

Original article

Frequency and Risk Factors of Breast Cancer in Karachi, Pakistan

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Abstract

Objective: To determine the frequency and risk factors of breast cancer in different hospitals in Karachi.

Methods: Different hospitals dealing with cancer related diseases were selected for the study, the main focus was to study the frequency patterns and risk factors common among women.

Results: The study was based on 115 patients. Age wise distribution on the basis of marital status, family history, treatment, other types of cancers, breast feeding and the reasons for breast cancer in those patients were studied.

Conclusion: In this study, the maximum number of cases is falling in the age group 41-50. It is recommended to women with cancer risk factors to perform breast cancer screening tests earlier.

Introduction

Breast cancer is a kind of cancer that develops from breast cells. Breast cancer usually starts off in the inner lining of milk ducts or the lobules that supply them with milk. A malignant tumor can spread to other parts of the body. A breast cancer that started off in the lobules is known as lobular carcinoma, while one that developed from the ducts is called ductal carcinoma.^[1]

Breast Cancer poses a serious health risk for women throughout the world. More than one million women worldwide are diagnosed with breast cancer every year. It is estimated that 1 in 9 Pakistani women will develop breast cancer at some stage of their life ^[2]. In Pakistan, BC is an enormous public health concern as its incidence is alarmingly high and mortality is the highest in any Asian population (Bhurgrri et al., 2000; Bhurgrri et al., 2007; Sohail and Alam, 2007).

In Pakistan, breast cancer is becoming the leading cause of cancer deaths among women. The fatality rate among breast cancer sufferers is much higher in Pakistan than other Asian country. Contrary to international studies, young women, usually aged between 20 to 35 years, are more frequently

reporting with breast cancers, that too at delayed stages, to hospitals in Karachi. This is quite alarming and serious, yet the exact cause is unknown, Unfortunately since breast cancer is believed to have a late onset i.e., at the age of 40 or later hence they rarely focus on self-examination or other diagnostic options. Changes in that peculiar part of body, despite being obvious, are largely ignored, illogical shame and embarrassment, besides sense of contrition that prevented patients to share their suffering from their dear ones^[3].

The main causes of breast cancer

Getting older - the older a woman gets, the higher is her risk of developing breast cancer; age is a risk factor. Over 80% of all female breast cancers occur among women aged 50+ years (after the menopause).^[1]

Genetics - women who have a close relative who has/had breast or ovarian cancer are more likely to develop breast cancer. If two close family members develop the disease, it does not necessarily mean they shared the genes that make them more vulnerable, because breast cancer is a relatively common cancer.^[1]

The majority of breast cancers are not hereditary.^[1] Women who carry the BRCA1 and BRCA2 genes have a considerably higher risk of developing breast and/or ovarian cancer. These genes can be inherited. TP53, another gene, is also linked to greater breast cancer risk.^[1]

A history of breast cancer - women who have had breast cancer, even non-invasive cancer, are more likely to develop the disease again, compared to women who have no history of the disease.^[1]

Having had certain types of breast lumps - women who have had some types of benign (non-cancerous) breast lumps are more likely to develop cancer later on. Examples include atypical ductal hyperplasia or lobular carcinoma in situ.^[1]

Dense breast tissue - women with more dense breast tissue have a greater chance of developing breast cancer.^[1]

Estrogen exposure - women who started having periods earlier or entered menopause later than usual have a higher risk of developing breast cancer. This is because their bodies have been exposed to estrogen for longer. Estrogen exposure begins when periods start, and drops dramatically during the menopause.^[1]

Obesity - post-menopausal obese and overweight women may have a higher risk of developing breast cancer. Experts say that there are higher levels of estrogen in obese menopausal women, which may be the cause of the higher risk.^[1]

Height - taller-than-average women have a slightly greater likelihood of developing breast cancer than shorter-than-average women. Experts are not sure why.^[1]

Alcohol consumption - the more alcohol a woman regularly drinks, the higher her risk of developing breast cancer is.^[1]

Radiation exposure - undergoing X-rays and CT scans may raise a woman's risk of developing breast cancer slightly. Scientists at the Memorial Sloan-Kettering Cancer Center found that women who had been treated with radiation to the chest for a childhood cancer have a higher risk of developing breast cancer.^[1]

HRT (hormone replacement therapy) - both forms, combined and estrogen-only HRT therapies may increase a woman's risk of developing breast cancer slightly. Combined HRT causes a higher risk.^[1]

Methodology

A questionnaire related to breast cancer was designed for the study of its frequency and risk factors. The demographic, social, menstrual, reproductive and genetic histories were included in the questionnaire. Different hospitals dealing with cancer related diseases were selected for the study. One hundred and fifteen female patients were interviewed at different hospitals in Karachi. Information was compiled on the pre-designed questionnaire. Additional information was also obtained from the relatives of the patients if some clarification or confirmation was required. It was observed that some patients were married and some were unmarried. Only few patients had family history of breast cancer, and most of the patients had received their breast cancer treatment, some of the patients had breast feed their babies and the causes of breast cancer were also studied. Some patients had late diagnosis due to which in some cases the breast cancer was spread in some other organs of the body. Recurrence of breast cancer was also observed in some cases after the treatment.

Results

The statistical analysis was done on the basis of various factors including age, marital status, treatment, family history, metastasis and reasons. Different factors associated with breast cancer given in table 1 and figure 1-6.

Table 1: Different factor associated with breast cancer with percentages

Factors		Total	% age
Marital Status	Married	106	92.17391
	Unmarried	9	7.826087
History	NO	84	73.04348
	YES	31	26.95652
Treatment	Chemo	50	43.47826
	Radiation	11	9.565217
	Others	37	32.17391
	chemo,radiation and other	16	13.91304
Othercancer	NO	84	73.04348
	YES	31	26.95652
Breastfeeding	NO	31	26.95652
	YES	84	73.04348
Reason	unknown	49	42.6087
	birth control pill	32	27.82609
	Hormonal imbalance	18	15.65217
	Infertility treatment	8	6.956522
	Exposure to radiation	8	6.956522

Figure 1: Age wise distribution on the basis of marital status. Out of 115, 106 were married and 9 were unmarried. For this study, the maximum number of cases is falling in the age group 41.

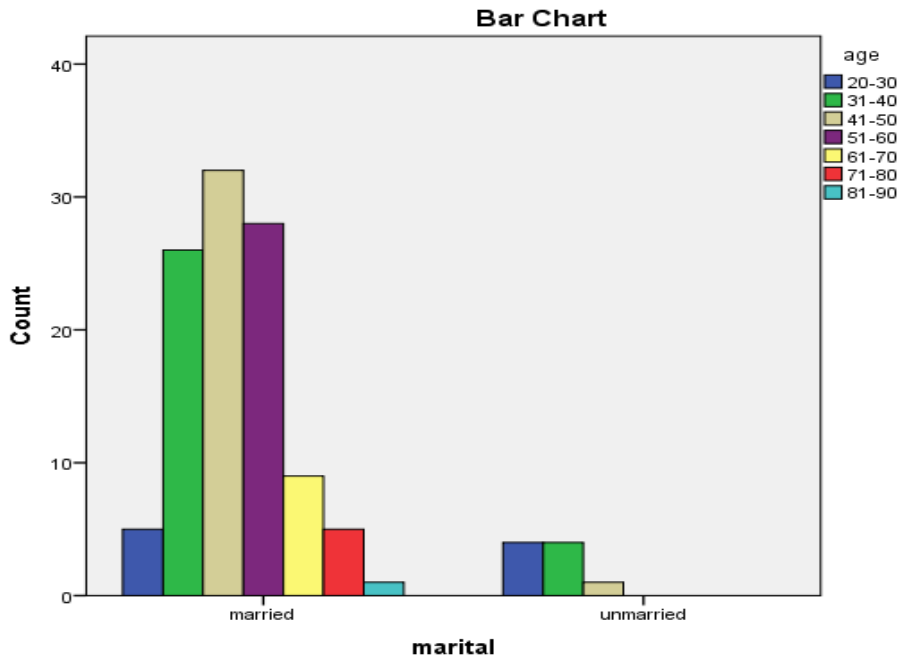


Figure 2: Age wise distribution on the basis of family history. Out of 115, 84 patients had no family history of breast cancer; however only 31 patients had family history of breast cancer for this study, the maximum number of cases is falling in the age group 41-50.

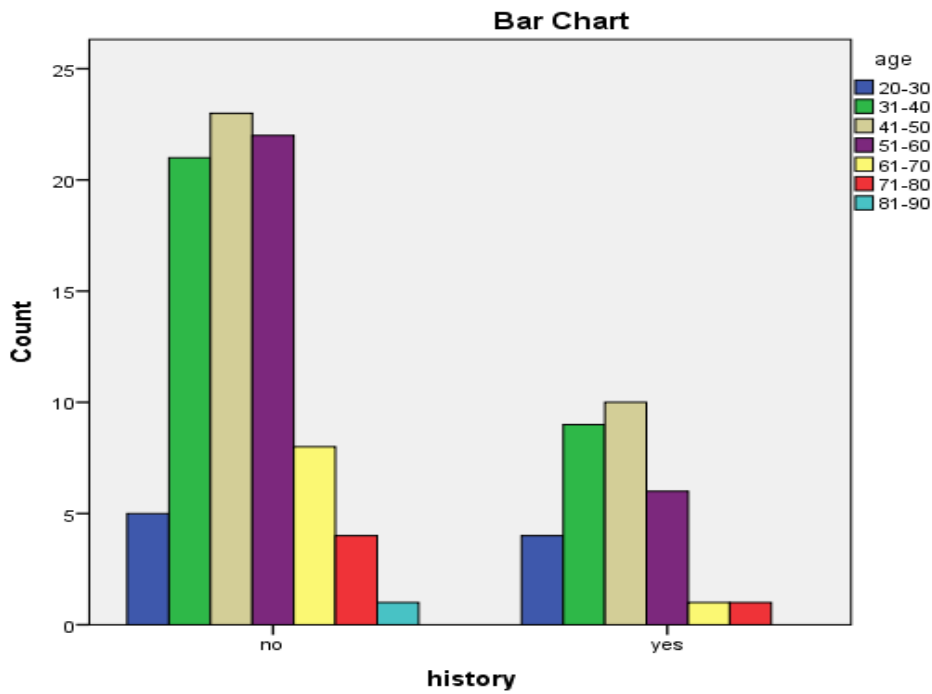


Figure 3: Age wise distribution on the basis of treatment. Out of 115, 50 patients had received chemotherapy, 11 patients; radiation, 37 patients received other treatment and 16 patients received both treatments. For this study, the maximum number of cases is falling in the age group 41-50.

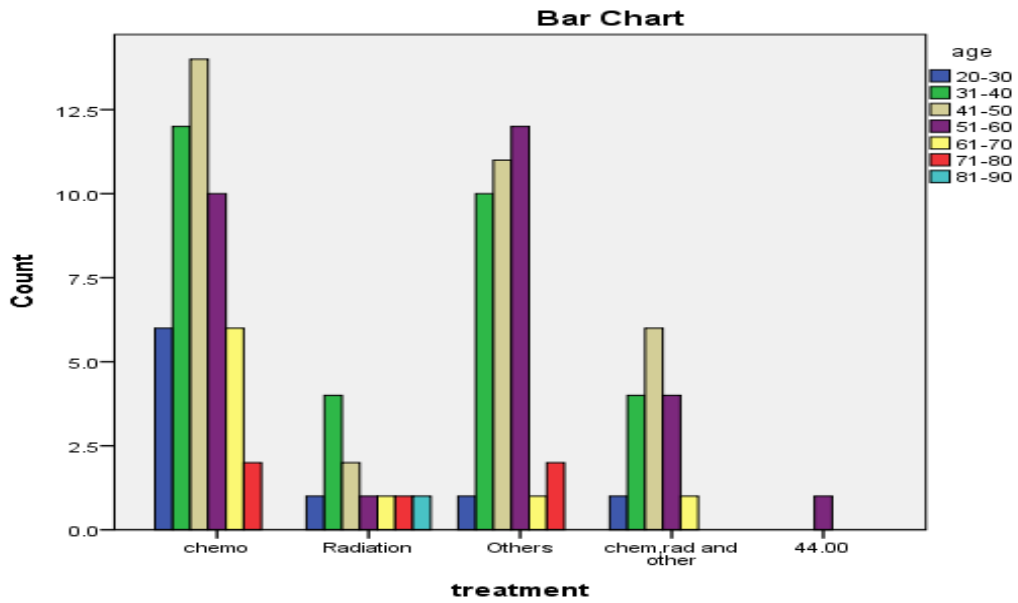


Figure 4: Age wise distribution on the basis of other types of cancers. Out of 115, 31 patients had other than breast cancer and 84 had none other type of cancer. For this study, the maximum number of cases is falling in the age group 41-50.

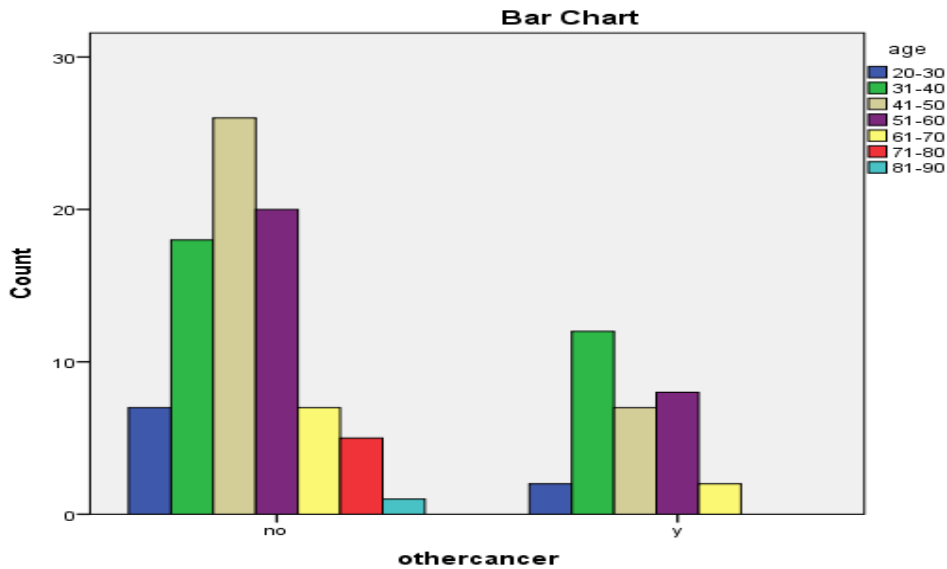


Figure 5: Age wise distribution on the basis of breast feeding. Out of 115, 31 of the patients did not breast feed their babies while 84 had breast feed their babies. For this study, the maximum number of cases is falling in the age group 41-50.

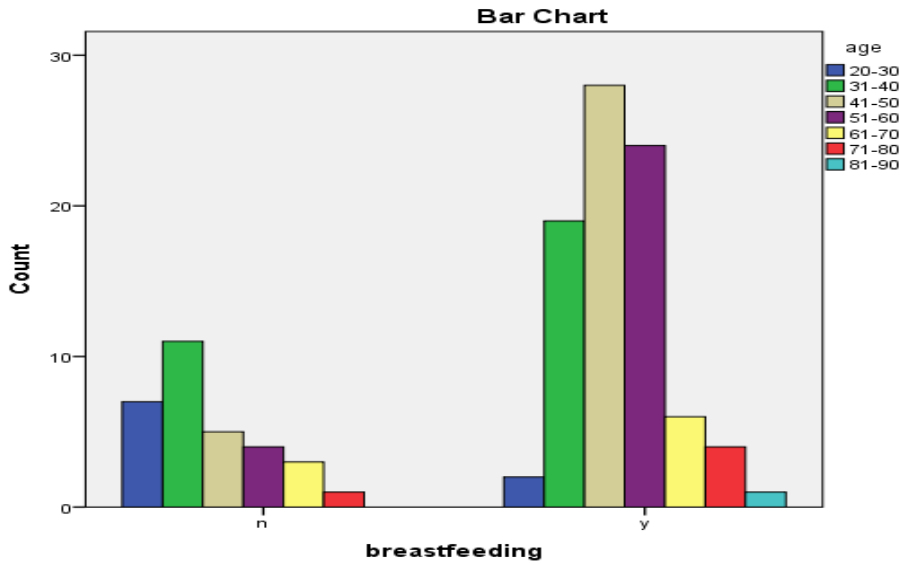
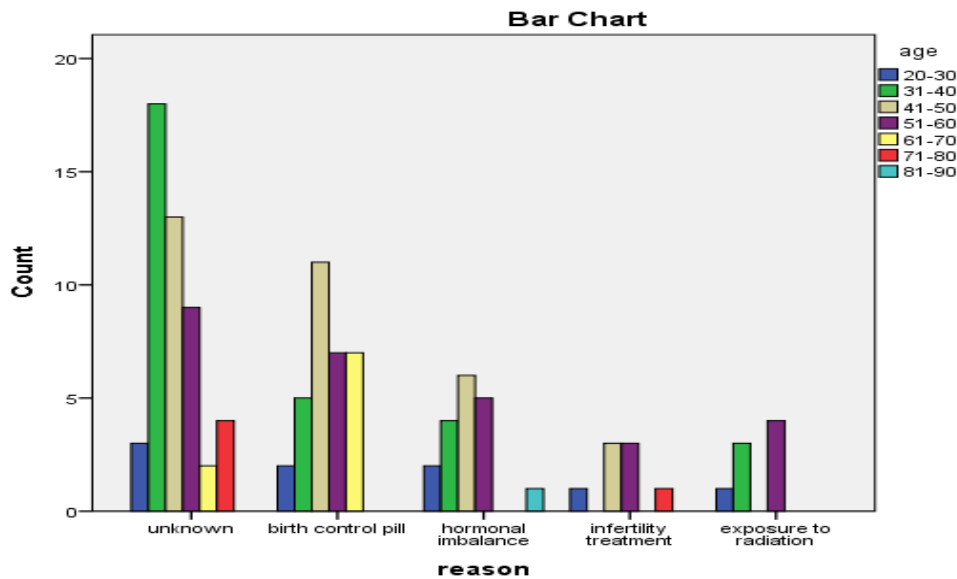


Figure 6: Age wise distribution on the basis of reasons for breast cancer. 49 patients had unknown cause of breast cancer, 32 patients had taken birth control pills, 18 had hormonal imbalance, 8 received infertility treatment and 8 had exposure to radiation. For this study, the maximum number of cases is falling in the age group 41-50.



Discussion

By using SPSS software we conclude the result using chi square in which p value less than 0.005 in case of breast cancer in different age group when compare with marital status the result shows highly significant result with degree of freedom 6 and p value 0.001. In case of breast cancer in different age group when compare with history the result shows non significant result with degree of freedom 6 and p value 0.704, different age group when compare with treatment the result shows non significant result with degree of freedom 24 and p value 0.541. In case of breast cancer in different age group when compare with presence of other cancer the result shows non significant result with degree of freedom 6 and p value 0.469, different age group when compare with breast feeding the result shows highly significant result with Degree of freedom 6 and p value 0.005 (Table 2).

Table 2: Statistical values of Chi square

Relationship between	Chi-Square Value	df	p value
Age group vs Marital status	22.694	6	.001
Age group vs history	3.801	6	.704
Age group vs treatment	22.644	24	.541
Age group vs other cancer	5.601	6	.469
Age group vs breast feeding	18.539	6	.005
Age group vs reason	36.127	24	.053

In this study factors like age, marital status, breast feeding, metastasis and the treatments were studied. A woman’s risk of breast cancer is increased if she has a first degree relative who developed the disease before the age of 50, and the younger the relative when she developed breast cancer the greater the risk (Faheem, 2007) [4]. It strongly suggests genetic influences in BC development in our population. However, it is a proxy measure for both hereditary factors as well as common environmental or behavioral exposures. That may underlie cancer risk. Our study findings showed higher risk of BC among married women and age group lie between 41-50. This study confirms positive family history of breast cancer and late age at natural menopause as breast cancer risk factors. Therefore, it is recommended to women with these risk factors to perform breast cancer screening tests earlier. In summary, our findings suggest that only few of the reproductive factors may play an important role in the development of breast cancer among our population compared to the Western populations. The discrepancies between

our findings and other studies might be due to the different characteristics of Pakistani women that merit further investigation to further clarify the role of all the risk factors and obtain a deeper insight into the breast cancer epidemic in Karachi. Breast screening programs like mammogram, may also be very effective in early detection of the disease but this imaging technique is very expensive and, therefore, is not affordable for the most part of the population. Breast self- examination (BSE), is the simplest mode to check one-self monthly. Trained physicians and nurses at Health Centers can teach the women, how to perform this vital and easy breast self-examination once a month.

The public awareness of this disease may help in early detection of breast cancer, decreasing the mortality and ultimately increasing the probability of survival. If breast cancer is detected at an early stage, it is curable and may be treated better [5]. Therefore women must be made well acquainted with the symptoms of the problems of breast cancer. Special programs like seminars, lectures and screening programs may be arranged to educate the women in this regard.

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