayed significantly lower awareness of risk factors of breast cancer. Among the study respondents, only one third had heard of self-breast examination and only a few examined both breasts regularly.

Ni Ni Lwin (2019) examined the incidence rate of Breast Cancer increased from 2014 to 2018 according to the YGH hospital's statistics. This study showed that five latent factors were risk factors, preventive measures, right ways of technique, age & gender and health seeking behaviors. Five latent factors mainly influenced on the respondent's attitude towards Breast Cancer and Breast Self-Examination technique.

Currently, there are no other studies that have integrated on knowledge and practices regarding to breast cancer among women in Myanmar: Case Study in Zabuthiri and Ottarathiri Township, Nay Pyi Taw. The purpose of this academic work is to evaluate the knowledge of risk factors and early warning signs of breast cancer and to examine the practice of breast self-examination and breast cancer screening test among women. Thus, this study will help knowledge and practices regarding to breast cancer among women in Myanmar.

# CHAPTER III
# BREAST CANCER IN MYANMAR

## 3.1 Problems of Cancer in Myanmar

Cancer is a major public health problem in Myanmar, and cancer registries are currently conducted through both hospital-based and population-based approaches. Until now, there are no population-based estimates of cancer incidence and mortality in Myanmar but pilot work for data entry system in Nay Pyi taw is in progress. The common cancers have been Lung, Stomach, Cervix uteri, Breast and Liver in both sexes. Lung, Stomach, Liver, Oesophagus, and Colorectum in Males and Cervix uteri, Breast, Lung, Stomach, and Colorectum are mostly occurred in Females. In terms of deaths, the top 5 cancer deaths are lung cancer, cervical cancer, stomach breast and liver (Ferlay et al., 2020).

Cancer is one of the main reasons of death worldwide. More than 70% of all cancer deaths occur in low and middle income countries in which available resources for early detection, diagnosis, treatment and palliative care are limited or non-existent. It is a sad age of development that more than a third of cancers are preventable, and that a third, if detected early and standard therapies are available, can reduce the incidence of cancer, as well as reduce the unnecessary pain and suffering associated with most cancers.

An aging and growing population has increased the number of cancer-related lifestyles, such as a sedentary lifestyle; eating more red meat and fat; drinking alcohol. It has been found that the burden of cancer is increasing due to environmental protection. It is estimated that there will be more than 750,000 new cancer cases in the region, which is expected to increase to 1.3 million cases per year by 2030. Most cancers have poor survival rates and greatly impair quality of life. GLOBOCAN estimated that there were more than 63 thousand cancer cases in Myanmar every year in 2012, setting the age standard at 140.5 per 100,000 people. Myanmar National Cancer Control Plan (MNCCP) is developed with the aim of improving access to

palliative care to 30% from 2015 by 2021 and completion of treatment. It has a Master Plan, long-range targets or goals, and strategic in nature.

A recent study estimated that there were more than 66,000 new cancer cases (115.1/100,000 population) and 45,000 cancer deaths (94.5/100,000 population) in Myanmar in 2008. Male and female cancer incidence rates are approximately 153.1/100,000 and 115.3/100,000 population, respectively.

The mortality rate is 89.5/100,000 for males and 94.5/100,000 for females. 13 Myanmar currently faces a double burden of non-communicable and non-communicable diseases (NCDs). In 2014, NCDs were estimated to account for 59% of total deaths. Cancer in particular is responsible for 11% of all deaths, or about 50,000 cancer deaths. The most common cancers in men are lung, Liver Stomach Esophagus and colon cancers and breast, breast cancer in women cervix lungs stomach and colon cancers. 43.8% of men and 8.4% of women currently smoke, smoking is the majority.

**Table (3.1) Problems of Cancer in Myanmar**

| Years | Total Population | Number of new cancer cases | Cancer deaths |
|---|---|---|---|
| 2016 | 52885223 | 68751 | 47596 |
| 2017 | 52288341 | 67974 | 47059 |
| 2018 | 52666013 | 69554 | 51059 |
| 2019 | 54045422 | 70259 | 48640 |
| 2020 | 54409794 | 74593 | 52941 |

Source: Globocan (2020)

The new cancer case includes all cancers such as Lung, Stomach, Cervix uteri, Breast and Liver. According to Table (3.1), the total population is 54409794, the numbers of new cancer cases are 74593 and the number of cancer deaths is 52941 in 2020. They are the highest in the study period. The least number of total populations is 52288341, the least numbers of new cancer cases is 67974 and the least number of cancer deaths are 47059 in 2017.

### 3.2 Breast Cancer in Myanmar

In Myanmar, breast carcinoma is the third most common female cancers (incidence rate 22.1 per 100,000 population) accounting for 11.8% of all cancer cases. According to the cancer registry from Medical and Radiation Oncology Unit, Yangon General Hospital, breast carcinoma is the cancer that have mostly occurred among women and number of cases of breast carcinoma is increasing by year.

The death rate is 11.08 per 100,000 population, ranking Myanmar 130th in the world. Furthermore, Breast cancer ranks first among the ten most common cancers from 2001 to 2007, accounting for 17.39% to 18.83% of all cancers and 28.53% to 30.08% of all cancers in women. Despite this high number, Breast cancer death rates have been steadily declining since 1990. The deaths are due in part to modern diagnostic techniques and better treatments. The three main ways to detect breast cancer early are breast self-examination (BSE); Clinical Breast Examination (CBE) and Mammography.

None of the methods are 100% effective, so physicians recommend using all three regularly. The American Cancer Society has published guidelines for screening women at normal risk for breast cancer. The most common screening programs worldwide are breast self-examination (BSE); Clinical breast examination (CBE) and mammography. Mammography is the most effective community-based screening method for early detection of breast cancer. It is acceptable for women to choose not to have BSE or to have BSE regularly (monthly) or irregularly. Women in their early 20s should be told about the benefits and limitations of BSE. Women who choose to undergo BSE review their technique during periodic health checkups. For women in their 20s and 30s; CBE is recommended as part of a routine health checkup, preferably at least every three years. Asymptomatic women age 40 and older have to continue to receive CBE as part of routine health screening probably every year. At age 40, mammograms should begin.

There is limited information on women's knowledge and perceptions of BSE or mammograms in Myanmar. Breast cancer can be detected at a treatable stage if it is detected early with appropriate screening methods in hospitals. A breast examination demonstration was conducted with nursing students and women in the community using breast imaging. Foundation members also conducted peer education for early diagnosis. Therefore, there has been an increase in awareness for early detection of breast cancer in women. The First Joint Cancer Forum Myanmar 2015 was held in

Yangon in collaboration with the Myanmar Doctors Association and the Shwe Nyang Rose Cancer Foundation. The purpose of the forum is to improve the outcomes of cancer patients in Myanmar by improving the professional knowledge of early detection of cancer and timely and effective treatment.

**Table (3.2) Breast Cancer in Myanmar**

| Years | Incidence Number | Motility Number |
|---|---|---|
| 2016 | 6346 | 2644 |
| 2017 | 6274 | 2614 |
| 2018 | 6277 | 2995 |
| 2019 | 6484 | 2702 |
| 2020 | 6912 | 2972 |

Source: Globocan (2020)

According to Table (3.2), the new breast cancer incidence is generally increased year after year. Similarity, the motility number is increased from 2016 to 2018. After that, the motility number is decreased in 2019 and it is increased in 2020. The highest number of new breast cancer incidence and the motility number are 6912 and 2972 respectively. The lowest number of new breast cancer incidence is 6274 and the lowest motility number is 2614 in 2017.

## 3.3 Co-operation with International and Local Organizations

Myanmar is closely cooperating with IAEA and WHO for cancer control. The IAEA supported the establishment of radiation therapy and nuclear medicine departments at Yangon Public Hospital (now Yangon Public Hospital) and a radioisotope laboratory at the Department of Medical Research (DMR). The IAEA further supports human resource development by providing training programs and expert missions. The IAEA Technical Cooperation Program in the Department of Medical Research (DMR) was initiated in 1976-78.

Since then, DMR has cooperated with the IAEA under regular technical cooperation programs and periodic research contracts and coordinated research programs. Since 1994, under the WHO biennial work program, WCO Myanmar has conducted overseas fellowship training for various cancers. It provides technical assistance for early diagnosis and treatment. Strengthening and improving cancer

registries in Myanmar are priority actions for an evidence-based national cancer control plan (Singh et al., 2017). In collaboration with WHO and the International Agency for Research on Cancer (IARC), the International Atomic Energy Agency's (IAEA) Cancer Therapy (PACT) program visited Myanmar in 2015 and identified that most cancers registration is a pinnacle precedence for Myanmar.

Registration activities are underway in Nay Pyi Taw. As a first step, population-based cancer registry (PBCR) is started in Nay Pyi Taw Union Territory and it is recommended to expand to other provinces and regions in the future to establish PBCR (IAEA, 2018). Myanmar provides technical support for capacity building across the field of cancer registration, training a partner country of the Global Initiative for Cancer Registry Development, which builds capacity across the field of cancer registries through networking through IARC regional hubs for advocacy and planning and development of PBCRs in IARC Myanmar (IARC, 2020). A Collaborative Research Agreement (CRA) between IARC and the Myanmar Ministry of Health on the quality of population-based cancer registry data in Myanmar. It aims to support sustainable improvements in scope and use (IARC, 2017).

Cancer statistics, including cancer incidence and mortality data estimated from population-based cancer registries, are important in developing and evaluating strategies for cancer prevention and control policies (Parkin DM, 2006). Myanmar's National Health Plan (2017-2021) recognizes NCDs as a public health priority. Also, one of the national strategic plans for NCDs prevention and control is to develop a comprehensive and sustainable surveillance system. It is a strategy of the National Cancer Control Plan (Ministry of Health, 2017) to establish and develop high-quality regional PBCRs based in public cancer hospitals. This first five-year consecutive report provides an analysis of the first PBCR's data for all cancer sites (five consecutive years) in Myanmar.

Currently, Myanmar and the WHO Country Office, in collaboration with the Program Manager/Center for Cancer, are developing the National Cancer Control Plan 2017-2021. Recently, the Asia Pacific Hospice Network/Lian Foundation invited 14 doctors from four tertiary cancer centers (Nay Pyi Taw General Hospital, Yangon General Hospital, Mandalay General Hospital and Sant San Tun Hospital) provided a three-year clinical training program for 8 nurses and 3 social workers. Myanmar has two 50-bed hospitals run by the charity U Hla Tun Foundation (in Yangon and Mandalay) providing free services. The project started in 1997. It started with light

ambulances and gradually expanded. Now there are two doctors in each hospital. Three elderly nurses; ten nursing assistants and an oncologist visit once a week. Recently, another charity funded out-patient facility was established in Yangon.

**Table (3.3) Co-operation with International and Local Organizations**

| Sr. No. | Name of Organizations | Programs | Years | Advantages |
|---|---|---|---|---|
| 1 | Myanmar Oncology Society | ASCO International and the Conquer Cancer Foundation in Myanmar | 2010-present | It collaborates and cooperates fully with all allied specialties and organizations (both government and non-government) in striving to achieve the aims and objectives of cancer projects. |
| 2 | World Health Organization | WHO Country Cooperation Strategy Myanmar | 2014-2018 | It gives supplement and supports the health development efforts spearheaded by the Ministry of Health in Myanmar. |
| 3 | International Atomic Energy Agency | Programme of Action for Cancer Therapy (PACT) | 2015-present | It helps to reduce the disparities between patients who can and those who cannot access cancer services, and goes to form the basis of a solid national investment, which will benefit patients for decades to come. |
| 4 | World Health Organization | Myanmar National Comprehensive Cancer Control Plan | 2017-2021 | It reduces incidence, prolong survival and ensure the best quality of life possible for cancer patients by prevention of preventable cancers and the provision of high-quality and equitable cancer services to all cancer patients. |
| 5 | Global Health | Global Health Initiative (GHI) | 2017-2019 | It improves outcomes for children with cancers and life-threatening blood disorders through program building, education, and research. |

Source: Globocan (2020)

According to Table (3.3), Myanmar Oncology Society initiates ASCO International and the Conquer Cancer Foundation in Myanmar since 2010. It mainly collaborates and cooperates fully with all allied specialties and organizations (both government and non-government) in striving to achieve the aims and objectives of cancer projects. Myanmar cooperates with World Health Organization for WHO Country Cooperation Strategy Myanmar from 2014 to 2018. It gives supplement and supports the health development efforts spearheaded by the Ministry of Health in Myanmar. Moreover, Myanmar collaborates with International Atomic Energy Agency for Programme of Action for Cancer Therapy (PACT) since 2015. It helps to reduce the disparities between patients who can and those who cannot access cancer services, and goes to form the basis of a solid national investment, which will benefit patients for decades to come.

Also, Myanmar collaborates with World Health Organization in Myanmar National Comprehensive Cancer Control Plan from 2017 to 2021. It reduces incidence, prolong survival and ensure the best quality of life possible for cancer patients by prevention of preventable cancers and the provision of high-quality and equitable cancer services to all cancer patients. Myanmar cooperates with Global Health for Global Health Initiative (GHI) from 2017 to 2019. It improves outcomes for children with cancers and life-threatening blood disorders through program building, education, and research.

## 3.4 Management of Cancer Cases in Myanmar

There are four main cancer treatment centers in Myanmar. The oldest center was established in 1958 at Rangoon (then Yangon) General Hospital, and later as a separate radiotherapy department in 1963. The radiation treatment department at Saw San Tun Hospital in Taunggyi was established in 1962 when Saw San Tun Hospital opened. Recently, a radiation treatment center was opened in the 1000-bed hospital in Nay Pyi Taw. Yangon also has three dedicated center that provides radiation therapy services (Pinlon Cancer Center, 2012), (Grand Hantha Cancer Center, 2018) and (Moekaung Cancer Center, 2022). There is also one private cancer center which offers radiation therapy service in Nay Pyi Taw, 2016. Public centers offer free services, but long waiting periods discourage patients and turn them to other management methods.

Radiation therapy (largely linear accelerator technology) services at four recently upgraded cancer centers have been found to improve, but they are still

insufficient to meet the high volume of cancer patients. HDR brachytherapy has recently started at MGH and HDR brachytherapy is not available in Nay Pyi Taw and Taung Gyi. The Yangon Cancer Registry was established in 1974 and annual reports were published until 1986. No publication between 1986 and 1994. The register was republished after 1994. Four major cities (Yangon, Nay Pyi Taw, Taunggyi, and Mandalay) have hospital-based cancer registries, but have not been integrated into the paper-based national system. Myanmar does not have a population-based cancer registry that collects data on people with cancer. Pilot work for the data entry system is already underway in Nay Pyi Taw.

Good services are provided at Yangon General Hospital (YGH), Mandalay General Hospital (MGH) and Nay Pyi Taw General Hospital (NGH), but due to radioisotope abnormalities, PET-CT and cyclotron equipment are being used optimally. Good diagnostic teams in major general hospitals in Myanmar; Pathology services and cancer surgery are available at teaching hospitals, primarily at teaching hospitals. Some laboratories for cancer diagnosis, however, quality assurance/quality control (QA/QC) of diagnostic facilities is limited. Evidence-based national guidelines on cancer management (diagnosis and treatment) are available and fully implemented. The last update was in 2012. For cancer management; Tertiary cancer centers or cancer centers are generally available or affordable. Subsidized chemotherapy, on the other hand, is generally unavailable or unaffordable. Laminar flow hoods for chemotherapy preparation are not available in tertiary cancer centers. In terms of manpower, local medical universities produce medical oncologists and radiation oncologists.

There are also oncologists' abroad radiation physicists. There is a shortage of technicians and oncology nurses. Only a small number of medical technologists and engineers are available. Cancer surgeons; Physicians and oncologists treat cancer patients in health centers, but a multidisciplinary approach is limited. A multidisciplinary team for cancer management that includes radiologists and palliative care specialists is lacking. Inpatient and outpatient services at Yangon Public Hospital started in 2014, but Mandalay, Pulmonary treatment services are still lacking in Nay Pyi Taw and Taung Gyi. The pain experienced in the home of the primary health minister and community administrator is not generally available.

**Table (3.4) Cancer Cases in Myanmar**

| Years | Hospitals | | | | Total |
|---|---|---|---|---|---|
| | Yangon | Mandalay | Nay Pyi Taw | Taunggyi | |
| 2016 | 27501 | 20625 | 12032 | 8593 | 68751 |
| 2017 | 27189 | 20392 | 11896 | 8497 | 67974 |
| 2018 | 27821 | 20866 | 12173 | 8694 | 69554 |
| 2019 | 28104 | 21078 | 12295 | 8782 | 70259 |
| 2020 | 29837 | 22378 | 13054 | 9324 | 74593 |

Source: Globocan (2020)

The data of cancer cases in Myanmar are collected by hospital-based approach. According to Table (3.4), the largest cancer cases are found in Yangon. Moreover, it is gradually increased yearly. Similarity, the second largest number of cancer cases is found in Mandalay and it is increased year after year. In 2020, the largest numbers of cancer case are found in Yangon, Mandalay, Nay Pyi Taw and Taunggyi by 29837, 22378, 13054, and 9324 respectively. In 2017, the least number of cancer cases are found in Yangon, Mandalay, Nay Pyi Taw and Taunggyi by 27189, 20392, 11896, and 8497 respectively.

## 3.5 Strategy and Action Plan for Cancer

The cancer control program has been identified as a priority program of the Ministry of Health. It has been identified since 1994 as part of a joint WHO/MOHS biennial work plan. It is mostly involved in diagnosis and treatment and palliative care. WHO published guidelines for effective cancer control programs in 2008 in six modules: Planning; defense early detection; diagnosis and treatment; Palliative care; Policy and advocacy. The strategy calls for cancer control programs to be integrated into national health plans, forming a comprehensive systemic framework. Myanmar has a draft NCD Action Plan aligned with the National Health Plan 2011-2016, which includes cancer control. Although Myanmar has a National Cancer Control Program Manager, the National Cancer Control Program (NCCP), there is no cancer control steering committee and no dedicated budget for comprehensive cancer control. Myanmar has a National Health Plan (2011-2016) and is preparing to develop a new National Health Plan for the next five years.

Although it is formulaic, early detection of cancer in the new national health plans. NCD strategic plan is drawn to sure treatment and care for cancer cases. However, there is no separate cancer policy. Specific policies on risk factors such as alcohol and harmful use of tobacco and tobacco products; there is a strategy or action plan. Strategy and action plans have not yet been implemented.

Through national technical cooperation projects, the IAEA provides Myanmar with medical imaging technologies, radiation therapy treatment services, improve the accuracy of dosimeter services to improve nuclear medicine human resource capabilities and promote the use of safe radiation technology throughout 2016 and 2017. A national dialogue on cancer control was organized by the Ministry of Health and Sports to promote comprehensive discussions on cancer control priorities with preliminary impact conclusions and recommendations. At the same time, IARC launched a project to support the development of a national cancer registry to enable informed decisions on investments related to cancer control policies.

### 3.6 Treatment of Breast Cancer in Myanmar

Breast cancer has become the third most common female cancer in Myanmar. HER2/neu is one of the hallmarks of breast cancer, which is cell proliferation. It induces differentiation and inhibits apoptosis and is associated with worse prognosis. Targeted therapy HER2/neu; trastuzumab (Herceptin) significantly increases disease-free intervals and overall survival in both early-stage and breast cancer. Therefore, appropriate HER2/neu assessment has become important for the appropriate identification of patients eligible for treatment with HER2-targeted therapy.

A breast cancer is a heterogeneous sickness composed of many morphological and molecular entities. The heterogeneity displays exclusive medical outcomes (Polyak, 2007). By gene expression profiling, breast most cancers is classed into five intrinsic subtypes (Perou et al., 2000). For clinicopathological practice, 5 molecular subtypes, luminal A, luminal B (HER2-), luminal B (HER2+), HER2 and triple negative (TN), are well-defined based on the expression of estrogen receptor (ER), progesterone receptor (PgR), human epidermal increase issue receptor 2 (HER2), and Ki-67 (Goldhirsch et al., 2011). Triple negative (TN) was divided into two subtypes, basal-like and null (Nielsen et al., 2004). It is known that molecular subtypes are important biological markers not only for predicting prognosis but for decisions of effective treatment (Blows et al., 2010). Luminal types are cancers with a better

prognosis in assessment to non-luminal types. Luminal breast most cancers subtypes had been discovered to predominate throughout racial/ethnic groups, even as frequency of TN breast cancer progressively growths among white American, African-American, and Ghanaian/Africans (Amirikia et al., 2011).

In cancer care, doctors specializing in various areas of cancer treatment such as surgeons, radiation oncologists, medical oncologists, radiation technicians and allied health professionals serve together with radiologists and pathologists to create a patient's overall treatment plan that involves different types of treatments. This is referred to a multidisciplinary team. Cancer care teams include a change of other health care professionals, such as physician assistants, nurse practitioners, oncology nurses, social workers, pharmacists, counselors, nutritionists, and others. For people older than 65, a geriatric oncologist or geriatrician may also be involved in their care.

There are a few key treatment considerations in the management of breast cancer:

(1) The stage of the cancer (localized or metastatic)
(2) Type of breast cancer
(3) Molecular characteristics and genetics of the cancer cells
(4) Age of the patient
(5) General health of the patient

Breast cancer is widely recognized as a heterogeneous disease with many distinct subtypes requiring different treatments. For example, a patient with HER2-positive breast cancer will receive a very different treatment plan than a triple-negative breast cancer patient. Understanding the key treatment considerations for breast cancer allows doctors to tailor treatments to individual patients and their disease. Advances in treatment and post-treatment care have led to a wide range of treatment options for breast cancer, from surgery to palliative care over the past decade.

For decades, the mainstay of breast cancer treatment has been mastectomy, which removes the entire breast. Only in the last decade have patients been offered new advances in surgical techniques such as lumpectomy (also known as mastectomy or wide region surgery). A lumpectomy removes only the cancerous part of the breast and the surrounding tissue. Breast tissue is preserved as possible. As it is more precise, the surgery is less scarring with improved long-term survival rates and aesthetic outcomes. The procedure is suitable for small, localized tumors in a single

area of the breast. Radiation therapy is typically given following surgery to reduce the chance of recurrence.

Breast reconstruction surgery is typically done at the point of surgical removal of the cancer. The primary surgeon chooses alternative materials based on the patient's personal preference. He will work closely with a plastic surgeon to reconstruct the patient's breast using tissue from other parts. Neoadjuvant therapy refers to systemic therapy given before surgery to facilitate removal of the tumor. A smaller tumor is more likely to do so. It offers patients surgical options such as lumpectomy for better treatment outcomes. It also helps predict a patient's risk of relapse based on their pathologic response to therapy. This allows doctors to review and prepare a treatment plan for the patient.

Systemic treatment is useful in inhibiting the growth and reproduction of tumor cells. However, its limitation is its inability to differentiate cancer cells from healthy normal cells poison healthy organs. This is where targeted therapy comes in as an important advance in breast cancer treatment, improving treatment precision by targeting only cancer cells, thereby reducing toxicity to healthy organs. It works by targeting specific mutations that control the growth and spread of cancer cells.

Hormone therapy, for instance, targets estrogen and progesterone receptors to cut off the hormone supply stimulating the growth of the cancer. HER2 and BRCA mutations can similarly be targeted in patients with HER2-positive breast cancer and breast cancers with BRCA mutations, to offer patients improved treatment outcomes.

Immunotherapy is a form of targeted therapy that mobilizes the body's immune system to fight cancer in a similar way to vaccination. The biology and behavior of breast cancer affects the treatment plan. Some tumors are smaller but grow quickly, while others are larger and grow slowly. Treatment options and recommendations are highly individualized and depend on many factors. There are some general steps for treating early-stage and locally advanced breast cancer. For both ductal carcinoma in situ (DCIS) and early-stage invasive breast cancer; Doctors generally recommend surgery to remove the tumor. To make sure the entire tumor is removed, the surgeon removes a small amount of healthy tissue around the tumor with a margin called a margin. The goal of surgery is to remove all visible cancer in the breast, but microscopic cells may remain. In some cases, this means that further surgery may be needed to remove any remaining cancer cells. There are various methods of examining microscopic cells that ensure a clean margin. Because

microscopic cells are present outside the breast, systemic treatment with medication is often recommended after surgery.

If patients have any microscopic disease, It can be treated early with drug therapy that spreads throughout the body. Lumpectomy surgery may be necessary if the tumor has shrunk enough before surgery (Cancer.net, 2021). After surgery, The next step in managing early-stage breast cancer is to try to reduce the risk of recurrence and eliminate any remaining cancer cells in the body. These cancer cells are undetectable with current tests but are believed to be responsible for a cancer recurrence, as they can grow over time. Treatment given after surgery is called "adjuvant therapy." Adjuvant therapies include radiation therapy, chemotherapy, targeted therapy, immunotherapy, and/or hormonal therapy (see below for more information on each of these treatments). Whether adjuvant therapy is required depends on the chance that any cancer cells remain in the breast or the body and the chance that a specific treatment will work to treat the cancer. Although adjunctive therapy reduces the risk of recurrence, it does not completely eliminate the risk.

Along with staging, other tools can help estimation prognosis and help the doctor make results about adjuvant therapy. Depending on the subtype of breast cancer, this includes tests that can forecast the risk of recurrence by testing your tumor tissue (such as Oncotype Dx™ or MammaPrint™; see Diagnosis). Such tests may also help your doctor better understand whether chemotherapy will help reduce the risk of recurrence. (Cancer.net, 2021)

If surgery to remove the cancer is not possible, it is called impracticable. The doctor will then recommend treating the cancer in other ways. Chemotherapy, immunotherapy, targeted therapy, radiation therapy, and/or hormonal therapy may be given to shrink the cancer. For recurrent cancer, treatment options depend on how the cancer was first treated and the features of the cancer mentioned above, such as ER, PR, and HER2. It is also important to check with Health Insurance Company before any treatment begins to make sure the planned treatment is covered (Cancer.net, 2021).

Myanmar does not have a National screening program targeting the general population on cancers of the breast, cervix, colon and prostate. Measures have been taken for the formulation and effective implementation of the legislation on health protection from tobacco products. Efforts to raise public awareness of the harmful effects of tobacco are intensified through specific campaigns and information

dissemination. For early detection of oral cancer in communities, oral screening of tobacco users is being done through NGOs. Produce and distribute informational materials to make women aware of the benefits of early breast cancer detection. Mammograms have been installed in lower and upper Myanmar, but use is still limited. Interventions for early detection of breast cancer are being implemented to a limited extent by NGOs.

# CHAPTER IV
# SURVEY ANALYSIS

This chapter presents an analysis and discussion of the study. There are three sections in this chapter. They are survey profile, survey design, and survey results regarding breast cancer among women.

## 4.1 Survey Profile

Zambuthiri Township is located in the south of Mandalay Region. The city's official name was announced on March 27, 2006. It is 9.5 miles from east to west and 4.4 miles from south to north. Zabuthiri Township is east of Phinmana Township. West of Dakshina Sri Township, South It borders Ottarathiri Township and Popathiri Township to the north Zabuthiri Township was previously composed of 12 wards and 2 village groups in Pyimana and Leway. In Zabuthiri Township, forest conservation groups are carrying out land reclamation activities for greening, and watershed conservation is being carried out to prevent water shortages in the township lakes. According to the Nay Pyi Taw Council report (2019), 8,851 houses in the city's neighborhoods; 26332 households 1339 houses 1338 households There are 2 village groups and 4 villages in rural areas. There are 10,190 houses. 27670 households Ward 12 There are 2 village groups and 4 villages in Zabuthiri Township.

Ottarathiri Township is one of eight townships in the Union Territory located in the south of Mandalay Region, Myanmar. Ottarathiri Township was formerly Mandalay Region. On March 26, 2006, the Ministry of Home Affairs (MOHA) Nay Pyi Taw was designated as one of the original townships where the new capital was established. 7 village groups including 39 village groups from Pyimana Township and 3 village groups from Khun Gone Township were separated into Ottarathiri Township. According to the 2014 census, Ottarathiri Township has a population of 81,620. The population density is 98.2 people per 2 km. According to the census, the median age was 25.6 years, with 103 males for every 100 females. There are 18,661 households.

Breast cancer is the most common cancer in women in the world. Although breast cancer deaths have declined over time, breast cancer is the second leading cause of cancer death among women and the leading cause of cancer death among Hispanic women. Early detection of breast cancer is important because it often means that a person is more likely to choose a less aggressive treatment option while maintaining strong clinical outcomes. This survey focused mainly on women aged 20 to 50 years old in Nay Pyi Taw Zabuthri Township and Ottarathiri Township.

This survey was mainly carried out within Zabuthiri and Ottarathiri Township, Nay Pyi Taw. There were collected 200 respondents and selected and asked by questionnaire to assess the condition of knowledge and practices regarding to breast cancer among women. In this chapter, initially, respondents' personal information is interpreted to broadly understand the different characteristics of a population with 200 respondents. Among them, 142 respondents are from Zabuthiri Township and 58 respondents are from Ottarathiri Township. Additionally, all sections of this chapter cover the descriptive analysis.

## 4.2 Survey Design

Survey design is the process of creating surveys with the goal of receiving maximum insights from survey research. The survey data is collected from 200 respondents among all women in Zabuthiri and Ottarathiri Township, Nay Pyi Taw by conducting with structured questionnaires to assess the knowledge of risk factors and early warning signs of breast cancer and the practice of breast self-examination and breast cancer screening test among women. Among them, 111 respondents are selected by using online survey form and 89 respondents are selected by interview method. Online surveys are shared by e-mail. Moreover, 142 respondents are selected from Zabuthiri Township and 58 respondents are selected from Ottarathiri Township. The survey questionnaires consist of three sections. The first section focuses on the respondents' personal information and the second section is knowledge of breast cancer among women. The last section is practices regarding breast cancer among women.

## 4.3 Survey Results

Survey results include characteristics of respondents, knowledge on breast cancer among women, practices regarding breast cancer among women and relationship between knowledge and practices on breast cancer.

### 4.3.1 Characteristics of Respondents

This section consists of respondent's characteristics such as age, education, marital status; occupation, religion, township, average monthly expense, family members and family history of breast cancer are presented. Table (4.1) presents personal information of the respondents.

**Table (4.1) Personal Information of the Respondents**

| Sr. No. | Description | Classification | Frequency | Percentage % |
|---|---|---|---|---|
| 1 | **Age (Years)** | 20- 34 | 102 | 51.0 |
| | | 35-44 | 56 | 28.0 |
| | | 45-54 | 38 | 19.0 |
| | | 55-64 | 4 | 2.0 |
| | | **Total** | **200** | **100.0** |
| 2 | **Education** | High School | 35 | 17.5 |
| | | College | 32 | 16.0 |
| | | Graduation | 105 | 52.5 |
| | | Post-graduate | 28 | 14.0 |
| | | **Total** | **200** | **100.0** |
| 3 | **Marital Status** | Married | 71 | 35.5 |
| | | Single | 121 | 60.5 |
| | | Widowed/ divorced | 8 | 4.0 |
| | | **Total** | **200** | **100.0** |
| 4 | **Occupation** | Student | 11 | 5.5 |
| | | Government Employees | 72 | 36.0 |
| | | Private Employees | 59 | 29.5 |
| | | Dependent | 58 | 29.0 |
| | | **Total** | **200** | **100.0** |

**Table (4.1) Personal Information of the Respondents (Continued)**

| Sr. No. | Description | Classification | Frequency | Percentage % |
|---|---|---|---|---|
| 5 | **Religion** | Buddhist | 180 | 90.0 |
| | | Christian | 13 | 6.5 |
| | | Muslim | 7 | 3.5 |
| | | **Total** | **200** | **100.0** |
| 6 | **Township** | Zabuthiri Township | 142 | 71.0 |
| | | Ottarathiri Township | 58 | 29.0 |
| | | **Total** | **200** | **100.0** |
| 7 | **Average Monthly Income** | No income | 11 | 5.5 |
| | | Low (<200000 MMK) | 4 | 2.0 |
| | | Between 200000MMK and 500000 MMK | 89 | 44.5 |
| | | Between 500000 MMK and 100000 MMK | 49 | 24.5 |
| | | Upper ( 1000000 MMK and above) | 47 | 23.5 |
| | | **Total** | **200** | **100.0** |
| 8 | **Family Members** | Less than 3 people | 33 | 16.5 |
| | | 3 People | 53 | 26.5 |
| | | 4 People | 75 | 37.5 |
| | | More than 4 People | 39 | 19.5 |
| | | **Total** | **200** | **100.0** |
| 9 | **Family History of Breast Cancer** | Yes | 32 | 16.0 |
| | | No | 168 | 84.0 |
| | | **Total** | **200** | **100.0** |

Source: Survey Data, (2022)

Table (4.1) summarizes the profile of the respondents in Zabuthiri and Ottarathiri townships for this study. The survey respondents were categorized into four age group: between 20 to 34 years old, between 35-44 years old, between 45 to 54 years old and between 55 to 64 years old. The largest number of respondents from

both townships came from between 20 to 34 years old. The second largest number of age group is between 35-44 years old.

As for educational attainment, the largest group in the study areas was composed of graduation, while the second largest group was the high school graduates. Only a few people completed post-graduate. Out of total participants, most of respondents were single and the second largest group was married. The least group was windowed/ divorced. In terms of occupation, 36% of the respondents were government employees, after that private employees, dependent, and student follows respectively. The largest group was government employees and the second largest group was private employees.

Most of the respondents were Buddhist, which is 90 % and followed by Christian (13%) and Muslim (3.5%) respectively. Most of respondents live in Zabuthiri Township which is 71 % of the respondents and the rest respondents live in Ottarathiri Township which is 29% of the respondents. The survey respondents were categorized into five income groups such as no income, low (<200000 MMK), between 200000 MMK and 500000 MMK, between 500000 MMK and 100000 MMK, and upper (1000000 MMK and above). Among them, most of people earn between 200000 MMK and 500000 MMK. A few people earn less than 200000 MMK.

Most of respondents had 3 family members which are 26.5% of respondents but the least group of respondents had less than 3 family members. Most of respondents answered that they have no family history of breast cancer with 84.0% of respondents. However, 16.0% of respondents answered that they have family history of breast cancer.

### 4.3.2 Knowledge on Breast Cancer among Women

Knowledge on breast cancer among women is stated by general knowledge on breast cancer, early warning signs and risk factors.

#### A. General Knowledge on Breast Cancer

General knowledge on breast cancer are stated by types of cancers, sources of information, being knowledge about breast self-examination, ways to test for breast cancer and knowledge by clinical breast examination.

**Table (4.2) General Knowledge on Breast Cancer**

| Sr. No. | Variables | N (n=200) | % |
|---|---|---|---|
| **1.** | **Most prevalent cancer among women is** | | |
| | Breast cancer | 106 | 53.0 |
| | Cervical cancer | 41 | 20.5 |
| | Uterine cancer | 50 | 25.0 |
| | Do not know | 3 | 1.5 |
| | | | |
| **2.** | **Sources of Information obtained from** | | |
| | Television and radio | 34 | 17.0 |
| | Internet | 83 | 41.5 |
| | Journals and newspapers | 33 | 16.5 |
| | Social Media | 26 | 13.0 |
| | Medical Staff | 18 | 9.0 |
| | Other | 6 | 3.0 |
| | | | |
| **3.** | **Knowledge of Breast Self-Examination** | | |
| | Yes | 105 | 52.5 |
| | No | 95 | 47.5 |
| | | | |
| **4.** | **Ways to test for breast cancer** | | |
| | Breast self-examination | 62 | 31.0 |
| | Mammogram | 34 | 17.0 |
| | Ultrasound | 14 | 7.0 |
| | CT or MRI | 2 | 1.0 |
| | All of the above | 88 | 44.0 |
| | | | |
| **5.** | **Difficulties of Clinical Breast Examination** | | |
| | Costing money | 80 | 40.0 |
| | Taking time and tiring | 51 | 25.5 |
| | Avoiding False test result | 69 | 34.5 |

Source: Survey Data, (2022)

According to table (4.2), situation of knowledge on cancers are classified into 4 types. Among them, breast cancer is known 53% of respondents. It can be assumed

that over half of respondents know the breast cancer. Sources of information are categorized into 6 groups. Most of respondents get information concerning with breast cancer from internet which is 41% of respondents. Knowledge about Breast Self-Examination is known 52.5% of respondents. It can be concluded that over half of respondents have knowledge about breast self-examination. Ways to test for breast cancer are presented by 5 groups. Among them, 44.0% of respondents test for breast cancer by all ways (Breast self-examination, Mammogram, Ultrasound, CT or MRI). Knowledge by clinical breast examination is classified into 3 groups. Moreover, costing money is the main factors in clinical breast examination which is 40% of respondents.

**B. Early Detection for Early Warning Signs of Breast Cancer**

Early detection for early warning signs of breast cancer are presented by general perception about breast cancer, age for breast self-examination, experiment for breast self-examination, ways of breast self-examination, types of breast exam, frequency performed breast self-examination and times for breast self-examination.

**Table (4.3) Characteristics of Early Detection for Early Warning Signs of Breast Cancer**

| Sr. No. | Variables | N (n=200) | % |
|---|---|---|---|
| **1.** | **General Perception about Breast Cancer** | | |
| | Breast cancer is an incurable disease. | 30 | 15.0 |
| | Breast cancer is contagious / communicable / infectious | 22 | 11.0 |
| | Breast cancer is usually inherited. | 148 | 74.0 |
| | | | |
| **2.** | **Age for Breast Self-Examination** | | |
| | Should begin at age 10 | 53 | 26.5 |
| | Should begin at age 20 | 100 | 50.0 |
| | Should begin at age 30 | 47 | 23.5 |
| | | | |
| **3.** | **Experiment for Breast Self-Examination** | | |
| | Only breast examination is sufficient | 36 | 18.0 |
| | Chest, breasts and armpits need to be checked | 155 | 77.5 |
| | Don’t Know | 9 | 4.5 |

**Table (4.3) Characteristics of Early Detection for Early Warning Signs of Breast Cancer (Continued)**

| Sr. No. | Variables | N (n=200) | % |
|---|---|---|---|
| **4.** | **Ways of Breast Self-Examination** | | |
| | Should be tested undress | 115 | 57.5 |
| | Can also test wearing clothes | 72 | 36.0 |
| | There was no difference in the test whether clothed or unclothed. | 13 | 6.5 |
| | | | |
| **5.** | **Types of Breast Exam** | | |
| | Breast self-examination | 80 | 40.0 |
| | Clinical breast examination | 120 | 60.0 |
| | | | |
| **6.** | **Frequency Performed Breast Self-Examination** | | |
| | Daily | 21 | 10.5 |
| | Weekly | 87 | 43.5 |
| | Monthly | 92 | 46.0 |
| | | | |
| **7.** | **Times for Breast Self-Examination** | | |
| | The week after your period ends. | 23 | 11.5 |
| | During period | 76 | 38.0 |
| | Anytime | 101 | 50.5 |

Source: Survey Data, (2022)

According to Table (4.3), general perception about breast cancer is categorized by three groups. The right statement that breast cancer is an incurable disease is answered by 15% of respondents. It can be assumed that most of respondents have less knowledge for general perception about breast cancer. Age for breast self-examination is classified into three groups. The right group is answered by 50% of respondents. A half of respondents know the age that should begin for breast self-examination. Experiment for breast self-examination is presented by three statements. The statement that chest, breasts and armpits need to be checked is answered 77.5% of respondents. Therefore, over half of respondents know about experiment for breast self-examination.

Ways of breast self-examination are classified into three groups. Among them, 57.5% of respondents answered that breast self-examination should be tested undress.

Types of breast exam are stated by two ways. Most of respondents use the clinical breast examination which is 60% of respondents. Frequency performed breast self-examination is classified into three groups. Most of respondents perform breast self-examination monthly which is 46%. Mostly know frequency performed breast self-examination. Times for breast self-examination are categorized into three groups. Some respondents perform breast self-examination in the week after the period ends which is 11.5% of respondents. It can be supposed that people in the study area are poor the times for breast self-examination.

**(C) Risk Factors for Breast Cancer**

Risk factors for breast cancer are shown in Table (4.4).

**Table (4.4) Risk Factors for Breast Cancer**

| Sr. No. | Statements | Yes | |
|---|---|---|---|
| | | No. | % |
| **1** | Family history on breast cancer increases the risk of breast cancer. | 74 | 37.0 |
| **2** | Being overweight increases the risk of breast cancer. | 122 | 61.0 |
| **3** | Increasing the risk of breast cancer by frequent consumption of alcohol (alcohol intake). | 41 | 20.5 |
| **4** | Using oral contraceptives increases the risk of breast cancer. | 52 | 26.0 |
| **5** | Increasing women who have never lactated by risk factor of breast cancer | 83 | 41.5 |
| **6** | Only female are affected by breast cancer. | 88 | 44.0 |
| **7** | Smoking can increase the risk for breast cancers. | 63 | 31.5 |
| **8** | Women who are not physically active throughout life can be higher risk of breast cancer. | 143 | 71.5 |

Source: Survey Data, (2022)

According to Table (4.4), respondents answered that family history on breast cancer increases the risk of breast cancer which is 37.0% of respondents. Similarly, 61.0% of respondents answer that being overweight increases the risk of breast

cancer. Respondents answered that frequent consumption of alcohol (alcohol intake) increases the risk of breast cancer which is 20.5% of respondents. Then, respondents consider that using oral contraceptives increases the risk of breast cancer which is 26.0% of respondents.

Also, respondents answered women who have never lactated increase risk factor of breast cancer which is 41.5% of respondents. 44.0% of respondents think that only female are affected by breast cancer. Some respondents answered that smoking can increase the risk for breast cancers, which is 31.5% of respondents. Respondents answered that women who are not physically active throughout life can be higher risk of breast cancer, which is 71.5% of respondents.

### 4.3.3 Practices Regarding Breast Cancer

Practices regarding breast cancer are presented by general knowledge on breast cancer, and risk factors of breast cancer.

**A. General Knowledge on Breast Cancer**

General knowledge on breast cancer is stated by performing breast self-examination currently, age for breast self-examination, frequency performed breast self-examination, appropriate times for breast self-examination, kinds for breast self-examination, and knowing about breast cancer diagnosis.

**Table (4.5) General Knowledge on Breast Cancer**

| Sr. No. | Variables | N (n=200) | % |
|---|---|---|---|
| **1.** | **Performing breast self-examination currently** | | |
| | **Yes** | 95 | 47.5 |
| | **No** | 105 | 52.5 |
| | | | |
| **2.** | **Age for Breast Self-Examination** | | |
| | Begin at age 10 | 20 | 10.0 |
| | Begin at age 20 | 122 | 61.0 |
| | Begin at age 30 | 58 | 29.0 |
| | | | |
| **3.** | **Frequency performed breast self-examination** | | |
| | Daily | 20 | 10.0 |
| | Weekly | 92 | 46.0 |

| | | | |
|---|---|---|---|
| | Monthly | 88 | 44.0 |

**Table (4.5) General Knowledge on Breast Cancer (Continued)**

| Sr. No. | Variables | N (n=200) | % |
|---|---|---|---|
| **4.** | **Appropriate Times for Breast Self-Examination** | | |
| | The week after your period ends | 20 | 10.0 |
| | During period | 70 | 35.0 |
| | Anytime | 110 | 55.0 |
| | | | |
| **5.** | **Kinds for Breast Self-Examination** | | |
| | Only the breast is checked | 35 | 17.5 |
| | Chest , breast and armpit are checked | 147 | 73.5 |
| | Don't take any action | 18 | 9.0 |
| | | | |
| **6.** | **Knowing about Breast Cancer Diagnosis** | | |
| | Early detection through regular breast self-examination | 29 | 14.5 |
| | It was known when obvious symptoms appeared | 73 | 36.5 |
| | No one has cancer | 98 | 49.0 |

Source: Survey Data, (2022)

According to Table (4.5), nearly half of respondents perform breast self-examination currently, which is 47.5% of respondents. Most of respondents answered that breast self-examination begins at age 20, which is 61% of respondents. Although breast self-examination should perform monthly, most of respondents perform breast self-examination weekly which is 46.0% of respondents. Appropriate times for breast self-examination are the week after the period ends, but most of respondents perform anytime which is 55% of respondents. Most of respondents answered that chest; breast and armpit are checked for breast self-examination which is 73.5% of respondents. Most of respondents have no breast cancer diagnosis, which is 49.0% of respondents.

**B. Practices on Risk Factors of Breast Cancer**

Practices on risk factors of breast cancer are shown in Table (4.6).

**Table (4.6) Conditions of Practices for Breast Cancer**

| Sr. No. | Statements | Yes | |
|---|---|---|---|
| | | No. | % |
| 1 | High-fat foods are avoided to prevent breast cancer. | 113 | 56.5 |
| 2 | Consumption of alcohol (alcohol intake) is avoided to prevent breast cancer. | 111 | 55.5 |
| 3 | Taking contraceptive are currently performed in long-term. | 83 | 41.5 |
| 4 | Women lactated due to risk factor of breast cancer. | 63 | 31.5 |
| 5 | Smoking increases the risk of breast cancer. | 73 | 36.5 |
| 6 | Being physically active throughout life is less risk of breast cancer. | 95 | 47.5 |

Source: Survey Data, (2022)

Most of respondents answered that high-fat foods are avoided to prevent breast cancer, which is 56.5% of respondents. 55.5% of respondents answered that they are avoided consumption of alcohol (alcohol intake) to prevent breast cancer. The respondents answered that they are currently performed taking contraceptive in long-term, which is 41.5% of respondents. The respondents answered that they make being physically active throughout life to prevent breast cancer. Respondents lactated due to risk factor of breast cancer, which is 31.5% of respondents. Majority answered that they avoid Smoking for the risk of breast cancer which is 36.5% of respondents. Nearly half of respondents answered that being physically active throughout life is less risk of breast cancer, which is 47.5% of respondents.

### 4.3.4 Relationship between Knowledge and Practices on Breast Cancer

This study was conducted specifically to look into the significant relationship between the knowledge and practices in breast cancer among women who live in Zabuthiri and Ottarathiri Townships. Data were gathered, analyzed and interpreted using percentage distribution.

**A. Breast Cancer of General Knowledge and Practices**

Breast cancer of general knowledge and practices is presented by frequency performed breast self-examination, appropriate times for breast self-examination, age for breast self-examination and experiment for breast self-examination.

**Table (4.7) Breast Cancer of General Knowledge and Practices**

| Sr. No. | Variables | Knowledge (%) | Practices (%) |
|---|---|---|---|
| **1.** | **Frequency performed breast self-examination** | | |
| | Daily | 10.5 | 10.0 |
| | Weekly | 43.5 | 46.0 |
| | Monthly | 46.0 | 44.0 |
| | | | |
| **2.** | **Appropriate Times for Breast Self-Examination** | | |
| | The week after your period ends | 11.5 | 10.0 |
| | During period | 38.0 | 35.0 |
| | Anytime | 50.5 | 55.0 |
| | | | |
| **3.** | **Age for Breast Self-Examination** | | |
| | Begin at age 10 | 26.5 | 10.0 |
| | Begin at age 20 | 50.0 | 61.0 |
| | Begin at age 30 | 23.5 | 29.0 |
| | | | |
| **4.** | **Experiment for Breast Self-Examination** | | |
| | Only breast examination is sufficient | 18.0 | 17.5 |
| | Chest, breasts and armpits need to be checked | 77.5 | 73.5 |
| | Don’t take any action | 4.5 | 9.0 |

Source: Survey Data, (2022)

For frequency performed breast self-examination, 46.0% of respondents have the knowledge for performing breast self-examination monthly, but, 44.0% 0f respondents practice breast self-examination monthly. It can be assumed that the percentage of respondents for knowledge about breast self-examination is higher than the percentage of respondents for practices.

Appropriate times for breast self-examination are the week after the period ends, which is 11.5% of respondents. Among them, 10.0% of respondents practice Breast Self-Examination at the week after the period ends. Thus, the percentage of respondents for knowledge about breast self-examination is higher than the percentage of respondents for practices. Most of people make practices for breast self-examination at appropriate times.

Although the knowledge that breast self-examination should be begun at age 20 has 50.0% of respondents, 61% of respondents practice it. Most of respondents know breast self-examination at other ages but the real practice makes at age 20.

The knowledge that chest, breasts and armpits need to be checked has 77.5 % of respondents. Among them, 73.5% of respondents check chest, breasts and armpits. It can be assumed that the percentage of respondents for knowledge about experiment for breast self-examination is higher than the percentage of respondents for practices.

**B. Knowledge and Practices for Risk Factors of Breast Cancer**

The relationship between knowledge and practices for risk factors of breast cancer is shown in Table (4.8).

**Table (4.8) Knowledge and Practices for Risk Factors of Breast Cancer**

| Sr. No. | Items | Knowledge (%) | Practices (%) |
|---|---|---|---|
| 1. | High-fat foods are avoided to prevent breast cancer. | 61.0 | 56.5 |
| 2. | Consumption of alcohol (alcohol intake) is avoided to prevent breast cancer. | 20.5 | 55.5 |
| 3. | Taking contraceptive are currently performed. | 26.0 | 41.5 |
| 4. | Women lactated due to risk factor of breast cancer. | 41.5 | 31.5 |
| 5. | Smoking increases the risk of breast cancer. | 31.5 | 36.5 |
| 6. | Being physically active throughout life is less risk of breast cancer. | 71.5 | 47.5 |

Source: Survey Data, (2022)

The knowledge that high-fat foods are avoided to prevent breast cancer is accepted by 61.0% of respondents. 56.5% of respondents avoid high-fat foods to prevent breast cancer. The percentage of respondents who have knowledge about high-fat foods is higher than the percentage of respondents for practices.

The knowledge that consumption of alcohol (alcohol intake) is avoided to prevent breast cancer is accepted by 20.5% of respondents. 55.5% of respondents avoid consumption of alcohol to prevent breast cancer. The percentage of respondents who have knowledge about consumption of alcohol is lesser than the percentage of respondents for practices because most of respondents in Myanmar do not drink alcohol according to tradition.

The knowledge that taking contraceptive should be performed in long-term is accepted by 26.0% of respondents. 41.5% of respondents perform taking contraceptive currently. The percentage of respondents who have knowledge about taking contraceptive is lesser than the percentage of respondents for practices.

The knowledge that women should be lactated due to breast cancer is accepted by 41.5% of respondents. Among them, 31.5% of respondents lactated due to risk factor of breast cancer. The percentage of respondents who have knowledge about lactating is higher than the percentage of respondents for practices.

The knowledge that smoking increases the risk of breast cancer is accepted by 31.5% of respondents. 36.5% of respondents avoid smoking to increase the risk of breast cancer. The percentage of respondents who have knowledge about smoking is lesser than the percentage of respondents for practices.

The knowledge that being physically active throughout life is less risk of breast cancer is accepted by 71.5% of respondents. 47.5% of respondents do physically active. The percentage of respondents who have knowledge about physically active is greater than the percentage of respondents for practices.

Most of respondents have knowledge about breast cancer. However, they are poor in practices. As the results, breast cancer is not known in the early stages, it is known only in the late stages, so the treatment is delayed and there is a possibility of loss of life.

# CHAPTER V
# CONCLUSION

## 5.1 Findings

The first objective of this study is to evaluate the knowledge of risk factors and early warning signs of breast cancer. The second objective is to examine the practice of breast self-examination and breast cancer screening test among women.

This study only focuses on female who have age from 20 to above 50 years within Zabuthiri and Ottarathiri Township, Nay Pyi Taw. The survey data is collected from 200 respondents among all women in Zabuthiri and Ottarathiri Township, Nay Pyi Taw by conducting with structured questionnaires to assess the knowledge of risk factors and early warning signs of breast cancer and the practice of breast self-examination and breast cancer screening test among women. In order to carry out the objectives, both secondary and primary data were used in this study. This study limits to assess the knowledge and practices regarding to breast cancer among women in Zabuthiri and Ottarathiri Township only.

It is found that the largest number of respondents is between 20 to 34 years old. Most of people are graduated. Out of total participants, most of respondents are single. Mostly are government employees. Mostly is Buddhist. Over half of respondents live in Zabuthiri Township. Most of people earn between 200000 MMK and 500000 MMK in this study. Most of respondents have 3 family members and they have no family history of breast cancer.

Knowledge on breast cancer among women is stated by general knowledge on breast cancer, early warning signs and risk factors. In general knowledge on breast cancer, it is found that breast cancer is known 53% of respondents. Most of respondents get information concerning with breast cancer from internet. Over half of respondents have knowledge about breast self-examination. 44.0% of respondents test for breast cancer by all ways (Breast self-examination, Mammogram, Ultrasound, CT or MRI). Costing money is the main difficult factor in clinical breast examination for respondents.

In early detection for early warning signs of breast cancer, the right statement that breast cancer is an incurable disease is answered by 15% of respondents. A half of respondents know the age that should begin for breast self-examination. The statement that chest, breasts and armpits need to be checked is answered 77.5% of respondents. Over half of respondents answered that breast self-examination should be tested undress. Most of respondents use the clinical breast examination. Mostly know frequency performed breast self-examination. Most of respondents perform breast self-examination in the week after the period ends which is 11.5% of respondents.

In risk factors for breast cancer, that family history on breast cancer increases the risk of breast cancer which is 37.0% of respondents. Similarly, 61.0% of respondents answer that being overweight increases the risk of breast cancer. Respondents answered that frequent consumption of alcohol (alcohol intake) increases the risk of breast cancer which is 20.5% of respondents. Then, respondents consider that using oral contraceptives increases the risk of breast cancer which is 26.0% of respondents. Also, respondents answered women who have never lactated increase risk factor of breast cancer which is 41.5% of respondents. 44.0% of respondents think that only female are affected by breast cancer. Some respondents answered that smoking can increase the risk for breast cancers, which is 31.5% of respondents. Over half of respondents answered that women who are not physically active throughout life can be higher risk of breast cancer.

Practices regarding breast cancer are presented by general knowledge on breast cancer, and risk factors of breast cancer. In general knowledge on breast cancer, nearly half of respondents perform breast self-examination currently, which is 47.5% of respondents. Over half of respondents answered that breast self-examination begins at age 20. Although breast self-examination should perform monthly, most of respondents perform breast self-examination weekly which is 46.0% of respondents. Appropriate times for breast self-examination are the week after the period ends, but half of respondents perform anytime. Most of respondents answered that chest; breast and armpit are checked for breast self-examination which is 73.5% of respondents. Most of respondents answered that they see no reason for the test which is 42% of respondents. Mostly see doctors for breast examination and nearly half of respondents have no breast cancer diagnosis.

Most of respondents answered that high-fat foods are avoided to prevent breast cancer and they avoid consumption of alcohol (alcohol intake) to prevent breast

cancer. The respondents answered that they are currently performed taking contraceptive in long-term, which is 41.5% of respondents. The respondents answered that they make being physically active throughout life to prevent breast cancer. Respondents lactated due to risk factor of breast cancer, and majority avoids smoking for the risk of breast cancer. Nearly half of respondents answered that being physically active throughout life is less risk of breast cancer.

## 5.2 Suggestions

Based on the findings from the previous sections, some relevant suggestions and recommendations are provided to be good knowledge and practices regarding Breast Cancer among Women in Myanmar.

According to the conditions of knowledge of breast cancer among women, majority of the respondents get the knowledge of breast cancer information from internet. Therefore, knowledge campaigns and seminars should held and knowledge for health should be expanded on Facebook, Twitter, Instagram, YouTube, Website etc… to enhance knowledge of people. Most of people earn between 200000 MMK and 500000 MMK in this study. Therefore, hospitals, clinics should set price that afford for those people. Although over half of respondents have knowledge about breast self-examination, should give knowledge about it. Thus, breast self-examination should be demonstrated and the knowledge should be shared among the women. Breast Cancer knowledge should be emphasized among males and females in the community to reduce morbidity and mortality of breast cancer.

Knowledge program of breast cancer and breast self-examination should be given to the public widely. Breast Cancer Awareness Month is October. People, authorities and medical staffs should support for loved breast cancer patients and should give encourage them for a brighter future. Moreover, they should motivate the women in the organization by celebrating Breast Cancer Awareness Month with them. There should create a social media campaign and its breast cancer awareness efforts in the work place. To inspire the women in office to prioritize their health and can host women-only yoga classes, workout sessions, webinars, and more. The extent to which potential breast cancer awareness activities and events can be undertaken in the workplace should depend on the individual position and sometimes the size of the company/department.

Moreover, doctors and nurses in Ministry of Health, all hospitals and clinics, should share knowledge and should teach the techniques to test. Health Education about Breast Cancer knowledge should be explained to the public to prevent cancer. Cancer prevention organizations should do sharing about breast cancer to the people. Billboards and posters concerning with breast cancer awareness should also be posted in hospitals and clinics. Although most of respondents have knowledge about breast cancer, they do not perform actually. So, people from medical field should encourage the public to make breast self-examination. Physical activity throughout life is less risk of breast cancer; therefore, physical activities should be done regularly.

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# APPENDIX

## A Study on Knowledge and Practices Regarding To Breast Cancer among Women in Myanmar (Case Study in Zabuthiri and Ottarathiri Township at Nay Pyi Taw)

### Survey Questionnaire Form

As a requirement for the EMPA degree, thesis must be compiled, so I am writing this research paper, I would like to request you to fill out the survey questionnaires and collect the necessary information for the research from you . The information obtained from this survey will be used only for education and research and will not be used for any other purpose and will be kept confidential. Thank you for taking part in this survey.

### Section (A) Personal Information

Please tick (√) one appropriate answer for each of the following questions. Each question should only have ONE answer.

1. Age group (years)

- ○ 20- 34
- ○ 35-44
- ○ 45-54
- ○ 55-64

2. Educational status

- ○ High School
- ○ College
- ○ Graduation
- ○ Post-graduate

3. Marital Status

- ○ Married
- ○ Single
- ○ Widowed/ divorced

4. Occupation

- ○ Student
- ○ Government Employees
- ○ Private Employees
- ○ Dependent

5. Religion

- ○ Buddhist
- ○ Christian
- ○ Muslim

6. Township

- ○ Zabuthiri Township
- ○ Ottarathiri Township

7. Average monthly income

- ○ No income
- ○ Low (<200000 MMK)
- ○ Between 200000 MMK and 500000 MMK
- ○ Between 500000 MMK and 100000 MMK
- ○ Upper ( 1000000 MMK and above)

8. Family members

- ○ Less than 3
- ○ 3
- ○ 4
- ○ More than 4

9. Family History of Breast Cancer

- ○ Yes
- ○ No

## Section (B) Knowledge on Breast Cancer among Women

1. What is the most prevalent cancer among women?

- ○ Breast cancer
- ○ Cervical cancer
- ○ Uterine cancer
- ○ Do not know

2. What do you obtain the main source of information from?

- ○ Television and radio
- ○ Internet
- ○ Journals and newspapers
- ○ Social Media
- ○ Medical Staff
- ○ Other

3. Do you know Breast Self-Examination?

- ○ Yes
- ○ No

4. What is the way to test for breast cancer?

- ○ Breast self-examination
- ○ Mammogram
- ○ Ultrasound
- ○ CT or MRI
- ○ All of the above

5. What is the main difficult item of clinical breast examination?

- ○ Costing money
- ○ Taking time and tiring
- ○ Avoiding False test result

6. What is the general perception about breast cancer?

- ○ Breast cancer is an incurable disease. (Cannot be cured)
- ○ Breast cancer is contagious / communicable / infectious
- ○ Breast cancer is usually inherited.

7. At what age should breast self-examination begin?

- ○ Should begin at age 10
- ○ Should begin at age 20
- ○ Should begin at age 30

8. How do you test for breast self-examination?

- ○ Only breast examination is sufficient
- ○ Chest, breasts and armpits need to be checked
- ○ Don’t Know

9. How do you do breast self-examination?

- ○ Should be tested undressed
- ○ Can also test wearing clothes
- ○ There was no difference in the test whether clothed or unclothed

10. If you were to have a breast exam, how would you prefer it to be done?

- ○ Breast self-examination
- ○ Clinical breast examination

11. At what frequency should BSE be performed?

- ○ Daily
- ○ Weekly
- ○ Monthly

12. When is the appropriate time to start Breast Self-Examination?

- ○ The week after your period ends.
- ○ During period
- ○ Anytime

13. Does family history on breast cancer increase the risk of breast cancer?

- ○ Yes
- ○ No
- ○ Don’t Know

14. Can overweight increase the risk of breast cancer?

- ○ Yes
- ○ No
- ○ Don’t Know

15. Can the frequent consumption of alcohol (alcohol intake) increase the risk of breast cancer?

- ○ Yes
- ○ No
- ○ Don’t Know

16. Can using oral contraceptives increase the risk of breast cancer?

- ○ Yes
- ○ No
- ○ Don’t Know

17. Can women who have never lactated increase risk factor of breast cancer?

- ○ Yes
- ○ No
- ○ Don't Know

18. Are only female affected by breast cancer?

- ○ Yes
- ○ No
- ○ Don't know

19. Can smoking increase the risk for breast cancers?

- ○ Yes
- ○ No
- ○ Don't know

20. Can women who are not physically active throughout life be higher risk of breast cancer?

- ○ Yes
- ○ No
- ○ Don't know

## Section (C) Practices Regarding Breast Cancer

1. Do you perform Breast Self-Examination currently?

- ○ Yes
- ○ No

2. At what age did you start doing breast self-exams?

- ○ begin at age 10
- ○ begin at age 20
- ○ begin at age 30

3. At what frequency do you perform Breast Self-Examination?

- ○ Daily
- ○ Weekly
- ○ Monthly

4. When do you do breast self-examination?

- ○ The week after your period ends.
- ○ During period
- ○ Anytime

5. When doing a breast self-examination

- ○ Only the breast is checked
- ○ Chest , breast and armpit are checked
- ○ Don’t take any action

6. If someone was breast cancer in your family, how did you know?

- ○ Early detection through regular breast self-examination
- ○ It was known when obvious symptoms appeared
- ○ No one has cancer

7. Do you avoid high-fat foods to prevent breast cancer?

- ○ Yes
- ○ No
- ○ Don’t Know

8. Do you avoid consumption of alcohol (alcohol intake) to prevent breast cancer?

- ○ Yes
- ○ No
- ○ Don’t Know

9. Are you currently taking contraceptive in long-term?

- ○ Yes
- ○ No
- ○ Don’t Know

10. Can women who have never lactated increase risk factor of breast cancer?

- ○ Yes
- ○ No
- ○ Don’t Know

11. Can smoking increase the risk for breast cancers?

- ○ Yes
- ○ No
- ○ Don’t know

12. Can women who are not physically active throughout life be higher risk of breast cancer?

- ○ Yes
- ○ No
- ○ Don’t know

(Thanks for your answers)