

**Factors associated with delayed presentation among women with breast cancer**

**ABSTRACT:-**

**Purpose:** Breast cancer in women is one of the most common tumors in women worldwide. Throughout Pakistan, there have been multiple reasons that cause a delay in the presentation of breast cancer and many reasons are neither reported nor studied. The objective of our study is to provide detailed estimates on the prevalence and causes of delays in order to plan targets for intervention.

**Material Methods:-** This is a Quasi-Experimental study done at Department of General surgery, Shaheed Benazir Bhutto Medical College, Lyari Karachi from September 2018 to August 2020. We recorded the histories of 200 women by conducting structured interviews after their written consent and noted their mean age, standard deviation, early symptoms, and reasons for delayed presentation. Only patients who discovered their symptoms are included in the study. We then conducted the analysis on early and advanced stage patients using SPSS Version 20.

**Results: -** The mean patient's age was  $44.2 \pm 4.13$  years, where 200 females were observed with a maximum age of 70 years and minimum age of 20 years in our data. Approximately 49% of breast cancers were advanced stage and about 69% had a rural residence, while painless bump was observed in 91% of women, hospital distance was less and more than 60 minutes and that's has hindered presentation too. Similarly, about 71.2% of breast cancer patients presented with advanced-stage disease. We observed the most common factor to be a painless lump and misdiagnosed first visit.

**Conclusion:-** Our study concludes that distance, rural residence, painless breast lump, and misdiagnosis are the most common reason of delay presentation by the patients and should be intervened.

**Key words;- :** Breast cancer, delayed Presentation, mammography, early and advanced stage.

## **INTRODUCTION**

Every year about 522,000 women die due to breast cancer worldwide and has become a dominant cause of death rate in women.<sup>1</sup> Breast cancer is known to occur when cells in the breast go out of control and the most common of all cancers is invasive ductal carcinoma however other common kinds include Paget's disease, external icon medullary, mucinous, and inflammatory breast cancer. It has become a growing social problem in many communities as the global incidence has increased to about 12.5% (i.e. one out of 8 women) suffer from it.<sup>2</sup>

Due to the high mortality rate in women, diagnostic procedures are of prime importance for breast cancers because many people visit for consultations in advance stages of the disease. Many people present late due to fear of cancer, educational background or lack of support from family and friends and some don't have access to medical facilities.<sup>3</sup> Breast cancer is examined by a visual inspection with patients sitting upright and changes in nipples, asymmetry, skin dimpling, erythema, and obvious masses are noted in the patient. Therefore, the aim of this study the factors associated with delayed presentation among women with breast cancer so that strategies may be formulated to screen the patients timely in order to prevent ailments.

### **Material and Methods:-**

The detailed study was conducted in General surgery, Shaheed Benazir Bhutto Medical College, Lyari Karachi, and a total of 200 women with breast cancer from September 2018 to August 2020 were included in the study. Further to this, patients with pathologically confirmed breast cancer were included in the study. (self-discovered only). We collected the data using personal interviews before and after surgery from patients after taking written consent from each patient. Data about sociodemographic and socioeconomic factors, health behavior, medical history, past mammograms, family history, etc. was asked and recorded. Patients' first indication of breast lumps, pain discharge, and change of breast shape or size was discussed and noted too. Finally, we compiled the data and noted the mean age, age brackets, standard deviation, follow-

up records, and factor of delay details. All the data was utilized to analyze the results statistically by SPSS Version 20.

## **RESULTS:-**

In our results, a total of 200 females were diagnosed with breast cancers with mean age (SD) of 44.2year (13.96). Table-1 We observed that majority of the women about 19% were falling in the age bracket of 32- to 37-year-old. In contrast, the maximum and minimum age noted were 70 and 20 years old, respectively. After screening by mammography, about 51% were at an early stage and 49% were at an advanced stage of cancer.

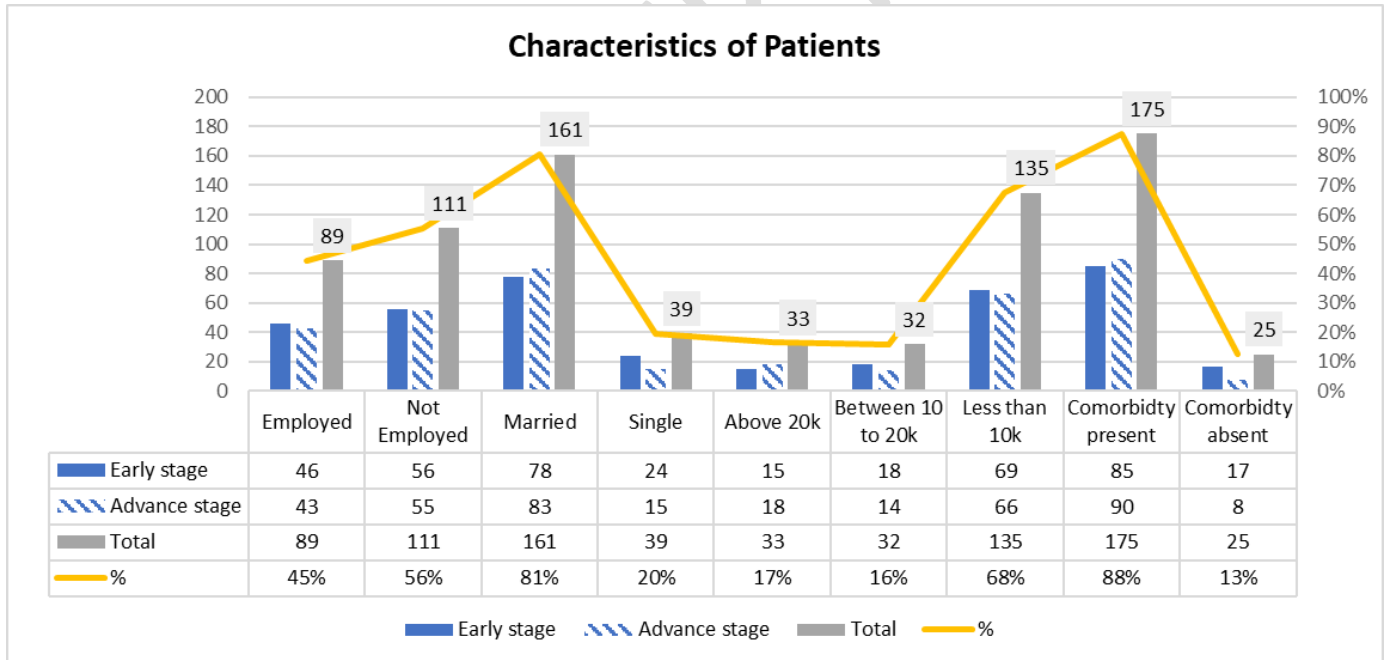
About 45% of patients were employed and 56% were unemployed and 81% were married out of which 68% were earning below 20,000 and 16% were earning between 10k to 20k while 17% were earning above 20k monthly. It was also observed that patients that got diagnosed at an early stage were 51% and 49% had reached the advanced stage of cancer. We also noticed that patients with comorbidities were 88%. Patients who were from a rural residence were 1.0 times more likely to be in their advanced stage than the women residing in urban areas. Amongst the notable factor of delayed presentation, the presence of painless breast lump was approximately in 91% of patients with 1.02 times likely to be at an early stage at presentation. (Table-2).

A distance greater than 60 minutes from hospitals to patients' residences was associated with 45% of advanced-stage breast cancer patients while only 3% showed advance stage symptoms with distance less than 60 minutes. Some of the patients with the delayed presentation were the ones who were misdiagnosed at the first visit making 91% of cases altogether with 46% in early and 45% in advanced stages of cancer. It was also noted that patients who delayed more than 3 months in the presentation have 56% cancers while women who presented within or less than 3 months have 20% advanced stage cancers only (Table-2).

**Table-1:** Demographics of Patients

| Demographics | Variable          | Total Population    |
|--------------|-------------------|---------------------|
|              | Mean Age $\pm$ SD | 44.2 $\pm$ 13.96    |
|              | Max               | 70                  |
|              | Min               | 20                  |
|              | Gender , No (%)   | Female: 200 ( 100%) |

**Figure-1: Characteristics of Patients with Breast Cancer**



**Table-2: Factors associated with delayed presentation**

| Factors for Delayed Presentation   | Stages at Diagnosis |         |
|------------------------------------|---------------------|---------|
|                                    | Early               | Advance |
| <b>Employment Status</b>           |                     |         |
| Employed                           | 46                  | 43      |
| Not employed                       | 56                  | 55      |
| <b>Time to Presentation</b>        |                     |         |
| Less than 3 months                 | 47                  | 40      |
| More than 3 months                 | 55                  | 57      |
| <b>Family Income</b>               |                     |         |
| Above 20k                          | 15                  | 18      |
| between 10 to 20k                  | 18                  | 14      |
| less than 10k                      | 69                  | 66      |
| <b>Hospital Distance</b>           |                     |         |
| > 60 minutes                       | 5                   | 93      |
| < 60 minutes                       | 97                  | 5       |
| <b>Painless Breast Lump</b>        |                     |         |
| yes                                | 92                  | 90      |
| No                                 | 10                  | 8       |
| <b>Misdiagnosed at First Visit</b> |                     |         |
| No                                 | 10                  | 8       |
| Yes                                | 92                  | 90      |
| <b>Home Residence</b>              |                     |         |
| rural                              | 66                  | 71      |
| urban                              | 36                  | 27      |

## **DISCUSSION:-**

Women with breast cancer are known to cause delay's in presentation and it has led to second stage cancers and difficulty in survival worldwide.<sup>4</sup>It's observed that especially poorly developed countries have reported long delays.<sup>5-6</sup> In our study, the women presenting with breast cancer have a mean age (SD) of 44.2year (13.96) and the majority about 19% of the women were falling in the age bracket of 32 to 37 years old with a maximum and minimum age of 70 and 20 years old.Elsewhere the mean age was 48.1 with 77% of women falling in above 40 years old age bracket.<sup>4</sup>

Another study conductedby Nasrin and colleagues reported a mean age of 43.7 years with the maximum age of 71 and minimum age of 14 years and most women fell in the age bracket of 40 to 60 in her study While Bariati et al., patients aged above 59 were 50% in his study.<sup>3,7</sup> In our study, we found that 56% of patients reported a delay of more than 3 months and about 28% were at the early stage and 29% at the advanced stage while in Germany, the UK, and Columbia about 17% of patients reported similar delay.<sup>8</sup>

Combining similar studies will give us a percentage bracket of 19% to 32% patients delay presentation of symptoms. However, is noticed that patient delay can vary from place to place which could be either because of patients' health or social conditions also. Thus, we can say breast cancer symptoms evaluation is dependent on personal and social factors which could range from negative experiences at diagnosis to family habits of utilizing healthcare facilities. Similarly, we also found that 91% of patients showed delay in presentation because they were misdiagnosed the first time and according to a study in Africa, misintepretation remained a big reason there too.<sup>9</sup> In previous literature it was noted that women who were from rural areas were 4-times more likely to cause a delay in presentation than urban residence women while in our study it was 2 times more delay was observed in rural women than urban women.<sup>10,11</sup>

**Conclusion:-** Our study concludes that distance,rural residence, painless breast lump, and misdiagnosis are the most common reason of delay presentation by the patients and should be intervened. However, we need to conduct focused awareness programs for the public in the country to avoid the crucial progress to advance stage breast cancers.

## **REFERNECES:-**

1. Gangane N, Anshu, Manvatkar S, Ng N, Hurtig AK, Sebastian MS. Prevalence and risk factors for patient delay among women with breast cancer in rural India. *Asia Pacific Journal of Public Health*. 2016 Jan;28(1):72-82.
2. Ben-Eltriki M, Deb S, Guns ES. Calcitriol in combination therapy for prostate cancer: pharmacokinetic and pharmacodynamic interactions. *J Cancer*. 2016;7(4):391-5.
3. Fouladi N, Barahman M, Amani F, Bahadoram M, Eghbali S. Factors associated with delayed diagnosis of breast cancer; a study in North-West of Iran. *Immunopathologia Persa*. 2019 Sep 8;6(1):e02-5.
4. Tesfaw A, Demis S, Munye T, Ashuro Z. Patient delay and contributing factors among breast cancer patients at two cancer referral centres in Ethiopia: a Cross-Sectional Study. *J Multidisciplinary Healthcare*. 2020;13:1391-5.
5. Gebremariam A, Addissie A, Worku A, Assefa M, Pace LE, Kantelhardt EJ, et al. Time intervals experienced between first symptom recognition and pathologic diagnosis of breast cancer in Addis Ababa, Ethiopia: a cross-sectional study. *BMJ open*. 2019 Nov 1;9(11):e032228.
6. Jedy-Agba E, McCormack V, Olaomi O, Badejo W, Yilkudi M, Yawe T, et al. Determinants of stage at diagnosis of breast cancer in Nigerian women: sociodemographic, breast cancer awareness, health care access and clinical factors. *Cancer causes & control*. 2017 Jul;28(7):685-97.
7. Bairati I, Fillion L, Meyer FA, Héry C, Larochelle M. Women's perceptions of events impeding or facilitating the detection, investigation and treatment of breast cancer. *European Journal of Cancer Care*. 2006 May;15(2):183-93.
8. Piñeros M, Sánchez R, Cendales R, Perry F, Ocampo R. Patient delay among Colombian women with breast cancer. *salud pública de méxico*. 2009;51:372-80.

9. Poum A, Promthet S, Duffy SW, Parkin DM. Factors associated with delayed diagnosis of breast cancer in northeast Thailand. *Journal of Epidemiology*. 2014 Mar 5;24(2):102-8.
  10. Agodirin OS, Aremu I, Rahman GA, Olatoke SA, Akande HJ, Oguntola AS, et al. Prevalence of themes linked to delayed presentation of breast cancer in Africa: A meta-analysis of patient-reported studies. *JCO global oncology*. 2020 May;6:731-42.
  11. Rayne S, Schnippel K, Kruger D, Benn CA, Firnhaber C. Delay to diagnosis and breast cancer stage in an urban South African breast clinic. *South African Medical Journal*. 2019 Mar 7;109(3):159-63.
- 

UNDER PEER REVIEW