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Review Article

Exploring Breast Cancer Liver Metastasis (BCLM): A Global Perspective on Symptoms, Risk Factors, and Geographical Variations

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Abstract:

Breast cancer liver metastasis may cause cachexia, nausea, vomiting, anorexia, severe hepatomegaly, jaundice, and ascites. Breast cancer is the most frequent cancer in women and a killer. The sickness is widespread, although regional incidence, mortality, and survival rates differ. Environment, genetics, lifestyle, and population structure may produce these disparities. The study used English-language breast cancer risk factor and epidemiology literature. This analysis eliminated qualitative research, therapeutic and diagnostic studies, and studies that were not focused on the study's goals. Titles, abstracts, and full texts determined study selection. Breast cancer, the most prevalent cancer among women, ranks second worldwide. 12.4% of American women—1 in 8—will get breast cancer. In 2012, 1.67 million breast cancer cases were detected globally, 25% of all malignancies. Cancer may affect anybody, although industrialized countries have a higher risk, and breast cancer rates differ by race and ethnicity. More women globally have breast cancer than any other cancer. Worldwide, a million new cases and 400,000 fatalities were projected in 2002. Northern Europe and North America have the highest incidence, southern Europe and South America middle, and Africa and Asia lowest. Less industrialized countries have 20 age-standardized occurrences per 100,000, whereas developed ones have 95. Chinese women breastfeed for fewer months, have fewer children, and have their first child later in life than Malay women. High socioeconomic status, cuisine, and genetics may increase risk factors in China. The Breast Cancer Research Initiatives Foundation (CARIF) in Malaysia is exploring breast cancer genetics in Malaysian women owing to data shortages.

Keywords: *Breast cancer liver metastasis, BCLM, breastfeed, Breast Cancer Research*

Introduction:

One of the leading causes of death in the globe is cancer (Momenimovahed et al. 2017) (Momenimovahed and Salehiniya 2017). The most prevalent cancer in women globally is breast cancer (BC), which accounts for 30% of all new cases. The clinical prognosis of BC patients has significantly improved over time thanks to advancements in diagnostic and treatment procedures, with an early BC 5-year survival rate above 90%. However, distant metastasis continues to be the predominant reason for patient death and treatment failure. And it is noteworthy that about 2%-6% of individuals have already acquired metastases at first diagnosis. Bone (85%), liver (40–50%), pleura or lung (20%), and brain (6%–16%) are the main metastatic locations. Patients with liver metastases often have a poorer prognosis than those with bone or lung metastases; their median survival time, regardless of therapy, is just 14 to 16 months. Breast cancer liver metastasis (BCLM) can manifest as nausea, vomiting, anorexia, and even severe

hepatomegaly, jaundice, and ascites, which are all indications and symptoms of cachexia. Breast cancer is the most prevalent cancer in women and one of the main killers in this demographic (Puts 2018). In 2008, malignant diseases claimed the lives of 8 million people; by 2030, that figure is expected to increase to 11 million (Benson and Jatoi 2012). Although the disease is widespread, there are notable geographical variations in its incidence, death, and survival rates. A number of factors, such as environment, genetics, lifestyle, and population structure, might be to blame for these variances (Hortobagyi et al. 2005). Changes in risk factors have led to an increase in the incidence of breast cancer, which is increasing everyday (D. Maxwell Parkin and Fernández 2006). While screening can lower the incidence of breast cancer, there are drawbacks to this approach, including increased expenditures, over diagnosis, and side effects. By categorizing women according to their risk factors for breast cancer, risk-free practices may be improved, and tailored breast cancer screening programs can be created (Mavaddat et al. 2015). One of the most important tools for developing programs and policies are review papers, which may give scholars a comprehensive understanding of the different facets of a phenomena (Khakbazan et al. 2014).

This study aimed to determine the global prevalence and mortality rate of breast cancer as well as the risk factors related to the illness through the consolidation and synthesis of data from several population-based studies conducted internationally.

Material and Methods:

The study included articles written in English that covered a variety of aspects of breast cancer, such as risk factors and epidemiology, after a list of pertinent publications was developed. Exclusions from the current analysis included studies that were not sufficiently focused on the objectives of the investigation, studies regarding therapeutic and diagnostic elements, and qualitative studies. Analysis of the article titles, abstracts, and full texts was used to choose the studies. During the first search, three databases yielded 600 items, while a manual search produced an additional 49 articles. EndNote software was used to examine the titles and abstracts of 500 articles after duplicates were eliminated. 200 papers were included in the research following the first screening, and 48 of those were removed for grounds related to science. Ultimately, the analysis comprised 148 English-language publications(Hossain, Ferdous, and Karim-Kos 2014)(Solikhah and Nurdjannah 2020).

The biggest cause of cancer-related fatalities among women worldwide is breast cancer. Breast cancer is the most common type of cancer in women globally and the main reason why people die from cancer. More than 1.38 million new cases of breast cancer were reported in 2008; around 50% of these patients also passed away from the condition, with developing countries accounting for 60% of these fatalities. Worldwide, there is a wide disparity in the 5-year survival rate for breast cancer; affluent nations have an estimated 5-year survival rate of 80%, while developing nations have a survival rate of fewer than 40%. Breast cancer's significant impact on morale in the US between 1975 and 2000 is related to continual advancements in treatment and mammography screening. According to the World Health Organization (WHO), increasing breast cancer outcome and survival via early diagnosis remains to be the cornerstone of breast cancer policy. Many modern drugs are suggested for the treatment of breast cancer. Medical therapy with anti-estrogens like tamoxifen or raloxifene may prevent breast cancer in people who are more susceptible to get it (Li et al. 2022).

Incidence:

Breast cancer is the second most common illness worldwide and the most common cancer in women. 12.4% of all women in America, or one in eight, may develop breast cancer in their lifetime. 1.67 million brand new cases of breast cancer were recorded globally in 2012, making up 25% of all cancer cases. Although cancer may affect anybody, anywhere in the world, industrialized countries have a higher incidence rate, and breast cancer incidence varies greatly by race and ethnicity. Between Middle Africa and East Asia and North America, the incidence rate of breast cancer ranges from 27 per 100,000 to 92 per 100,000 (Khudri 2018).

Breast cancer incidences are expected to reach 3.2 million by 2050. As the population ages, the incidence rate of breast cancer among the elderly is increasing in industrialized nations. In 2017, there were around 252,710 new instances of invasive breast cancer found in the United States, as well as 6,341 new cases of in situ breast cancer. China, Japan, and Indonesia have the highest incidence of breast cancer in the Asia-Pacific region, which accounts for almost 24 percent of all cases. Women outside of Japan are also more likely to have breast cancer; from 1988 to 2006, Korea had the highest rate, followed by Southeast Asia from 1988 to 2013; this trend is also seen in women in Asia and

America. In East Asia, it was anticipated that 2012 will have 277,054 new cases of breast cancer. This figure was 107,545 in Southeast Asia and 223,899 in South-Central Asia. In Europe, Scotland's 1-year breast cancer survival rate is 94.1%, whereas Italy's is 97.1%. African women's slow pursuit of diagnosis and treatment is to blame for the low survival rate of breast cancer in this population. The age-standardized rates per 100,000) of breast cancer for various regions of the world are as follows: With 74.1 and 31.3 respectively, the most developed regions are Western Europe (96.0), North America (91.6), Northern Europe (89.4), Australia/New Zealand (85.8), and Eastern Asia (27.0) (Torre et al. 2015)(et al. 2022).

Global Breast Cancer Incidence:

More women than any other kind of cancer are affected by breast cancer in a large portion of the world. Around the world, it was anticipated that there would be over a million newly diagnosed cases and over 400,000 fatalities in 2002. There is a considerable geographical variation, with northern Europe and North America having the highest prevalence, southern Europe and South America having a middle frequency, and Africa and Asia having the lowest occurrence. Age-standardized incidences range from 95 per 100,000 in more industrialized countries to 20 per 100,000 in less industrialized countries. Asia has seen a sharp rise in the frequency of breast cancer in recent years, and the disease can manifest at extremely young age (Moore et al. 2003).

In addition to the wide variation in incidence, there are also wide variations in mortality and survival between distinct countries, regions, and populations. Several complex factors, including population structure (age, race, and ethnicity), lifestyle, environment, socioeconomic status, the incidence of risk factors, use of mammography, and disease stage upon diagnosis, contribute to these variations. Further research is needed to completely understand the reasons of variation in breast cancer outcomes in order to aid in the development of specific approaches to improve outcomes generally, the standard of care for underprivileged areas, and lower the burden of breast cancer internationally (Hortobagyi et al. 2005). Breast cancer has a relatively good prognosis, as shown by the expected survival rates, which are on average 73% in industrialized countries and 57% in developing ones. Therefore, while being the sixth most common cause of cancer death worldwide, breast cancer continues to be the leading cause of cancer mortality in women (the 411,000 annual fatalities represent 14% of female cancer deaths). According to instances reported by the US SEER Program between 1995 and 2000, screening programs are another factor in Western countries' extremely high five-year survival rates (89%). Due to its high incidence and favorable prognosis, breast cancer is currently the most prevalent cancer in the world; it is estimated that 4.4 million women are still alive today after receiving a diagnosis of breast cancer in the last five years, compared to only 1.4 million survivors of lung cancer, whether they are male or female. Estimates show that 1.5% of American women have survived breast cancer (D. M. Parkin et al. 2005).

Table 1: Risk Factors in developing countries and their Severity

S.No.	Risk Factors	Severity
1.	Increasing age	Mild
2.	Geographic Location	Mild
3.	Family History	Severe
4.	Reproductive factors	Moderate
5.	Carcinoma of the uterus	Moderate
6.	Carcinoma of the ovary	Moderate
7.	Dietary factors – diet rich in animal fats	Moderate
8.	Exogenous hormones - Oral contraceptives	Mild
9.	Alcohol – more than 2 drinks pre day	Severe
10.	Postmenopausal obesity	Moderate
11.	Higher socio-economic group	Mild
12.	Limited breast feeding (for long periods is a protective factor)	Moderate

Breast cancer prevalence in developing nations:

In Malaysia, there was a severe lack of data on the prevalence of cancer prior to the National Cancer Registry's (NCR) establishment in June 2003. An age-standardized incidence rate (ASR) of 46.2 per 100,000 women was reported for breast cancer in 2003, according to data from Malaysia's National Cancer Registry (NCR), which received reports of 3738 new cases. This indicates that one in twenty Malaysian women will develop breast cancer. The three main races—Malaysians, Chinese, and Indians—have various rates, nevertheless. With a rate of 59.7 per 100,000, Chinese people had the highest age-standardized incidence, followed by Indians with a rate of 55.8 per 100,000. The lowest prevalence is among the Malay people, with 33.9 per 100,000. Accordingly, 1 in 16 Chinese women, 1 in 16 Indian women, and 1 in 28 Malay women will have breast cancer in the future (Chye, Rampal, and Yahaya 2008).

Due to the various age patterns of the populations of various nations and even those of different races within a single country (Figure 1) Instances are always greater than the crude rate in areas where youth make up the bulk of the population.

The risk variables known to be linked to breast cancer can be used to explain the difference in incidence rates between Malays and Chinese (Table 1). Chinese women are more likely than Malay women to have fewer children, have their first child later in life, and breastfeed for fewer months. Other risk factors may be related to the Chinese population's generally higher socioeconomic status, diet, and heredity. Since there are currently limited data on the genetics of breast cancer in Malaysian women, the Breast Cancer Research Initiatives Foundation (CARIF) in Malaysia is now undertaking a study. The NCR in Malaysia has only been in effect since 2002, hence there are no temporal patterns to be detected. However, in numerous Asian countries with long-standing cancer registries, there has been a sharp increase in incidence rates. For instance, Singapore witnessed a yearly increase in the incidence of breast cancer of 3.7% from 1968 to 1997 (D. Maxwell Parkin and Fernández 2006). This unfavorable trend is mostly due to increased exposure to exogenous hormones, decreased births and nursing, and unfavorable dietary and lifestyle changes, such as obesity and decreased physical activity.

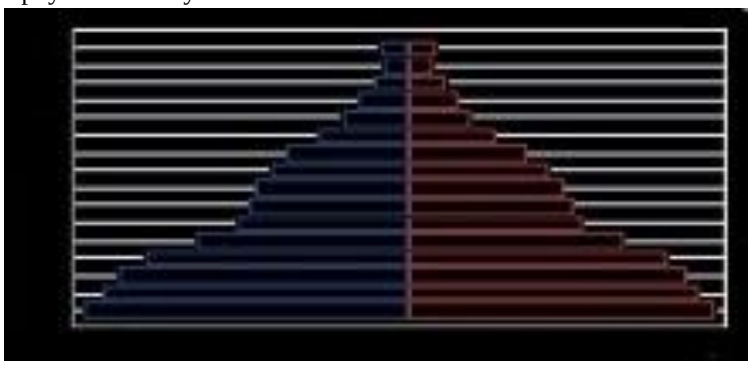

Fig (1) Population Pyramids by Ethnicity for Chinese (Male and Females in left and right)

Fig (b) Population Pyramids by Ethnicity for Indians (Male and Females in left and right)

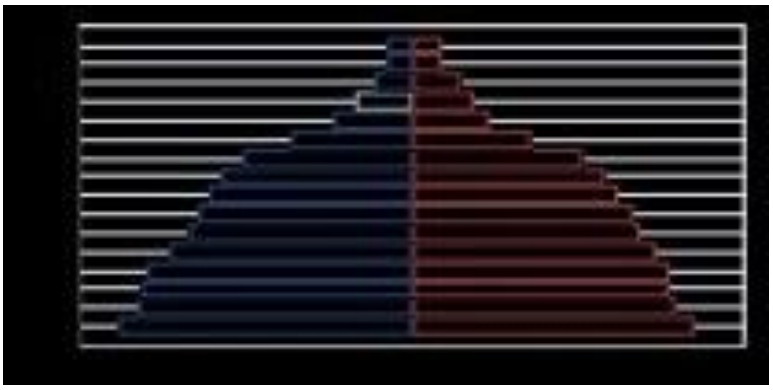

Fig (c) Population Pyramids by Ethnicity for Malaysia (Male and Females in left and right)

Death Rate:

Breast cancer is the sixth most common cause of cancer-related deaths worldwide, accounting for 324,000 cancer-related deaths in 2012. Breast cancer was the most prevalent cause of mortality in less developed countries. With 197,000 fatalities, or 15.4% of all deaths, in industrialized countries, breast cancer was the second highest cause of mortality after lung cancer (Ferlay et al. 2013). Less developed locations had greater death rates despite wealthier countries having a higher prevalence of breast cancer (Ghoncheh, Mohammadian-Hafshejani, and Salehiniya 2015). In addition, 89% of all breast cancer-related fatalities in the US in 2017 were women who were 50 years or older. As a consequence of improved treatment and diagnostic methods as well as the promotion of breast cancer management in these countries, there has been a noticeable decrease in the death rate from breast cancer. The age-standardized mortality rate (ASMR) for breast cancer is 12.9.31 and is greatest in Africa. While there are six deaths for every 100,000 individuals in East Asia, there are 20 deaths for every 100,000 people in Western Africa. Given that the majority of Asian countries have poor to intermediate economic levels, breast cancer is one of the main causes of mortality in these countries (Fan, Goss, and Strasser-Weippl 2015).

Risk factor

Increasing age

Age is the most important known risk factor for breast cancer. The incidence rate of breast cancer increases significantly with age and reaches its peak in the age of menopause and then gradually decreases or remains constant. In a case–control study, the age more than 50 years was associated with the incidence rate of breast cancer. However, breast tumors in younger women appear in larger size, advanced stages, positive lymph nodes, and weaker survival. Throughout the world, age-specific incidence rates for breast cancer increase sharply up to about 45-54 years, after which they continue to increase (at a slower rate) in high incidence areas - such as the USA. The incidence rates peak in nations where the illness is relatively rare around menopause and then either fall or level out in later age groups. The incidence of breast cancer tends to plateau in nations with intermediate rates, like Greece or the former Yugoslavia, after peak rates at 45 to 54 years of age (Kalache 1990)(Schultze and Mbarek 2005).

Table 1: Breast cancer age-standardized cancer ratios (ASCAR) in a few cancer registries in underdeveloped nations; exclusively women

Sr. No.	Country	Cancer Registry (CR)	Years	Breast Cancer
1.	Kenya	National CR	1968-78	10.4
2.	Liberia	Liberia CR	1976-80	17.4
3.	Nigeria	Ibadan CR	1970-76	17.2
4.	Sudan	Sudan CR	1978	26.0
5.	Swaziland	National CR	1979-83	9.7
6.	Uganda	Kampala CR	1971-80	11.3
7.	Tanzania	National CR	1980-81	5.1
8.	Zambia	Lusaka CR	1981-83	9.1
9.	Zimbabwe	Bulawayo CR	1973-77	8.9

10.	Argentina	La Plata CR	1978-80	32.1

Geographic location

Some races are more likely to get breast cancer than others within the same geographic region. Although black women under the age of 40 have a greater frequency of the disease than white women, the rates for the condition are roughly 30% higher among white women in the USA than black or Hispanic women. Reproductive factors can, at least in part, account for the variations in rates. The mean age at first full-term pregnancy (FFTP) among black women in the USA, for instance, has been significantly lower since at least the cohort born in 1890, despite the fact that recent studies have revealed that the risk factor profile for breast cancer in black women is increasingly resembling that of white women. As a result, black women's breast cancer incidence rates in the USA are rising significantly faster than those of white women (Yip, Taib, and Mohamed 2006)(Ali et al. 2023).

Table 2: Estimated crude cancer incidence rates (per 100,000) for the five most chosen global regions

Sr. No.	Area of world	Breast cancer
1.	East Africa	09
2.	Australia/New Zealand	66
3.	Southern Europe	60
4.	Tropical South America	27
5.	Middle South Asia	15
6.	Japan	20
7.	China	12
8.	North America	87
9.	Western Africa	07
10.	Northern Europe	82

Breast cancer in the family

One of the main risk factors, which has been noted in several research, is a family history of breast cancer. According to research, women without BRCA mutations who have a family history of breast cancer (two or more occurrences in women under 50 or three or more cases at any age) are around 11 times more likely to get the disease. A risk factor for the development of breast cancer in BRCA1 and BRCA2 carriers is a history of early-onset breast cancer in close family members. According to the findings of a case-control research, having a history of breast cancer doubles the chance of getting contralateral breast cancer. There was no correlation between the severity and mortality of breast cancer and family history of the disease in a hospital-based cohort of 5,359 women. Researchers concluded that clinical care of breast cancer should not change for people with or without a family history of the disease and knowledge of underlying alterations. Individuals with a family history of breast cancer may be candidates for tamoxifen-based chemotherapy or enhanced magnetic resonance imaging breast screening (Thakur et al. 2017).

Reasons for reproduction

The action of ovarian hormones, which start around puberty age and continue during monthly cycles, is associated to the association between reproductive variables and breast cancer. These hormones are also influenced by the number of pregnancies and finally diminish in menopause.

- **Early menarche less than 11 years**

  An earlier age of menarche is associated with a twofold increased risk of breast cancer, according to the results of a case-control research. Numerous more investigations have supported this conclusion. A significant population cohort study of 11,889 women in China found that breast cancer risk is higher in women who were younger when they had menarche. However, in other research, menarche at a younger age was not linked to a higher risk of breast cancer. An Italian study found no connection between the length of menstrual periods and breast cancer (Frikha and Chlif 2021).

- **Late menopause more than 55 years**

  A higher risk of breast cancer is linked to menopause occurring beyond age 50. The findings of a case-control research further supported the link between breast cancer incidence and advanced age at menopause.

- **More than 30 years after the first birth**

Breast cancer risk declines with parity in women who are porous. With a relative risk of more than six times higher, older age at the time of the first delivery was shown to be the most significant risk factor for breast cancer in a case-control research. According to a research, women who were older at the time of their first childbirth had a 27% higher chance of having breast cancer, and every childbirth lowers the risk of PR+ and ER+ tumors by as much as 10%. According to the research' findings, having a baby at full term is a protective factor. Women who are nulliparous are more likely to acquire breast cancer than those who have had more than three children, according to studies. However, having many pregnancies was linked to a lower risk of breast cancer in certain studies, while a case-control study's findings suggest that having more than five full-term births raises the risk of breast cancer. High parities were linked to an increased risk of breast cancer in adults under the age of 45 (incidence rate ratio [IRR] for four or more births), and a decreased risk in those over the age of 45, according to a research of African-American women. In a prospective cohort research, null parity was connected to grade III, HER2-positive, big tumors, high Ki67 and cyclin D1 levels (Mahouri, Zahedani, and Zare 2007)(Harrington et al. 2015).

Carcinoma of the uterus

Many breast cancer patients get hormone treatment, which can lower the body's estrogen levels, such as aromatase inhibitors, selective estrogen receptor modulators (SERMs), or ovarian suppression. This reduction in estrogen can lead to an increased risk of uterine cancer because estrogen plays a protective role in the uterine lining. The imbalance between estrogen and progesterone can result in uterine hyperplasia and cancer. Amoxifen is a common medication used for the treatment of breast cancer. While it is effective against breast cancer, it may have a partial agonist effect on the uterus, which means it can stimulate the uterine lining and increase the risk of uterine cancer. For this reason, tamoxifen-treated women are carefully watched. Breast and uterine cancer risk can both be increased by some genetic abnormalities, such as Lynch syndrome (hereditary non-polyposis colorectal cancer, or HNPCC). These genetic variations in women may increase their risk of developing both malignancies (Serpe et al. 2022)(Panegyres and Graves 2012).

Carcinoma of the ovary

In the context of breast cancer, the risk factors for developing ovarian carcinoma (ovarian cancer) are intricate and might differ from person to person. Despite the fact that ovarian cancer is not directly brought on by breast cancer. Breast and ovarian cancer risk are dramatically increased by inherited mutations in the BRCA1 and BRCA2 genes. Hereditary breast and ovarian cancer (HBOC) syndrome, which is more common in women with BRCA mutations, increases the risk of ovarian cancer in these women. A healthcare professional may suggest risk-reduction measures in such circumstances, such as preventive oophorectomy (ovaries removed). Tamoxifen and aromatase inhibitors, two breast cancer therapies, may have an impact on ovarian function. Particularly Tamoxifen, when used long-term, may have a partial estrogenic impact on the ovaries, raising the risk of ovarian cancer. This risk is often regarded as being minimal, and tamoxifen potential advantages in treating breast cancer frequently outweigh this risk (KOIKE et al. 2003).

Dietary factors – diet rich in animal fats

Numerous experts have examined the connection between food and nutrition and cancer in a number of studies. Breast cancer and the non-vegetarian diet were linked in a case-control study. A case-control study's findings indicated that a diet low in saturated and polyunsaturated fatty acids is more significant than total dietary fat consumption in preventing breast cancer. Another study's findings revealed that when overall meat and non-processed meat intake rises, so does the risk of breast cancer. According to the findings of a European prospective research on cancer and nutrition, eating saturated fat significantly increases the chance of getting breast cancer. However, Harris et colleagues discovered that adolescent nutrition may raise the incidence of breast cancer in women before menopause. In contrast to benign tissues, malignant tissues had distributions of Fe, Cu, and Zn concentrations that were greater, according to the findings of a study. The researchers raised the possibility that this might contribute to or result in breast cancer (Zhang et al. 2022)(Seiler et al. 2018).

Exogenous hormones - Oral contraceptives

Numerous researches have looked at the contribution of birth control tablets on the incidence of breast cancer. According to the findings of a case-control research, taking an oral contraceptive pill increases your chance of getting

breast cancer. This outcome was supported by other research. However, a research by McDonald and colleagues that looked at women between the ages of 35 and 64 found no link between current or past usage of contraceptive tablets and an increased risk of breast cancer. According to Williams et al., breast lobular tumors and current contraceptive usage are related. Researchers have suggested that the link between med Roxy progesterone acetate and breast cancer may be caused by the detection of mammary tumors or the expansion of pre-existing mammary tumors. Five to ten years after hormonal contraceptives are stopped, an elevated risk of breast cancer declines (Hunter et al. 1997).

Replacement of hormones

Breast cancer risk has been linked to hormone replacement treatment (HRT), especially estrogen-progestin combo therapy. Combination treatment, which contains both estrogen and progestin, is the main factor connected with HRT and the risk of breast cancer. In order to lower the risk of endometrial cancer in women who have uteruses, progestin and estrogen are frequently administered together. The risk of breast cancer appears to increase with chronic HRT use. Women who use HRT for a longer period of time—often five years or more—have an elevated chance of developing breast cancer. Breast cancer risk may vary depending on HRT composition and administration method. For instance, estrogen-only therapy rather than estrogen and progestin combination therapy may be linked to a decreased risk of breast cancer. It is important to emphasize that the increased risk associated with HRT is often minimal for the majority of women when making the decision to use it. The decision to use HRT should be based on an individual consideration of the potential benefits and risks. HRT can significantly assist with menopausal symptoms including hot flashes and osteoporosis prevention, but it should be used with caution, especially in women with a strong family history of breast cancer or other risk factors (Albuquerque, Baltar, and Marchioni 2014)(Ahern et al. 2021).

Alcohol Intake

The function of alcohol carcinogens and their relationship to breast cancer have been discussed in a number of researches. A correlation between alcohol use and both hormone receptor-positive and -negative breast tumors was found by the European Prospective Investigation into Cancer and Nutrition (EPIC). The findings of this study demonstrated that the timing of alcohol intake can influence the risk of acquiring breast cancer and that people who drink alcohol before to their first full-term pregnancy had a greater chance of doing so. In a case-control study, alcohol intake, with a 4.2-fold increase, was one of the major risk factors for breast cancer, second only to elderly age at the time of the first delivery. Alcohol use and ER+ invasive lobular carcinoma and ER+ invasive ductal carcinoma were linked in a population-based case-control study. Another research that also supported these findings (Fakhri et al. 2022).

Postmenopausal obesity

Numerous researches have looked at the link between obesity and breast cancer. Due to greater rates of peripheral aromatization of androgenic precursors into estrogen in adipose tissue, obesity is linked to breast cancer. On the other hand, obesity-related elevated levels of insulin and insulin-like substances can promote the development of cancer cells. A prospective observational research found that between 17% and 14% of postmenopausal breast cancer cases among 74,177 women were linked to weight increase of more than 5 kg since the age of 18. According to study results, prenatal obesity increases the risk of long-term cancer development, such as ovarian and breast cancer. Body mass index (BMI) has a role in patient survival and is an independent predictor of overall survival in breast cancer patients. The results of the study showed that postmenopausal obese women (BMI 30 kg/m2) had worse disease-free survival and overall survival rates at the time of breast cancer diagnosis than non-obese women. In addition, a cohort study found a link between height and breast cancer (Bazar, Hernández, and Bazar 2020).

Socio-economic standing

The impact of socioeconomic level on the incidence rate of breast cancer is one of the topics that have received more in-depth attention in recent research. Studies have shown a connection between breast cancer and high socioeconomic level. Women with higher socioeconomic position are more likely to get breast cancer, which may be related to the direct impact of significant risk factors including paralysis, older age at the time of the first baby, and menopause. In this social stratum, women's menstrual cycles can also be impacted directly and indirectly by sedentary lifestyles and high-fat diets. On the one hand, these women have better access to medical treatment as well as to screening, diagnosis, and prevention of breast cancer. The incidence rate of breast cancer is influenced by a number of socioeconomic

factors, with education and work position being among the most crucial. According to researchers, working women often earn more money and are more likely to utilize health insurance. In addition, a person's inclination to spend money on medical treatment might be influenced by their financial status. Living in metropolitan locations is linked to an increased risk of getting breast cancer because of variations in lifestyle, nutrition, and environmental variables. Lower levels of vitamin C, retinol, and beta carotene, as well as high levels of fat consumption, are observed in people from lower socioeconomic classes, and these factors are linked to changes in the levels of the hormones prolactin and estrogen in the prevalence of breast cancer. Socioeconomic status has a substantial impact on a patient's prognosis in relapse and death situations. Additionally, researchers believe that socioeconomic position is a crucial predictor of overall survival and survival free from illness (Shetty et al. 2021)(Nurrohmah, Aprianti, and Hartutik 2022).

Limited breast feeding

Many researches have noted the importance of breastfeeding in preventing breast cancer, and breast feeding is a preventive factor against breast cancer. According to the findings of several research, breast cancer and breastfeeding duration are related. With longer nursing periods, lactation's protective impact grows. According to the findings of a case-control research, the interaction of two preventive factors—two or more pregnancies and nursing for more than 13 months—can lower the risk of breast cancer by up to 50%. In addition, although this impact varies in various ER states, breastfeeding may be linked to improvements in prognosis, a lower likelihood of recurrence, and an enhanced probability of survival among breast cancer patients. Other research have not demonstrated that breastfeeding lowers the risk of breast cancer (Prusty et al. 2020).

Conclusion

People all across the world bear an enormous burden due to cancer. This study examined global epidemiological features and risk variables related to breast cancer. Breast cancer is one of the most prevalent types of cancer and one of the leading causes of death in women worldwide. Breast cancer mortality rates are greater in developing nations. The results of this study demonstrated that a variety of factors, including genetic, environmental, and lifestyle factors, influence the incidence of breast cancer. In addition, many others factors, including parity, lactation, and exercise, play significant roles in lowering the risk of this disease. Breast cancer is the most common malignancy in women in poor countries. The frequency of Chinese and Indian women is higher than that of Malay women, and this discrepancy may be attributed to dietary, environmental, and reproductive factors. The age range of 40 to 49 is the most prevalent, accounting for more than 50% of cases.

Malay women in particular, in Malaysia, present at later stages and with larger tumors than their counterparts in the west. Therefore, Malay women's chances of surviving are lower than those of Chinese and Indian women. The stage of diagnosis and obtaining excellent care backed by the most trustworthy facts determine the chance of surviving breast cancer. For this reason, clinical practice guidelines have to be developed, regularly updated, and implemented. In addition to local clinical practice guidelines that were published jointly by the Ministry of Health and the Academy of Medicine in 2002, international efforts have been made to develop clinical practice guidelines for the management of breast cancer in developing countries stratified according to the level of facilities available in each country (Anderson et al. 2006).

Being able to provide a complete service for the detection and treatment of breast cancer is a difficulty that every nation in the globe must overcome. Breast surgeons, radiologists with a focus on breast imaging, breast pathologists, plastic surgeons with a focus on breast reconstruction, medical and radiation oncologists, psychiatric oncologists, counselors, and breast nurses must all receive special training to meet this need. Advocacy in this scenario may boost the political resolve to carry on this mission. Last but not least, breast cancer education is essential in developing countries, and women need to know the following: Breast cancer is curable if it is discovered and treated soon. The early detection methods include mammography, breast self-examination, and clinical breast examination. An unnecessary mastectomy could be avoided with early identification.

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