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Research article

Epidemiology of Breast Cancer among Women in Some Selected Hospitals in Zamfara State for the Year 2012-2021

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Abstract
Breast Cancer is second cause of death in women and continue to be a threat globally, this study examined the epidemiology analysis of breast cancer in-patients in Zamfara State over 10 years period that spanned 2012 – 2021. The scope of the study covers three General hospitals in Zamfara State, Nigeria namely; Federal Medical Centre Gusau Zamfara State, General Hospital Gusau Zamfara State, and Yariman Bakura Specialist Hospital Gusau Zamfara State. Data was sourced basically through secondary means from breast cancer incidence registers in the three hospitals of the study for the period of 2012 to 2021. The findings of the study show that breast cancer is prevalence among the female gender. The results from the analysis also showed that the prevalence of the disease differs among different age groups while the age range 50 to 59 seems to have the highest prevalence. For the young persons under 30 years, it was found that the incidence was very low, but for the elderly persons the incidence was very high. its recommended that health education or sensitization should be given along with regular breast cancer screening to women, especially post-menopausal women, and early regular screening for women in reproductive age group will help in early diagnosis and prompt treatment.

Keywords: Breast Cancer; Epidemiology; In-patients Self-examination

Introduction

Breast cancer is currently the most common type of cancer worldwide, with 2.26 million cases recorded in 2020 (WHO, 2021). It is also the most common cancer among women both in developed and developing countries, and a major cause for Public Health concern (WHO, 2021). While it exists around the globe, developed countries have a higher incidence rate and the incidence rate also varies by ethnicity and race (DeSantis et al., 2017. Breast cancer was also the 5th leading cause of cancer deaths worldwide in 2020, with 685,000 deaths attributed to it (WHO, 2021). In Nigeria, breast cancer cases were historically low but are now increasing as a result of urbanization and lifestyle changes. Breast cancer is the leading cause of deaths currently after cervical cancer, representing about 23% of all cancer cases and approximately 18% percent of deaths are attributed to it in the country (Arnold et al., 2022)

Breast cancer is a disease that is characterized by the abnormal growth of cells in the breast (CDC, 2020). It is the most common malignant disorder affecting women and the leading cause of death among them (Miller et al., 2018).

Globally, breast cancer was the most common cancer worldwide (excluding nonmelanomatous skin cancers) in 2020 based on Global Cancer Incidence, Mortality And Prevalence figures, with death rates higher in low -medium income countries (Sung et al., 2021). It is a leading cause of cancer morbidity and mortality among women globally. In recent times, female breast cancer has surpassed lung cancer as the most commonly diagnosed cancer, with an estimated 2.3 million new cases annually (Sung et al., 2021). Although it occurs in women of all races, however, a disparity exists in diagnosis, mortality, and survival (Adeloye *et al*. 2018). For example, African American women have a 42% higher breast cancer death rate compared to White women despite recent advancements in management of the disease (Foy *et al.,* 2018). It is worrisome to note that while incidence in the African region (although rising) was comparatively lower than in other continents except Asia, its age standardized mortality rate ranked the highest globally. Nigeria, the most populous African nation, has the highest mortality rate (Azubuike *et al*. 2018). Globally, breast cancer is uncommon in women less than 40 years of age, occurring only 4–6%. It is the most common malignancy in this age group. However, a significant increase has been

observed in recent times among premenopausal women (Johnson *et al.*, 2018).

In Nigeria the incidence of breast cancer is higher than the world's average; estimated at 2,625 per 100,000 women with a resultant high mortality **(**Azubuike, et al., 2018). The high morbidity and mortality due to breast cancer can be in-part reduced if the lesion is detected early enough. In this regard, women need to be "breast aware" by being able to identify the risk factors and symptoms of breast cancer as well as risk reduction strategies (Isara and Ojedokun, 2011). Most of the deaths from breast cancer are accounted for in developing countries due to lack of early detection programs, inadequate diagnosis and treatment facilities. This deficiency has led to many women presenting the disease in the late stages which provides very few chances of survival. The two components of early detection of breast cancer are health education to promote early diagnosis and screening (Isara and Ojedokun, 2011).

Despite the measures put in place to detect the disease at the early stage, the prevalence and late detection of breast cancer is still on the increase as a result of lack of awareness. Cancer infrastructure in Nigeria and specifically Zamfara State is limited, and some cancer management alternatives are unavailable such as Complementary or adjunctive therapies. Most breast cancer cases are detected at an advanced stage when there is nothing that can be done. Breast cancer therapy is quite expensive and many women with financial resources have to fly to countries like India, South Africa and USA for specialized treatment French, B., Thomas, et al., (2010). Very few several studies have been conducted on the epidemiology of breast cancer in Nigeria, and none is discovered with focus on Zamfara State. Patients in rural environments are medically underserved and have a higher risk of acquiring and dying from breast cancer.

It has been estimated that more than 80% of breast cancer are associated with environmental factors that include exposure to contaminants, lifestyle, and diet (Kim *et al*., 2015). Although curative treatment for breast cancer is increasingly successful, early detection and treatment are critical in reducing mortality rates among women (Thakur *et al.*, 2017). The knowledge and attitude towards breast cancer is low such that majority of the affected patients present late in the hospital when little or nothing can be done again (Cancer Treatment Centers of America, 2019). The three screening methods currently recommended by the American Cancer Society (2010) for early detection of breast cancer are clinical breast examination (CBE), mammography, and breast self-examination. BSE is a relatively simple, convenient, non-invasive, minimal-risk, and inexpensive method of early detection recommended for women. Women should begin this routine in their 20s to learn the look and feel of their healthy breast so that they may report any changes in their breasts to a health expert immediately (Bravi et al., 2018). BSE allows women to perform an examination independently (i.e., without relying on a health care professional). It also is often the only screening method available for women without access to professional health care services, such as those that lack adequate health insurance (Ahern et al., 2017). The study investigate the epidemiology of breast cancer among patients in Zamfara State over a period of 2012 – 2021.

Methodology

The study was conducted on three general hospitals in the state namely, Federal Medical Center Gusau Zamfara State; General Hospital Gusau Zamfara State; and Yariman Bakura Specialist Hospital Gusau Zamfara State. The study area was selected purposively because they are well established with capacity for treatment of breast cancer, hence the hospitals have sufficient data on breast cancer in-patients. Data were sourced by secondary means. The data was collected from breast cancer incidence registers in three hospitals during the study. In-patients data were retrieved from the registries based on the incidence year, gender, marital status and patients' age group from 2011 to 2022. The data collected were analyzed using Descriptive statistics and time series graph to examine the trends of breast cancer and predicts periods not cover in this study.

Results

The result in Table 1 below showed the yearly age distribution of breast cancer incidence in Zamfara State. The result indicated 2016 as the year with highest breast cancer incidence with 94 cases followed by 2019 with 75 cases. The incidence distribution of breast cancer is 3.2% in patients age range 20 -29, 16.3% of the patients falls between ages 30 - 39, 27% in age bracket 40 - 49, while 29.9% and 23.6% among age bracket of 50 – 59 and above 60 years of age. This implies that the risk of having breast cancer increases with age of human. Younger persons below age 20 has lower risk of being infected by breast cancer and the risk increases with age from 50 to 59, then decreases for persons of ages 60 and above.

Table 1: Age Distribution of Breast Cancer Incidence

Year	AGE GROUP					TOTAL
	20-29	30-39	40-49	50-59	60 above	
2012	0	5	10	7	12	34
2013	1	14	8	13	7	43
2014	1	7	17	7	17	49
2015	2	6	13	19	16	56
2016	5	14	20	39	16	94
2017	1	14	14	26	14	69
2018	2	8	19	11	12	52
2019	3	7	23	28	14	75
2020	1	11	21	9	8	50
2021	3	10	14	17	23	67
TOTAL	19	96	159	176	139	589
%	3.2%	16.3%	27%	29.9%	23.6%	100%

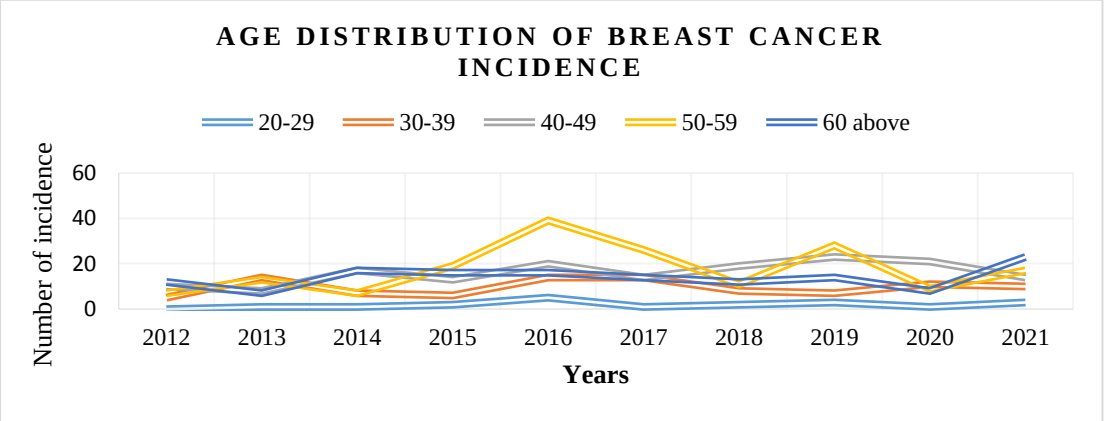

Figure 1: Yearly distribution of breast cancer incidence according to age

Breast cancer patients of age bracket 20 – 29 had the lowest incidence all through the years of study (Figure 1). Patients within the age bracket 30 – 39 had the highest incidence in 2013 only with 14 cases. Patients of age bracket 40 – 49 had the highest cases in 2018 and 2020 with 19 and 21 cases respectively while patients within the ages of 50 – 59 had highest cases in 2015, 2016, 2017 and 2019 with 19, 39, 26 28 cases respectively. Patients of ages of 60 and above had highest incidence in 2012, 2014, and 2021 with cases of 12, 17 and 23 respectively (Figure 1). This signifies that the age bracket with the highest breast cancer incidence is age bracket 50 – 59.

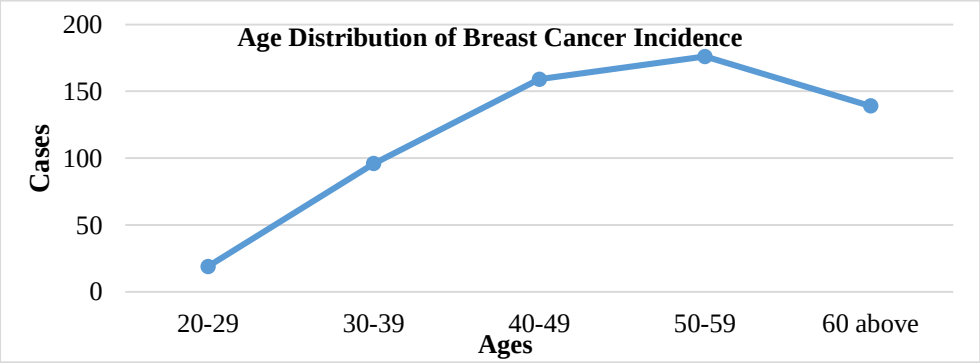

Figure 2: Age Distribution of Breast Cancer Incidence

The chart shows breast cancer incidence is directly proportionate to age, the incidence increases as the age increases. It was observed that patients of age bracket 20 – 29 has the least breast cancer incidence and the cases increases with ages and attained a peak of 176 cases at age range of 50 – 59, before decreasing at the ages 60 and above. The risk of contracting breast cancer get higher as we grow and become lesser at older ages.

Discussion

Breast cancer is a global health concern with a significant impact on the well-being of women. Worldwide, the past several decades have witnessed changes in the incidence and mortality of breast cancer. The epidemiology of breast cancer has been deeply and constantly investigated over the decades. Understanding the epidemiological characteristics of breast cancer including its incidence, prevalence, and mortality across different demographic and geographic aspects, as well as identifying the risk factors, could facilitate the development of proper public health policies**.** Breast cancer is gender specific with 99.49% of the reported incidence being the female gender while the male gender represents only 0.51% of the incidences as recorded in Zamfara State. Age is the most important risk factors for breast cancer patients.

The analysis showed a statistically significant stepwise increase in proportion of patients with age. Nicole et al., 2020 reports that breast cancer in women who has menopause after the age 50 years, has an increased risk of breast cancer, compared to women whose menses stop early. Also, the risk of breast cancer increases by about 3 %, for each additional year, from the presumed age of menopause (Adnane et al., 2015). Age is the most important risk factor for breast cancer. This disease is rare in women under 30 years old, the risk increases from 50 years old. The risk of breast cancer increases with the level of breast tissue density in mammography. For women with dense breasts in mammography, the risk is multiplied by two to six times (Lakote et al., 2011). This increase in risk is independent of the effect of other risk factors. It is estimated that 30% of breast cancer cases are attributable to breast mammography density greater than 50 % of the overall average (Adnane et al., 2015).

Conclusion

The prevalence of cancer is highly significant issues in clinical oncology. Cancer data available in Nigeria are hospital based; it is obvious that cancer incidence and deaths in Nigeria are increasing from year to year. However, majority of the Common Cancers are preventable or curable if detected early. Despite these, Nigeria government is putting very little effort towards cancer diagnosis and management especially in developing state like Zamfara, there is need for the government to put more effort in cancer management and sensitization.

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