

Health Awareness for Breast Cancer

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Abstract

Breast cancer continues to be a global public health issue, and it is now the most frequent tumour on the planet. Breast cancer awareness, public awareness, and advancements in breast imaging have all helped to improve breast cancer detection and screening. Breast cancer is a life-threatening disease that affects women and is the main cause of death among them. Over the past 20 years, research on breast cancer has greatly advanced our understanding of the condition and produced more efficient treatments. Breast cancer is one of the main causes of death in postmenopausal women, accounting for 23 percent of all cancer fatalities. It is now a worldwide problem, but it is still detected in its advanced stages due to women's lack of self-inspection and clinical evaluation of the breast. The reasons/causes, as well as the indications and symptoms of breast cancer, are discussed in this review article. Information on breast cancer awareness.

Keywords: Breast cancer; Lymph; Carcinoma; Awareness

Introduction

Breast cancer is the most frequent cancer in women around the world, accounting for over a quarter (23%) of all malignancies in women. By 2030, the worldwide burden of breast cancer is predicted to reach 2 million, with developing nations accounting for a growing share. Although India's age-standardised incidence rates are lower than the UK's (25.8 vs. 95 per 100,000, respectively), fatality rates are nearly as high (12.7 against 17.1 per 100,000, respectively). Breast cancer incidence rates in India vary by 3–4 times across the country, with the greatest rates found in the Northeast and big metropolises like Mumbai and New Delhi. Differences in demographic (e.g., education), reproductive (e.g., age at first child and number of children), anthropometric (e.g., adiposity), and lifestyle factors all contribute to this diversity (e.g., tobacco smoking and alcohol)

Breast cancer is the most frequent cancer in women worldwide, and it is also the leading cause of cancer-related death in women. In 2008, 1.38 million new cases of breast cancer were diagnosed, with developing nations accounting for about half of all breast cancer patients and roughly 60% of deaths. Breast cancer survival rates vary dramatically over the world, with estimates ranging from 80% in industrialised countries to less than 40% in developing ones. The goal of improving breast cancer outcomes via early detection, diagnosis, and management is difficult to achieve in developing nations due to resource and infrastructure restrictions^[1].

Literature Review

Anatomy of breast

Breasts are found on both males and females. Adipose tissue, a type of fatty tissue, makes up the breast. Compared to male breasts, female breasts frequently contain more glandular tissue. Female breasts are divided into 12–20 lobes, each of which is further divided into smaller lobules. Milk ducts link these lobes and lobules together. A network of nerves, blood vessels, lymph vessels, lymph nodes, and fibrous connective tissue and ligaments supply the breast adipose tissue, which is likewise made up of fibrous connective tissue and ligaments. The female breast is meant to offer optimal nutrition for new borns while

also providing sexual pleasure to the female. The breasts are glandular organs that are extremely sensitive to changes in the body's hormonal balance. They alter in a cyclic pattern that corresponds to the menstrual cycle. They are intimately linked to the female vaginal system. The pituitary gland secretes more prolactin when the nipple is stimulated. The uterus is also affected by this hormone, which can produce contractions. The armpits contain a lymph node that drains the breast tissues. After a woman has a baby and her milk begins to flow, she may experience significant swelling beneath her arms due to engorgement of the breast tissue in that area. Breasts and nipples occur in a variety of sizes and forms. The majority of women have one breast that is slightly smaller than the other. The areola and nipple epidermis is heavily pigmented and wrinkled, and the nipple skin contains many apocrine and sebaceous sweat glands as well as some tiny hair. The 15–25 milk ducts enter the nipple's base, where they grow to create the milk sinuses. These milk ducts are responsible for transporting milk to the nipples. These sinuses finish in cone-shaped ampullae just beneath the surface of the nipple. The spherical areola is found around the nipple and has a diameter of 15 mm to 60 mm. Montgomery's glands, which are large modified sebaceous glands with microscopic milk ducts that open into Morgagni's tubercles in the areola epidermis, have sebaceous glands, sweat glands, and lanugo hairs on its skin. Several smooth muscle fibres are arranged circularly and radially in the dense connective tissue deep in the nipple and areola, as well as longitudinally alongside the lactiferous ducts that stretch up into the nipple. These muscle fibres are responsible for milk sinus emptying, nipple erection, and areola contraction. The breast parenchyma expands inferiorly from the point of the 2nd or 3rd rib to the inframammary fold, which is about the 6th or 7th rib, and across from the sternum's border to the anterior axillary line. As the glandular tail of Spence, mammary tissue develops irregularly

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into the axilla. The fasciae of the pectoralis major, rectus abdominis, external abdominal oblique, and serratus anterior support the breast's posterior aspect (Figure 1)^[2].

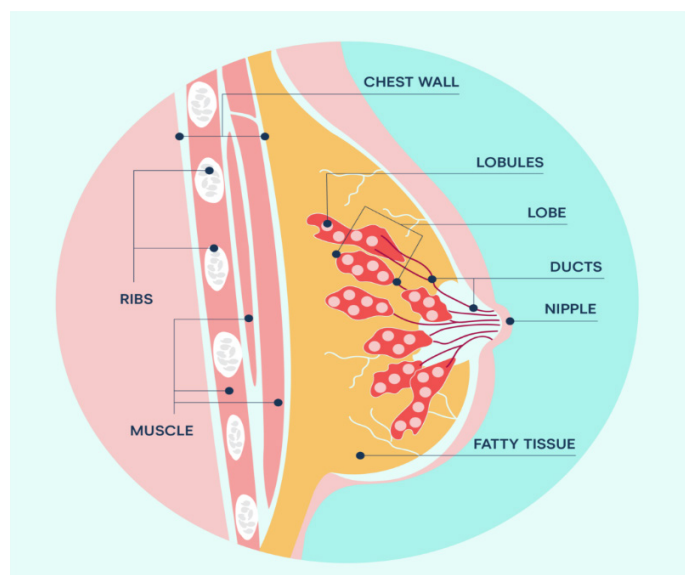


Figure 1. Anatomy of breast.

- Genetic component is a cause of breast cancer.
- Hormonal components
- Lifestyle and dietary considerations
- Environmental impact
- Symptoms and signs

The most common sign of breast cancer is a lump in the breast or armpit. A great way to get to know your breasts' texture, cyclical changes, size, and skin condition is to perform a Breast Self-Examination (BSE) once a month (Figure 2).

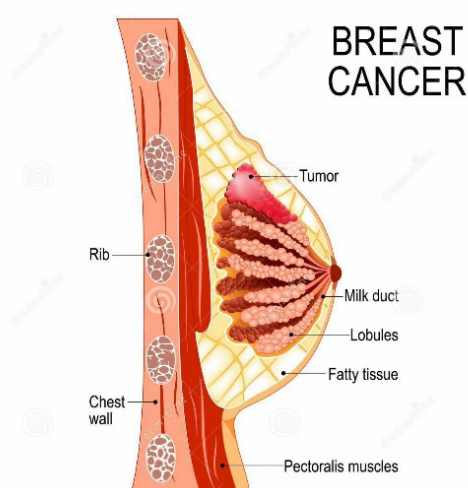


Figure 2. Showing breast cancer.

Some common warning symptoms of breast cancer include swelling or a lump (mass) in the breast.

- Edoema under the arms (lymph nodes)an expulsion from the nipple (clear or bloody)

- Retracted (inverted) nipple discomfort.
- Nipple skin that is scaly or pitted
- Persistent soreness and unusual breast tenderness or discomfort.
- Advanced stage (metastatic) sickness includes underarm lymph nodes as well as extra symptoms including bone pain (bone metastases).
- hunger loss and shortness of breath (lung metastases) (liver metastases)
- unanticipated loss of weight (liver metastases), headaches, neuropathy, or weakness.

Types of breast cancer

Non-invasive breast cancer

It is a malignancy that has not spread beyond the ducts or lobules in which it is located. Ductal carcinoma *in situ* is a type of non-invasive breast cancer. Ductal Carcinoma *in situ* (DCIS) is a condition in which abnormal cells form inside the milk ducts but do not spread to nearby tissue or outside the body. "In situ" refers to something that is "in place." Atypical cells can develop into invasive breast cancer even if they have not yet spread to tissues outside of lobules or ducts. A biological knowledge of the available material is offered, together with a demonstration of the typical backdrop of every scientific unit. Since lobular carcinoma in-situ is only recognised to be a dangerous sign rather than a precursor for the progressive growth of invasive cancer, further surgical intervention is unnecessary and just sequential follow-up is advised once the decision is made. Keep in mind that breast-preserving therapy is currently thought to be the best treatment for breast cancer, the disease we are trying to stop, when managing Ductal Carcinoma *In Situ* (DCIS). The drawbacks of suggested management based on retrospective statistics have been considered, and it is confirmed that clinical research must be conducted to determine the most effective, useful treatment for non-invasive breast cancer^[3].

Lobular carcinoma *In Situ* (LCIS): Breast lobules form as a result of this type of breast cancer^[4]. Breast tissue has not been invaded by the breast cancer outside the lobules. Typically, lobular carcinoma *in situ* is recognised as a non-invasive form of breast cancer .

A situs ductal carcinoma is the type of non-invasive breast cancer that affects the breast duct only and is the most prevalent. Ductal comedocarcinoma is an illustration of ductal carcinoma *in situ*.

Invasive breast cancer

It occurs when aberrant cells from the milk ducts or lobules split off and get in close contact with breast tissue. Cancer cells can spread from the breast to several body areas via the immune system or the circulatory system^[6]. They may act at the beginning of the development when the tumour is small or later when the tumour is enormous. The most common type of general carcinoma in females is invasive breast cancer. The wealthy populations of Australia and Europe, where 6% of females develop invasive breast cancer before the age of

75, are the areas most at risk. With advancing age, the risk of breast cancer increases quickly. It is also known that invasive breast cancer can spread to other body organs. The brain, bones, lungs, and liver are the organs to which these cells spread most frequently. Once more, these cells separate, grow erratically, and give rise to new tumours. There are still breast cancer cells forming in different parts of the body.

Infiltrating Lobular Carcinoma (ILC)

Invasive lobular carcinoma is another name for infiltrating lobular cancer. The milk glands (lobules) in the breast are where ILC begins, but it frequently spreads to other parts of the body [7].

Infiltrating Ductal Carcinoma (IDC)

Another name for infiltrating ductal carcinoma is invasive ductal carcinoma. IDC starts in the breast's milk ducts, moves to the duct wall, then invades the fatty tissues of the breast and perhaps other parts of the body [8].

Medullary carcinoma

A discrete margin of normal tissue and medullary tissue is designed by the invasive breast cancer known as medullary carcinoma [9].

Mucinous carcinoma

Mucinous carcinoma, also known as colloid carcinoma, is a rare form of breast cancer caused by cancer cells that produce mucus. In general, ladies with mucinous carcinoma typically have a better prognosis than females with other types of invasive carcinoma [10].

Tubular carcinoma

An example of an invasive breast cancer is a tubular carcinoma. Women with tubular carcinoma typically have better chances than women with other types of invasive cancer [11].

Inflammatory breast cancer

Breasts with dimples and/or broad ridges, as well as red, heated, and swollen breasts, are symptoms of inflammatory breast cancer, which develops when cancer cells block lymphatic channels or capillaries in the skin over the breast. Even so, inflammatory breast cancer is rare and developing quite quickly [12]. Radiation therapy, surgery, chemotherapy, and imaging are just a few of the multidisciplinary approaches used in treatment that must be carefully coordinated. Since the time of the first report of this matter, the administration of neoadjuvant chemotherapy has significantly contributed to an improvement in overall survival and has served the purpose of locoregional treatments like radiation and surgery significant to long-term improvements in this condition.

Paget's disease of the breast

It is a rare form of breast cancer that frequently causes noticeable alterations to the breast's nipple. Red, itchy rashes around the nipple are some of its symptoms, and they occasionally spread to the rest of the skin as well. Although it mimics other skin illnesses like eczema and psoriasis, it can be distinguished

because Paget's disease of the breast often affects only one breast and begins at the nipple rather than the areola. Other skin conditions, such as eczema and psoriasis, typically affect both breasts (breastcancercare.org.uk) Paget's disease is a type of breast cancer that accounts for roughly 1%-3% of all cases and can strike both men and women. There are a few theories that support the aetiology of Paget's disease of the breast, yet the real theory underlying its pathogenesis or development is still unclear. Their warning symptoms include breast lumps, nipple flattening or inversion, bleeding and leaking discharge, and others. A punch biopsy can be used to make the diagnosis. If it stays in the breast ducts or nipple, the prognosis is favourable [13].

Phyllodes tumor

Tumors on the phyllodes can be benign or cancerous. Phyllodes tumours can be surgically removed if they form in the breast's connective tissues [14]. Less than 10 girls each year in the United States die from phylloides tumours, which are extremely rare.

Triple-negative breast cancer

It is currently well known that breast cancer is a diverse disease with distinct subtypes that may be identified by their different clinico-pathological traits, prognoses, and therapeutic responses. Progesterone receptor, human epidermal growth factor receptor 2, and oestrogen receptor expression deficiencies are characteristics of triple-negative breast cancer [15]. White females account for 10%-15% of instances of this destructive variety, which is frequently seen in premenopausal women and has an enhanced incidence.

Awareness

October is breast cancer awareness month, a yearly initiative to increase public understanding of the disease. Breast cancer is the most typical type of cancer. This disease has become a major problem and has spread to countries all over the world, including India.

There are numerous breast cancer awareness slogans from which to choose, like:

- Breast cancer awareness is not just a month.
- Fighting breast cancer takes everyone.
- Every ribbon makes a difference.
- Awareness is power.
- Early detection saves lives.
- A cure worth fighting for.
- One team. one dream.
- Feel for lumps, save your bumps

Health groups frequently run campaigns to raise public awareness about a certain ailment. Some health campaigns, such as the Memorial Quilt displays for AIDS or the American Heart Association's "Wear Red Day" for heart disease in women, are merely meant to promote widespread awareness of a specific health problem. Other campaigns have more specific goals, such

as persuading people to change risky behaviours (such as the Office of National Drug Control Policy's "Above the Influence" campaign, which encourages teenagers to avoid drug and alcohol use) or promoting preventive health measures (such as the US CDC's "VERB: it's what you do" campaign, which ran from 2002 to 2006 and aimed to increase youth physical activity levels). A number of programmes, such as the US CDC's "Screen for Life" campaign, which involves celebrities promoting colorectal cancer screening, focus explicitly on raising early identification of disease. This study examines the impact of one of the most well-known and longest-running breast cancer awareness initiatives, National Breast Cancer Awareness Month (NBCAM), which began in 1985. One of NBCAM's main goals is to promote frequent breast examinations so that disease can be detected early. Breast cancer is connected with improved survival rates and cheaper treatment costs when detected and treated early. We chose NBCAM as our target because it is a well-known national campaign that has been running for more than two decades, and we can use its association with a specific month of the year (October) in our empirical design. We can assess if the campaign's promotion of breast cancer screening in October resulted in an increase in the number of breast cancer diagnoses in November (since there is typically a 1-month lag time between screening and confirmed diagnosis). We may also look at how the campaign's effectiveness in increasing November diagnoses has changed over time ^[16].

Conclusion

The growing body of knowledge about the pathophysiologic mechanisms of breast cancer has resulted in a significant increase in the number of biomolecular indicators. Furthermore, the field of targeted drug design has advanced swiftly and become more complex, resulting in a plethora of medicines that target these markers for in vivo research in animal models as well as clinical trials. Scientists and physicians are enthusiastic about the developing management techniques, but they are concerned that resources will be insufficient to bring these drugs to advanced clinical trials.

Breast cancer is found in just 5% of females who have a malignant tumour in their breasts and are experiencing pain. Immobility, skin alterations (such as thickness, edoema, and redness), and nipple abnormalities (such as ulceration, retraction, and spontaneous bloody discharge) may also be present. Today, there are numerous therapeutic options for breast cancer, including surgery, radiation therapy, chemotherapy, hormone therapy, and, more recently, nanotechnology and gene therapy. Breast cancer death rates have decreased as a result of advancements in screening, diagnosis, and therapy. In reality, about 90% of newly diagnosed breast cancer patients will live for at least five years. The development of even more effective screening and treatment procedures is still under way.

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