

Factors Responsible For Delayed Presentation and Treatment of Breast Cancer

Aliya Zehra,^{1*} Ghansham,¹ Hafiza Noor ul Ain,¹ Saba Qaiser,¹ Sadia Arshad,¹
Bilal Burki¹

ABSTRACT

Objective	To determine the factors responsible for the delayed presentation and treatment of breast cancer in a tertiary care hospital.
Study design	Cross-sectional observational study.
Place & Duration of study	Department of General Surgery, Jinnah Postgraduate Medical Centre (JPMC) Karachi, from December 2024 to May 2025.
Methods	All women with a diagnosis of breast cancer were included. A form was designed to collect the demographic data of the patients. Questionnaire was made to enter the factors responsible for the delayed presentation and treatment. Women who presented three months after the appearance of symptoms and signs of breast cancer were considered as delayed presenters. Data were entered into SPSS version 25. Mean $\pm$ SD were used to report continuous variable and frequency and percentages for the qualitative variables. Chi-square test was applied to determine the association of risk factors with delayed presentation taking p-value <0.05 as significant.
Results	A total of 150 patients were included. The mean age of the women was 45.7 ± 10.4 years. Thirty-seven (24.7%) women aged between 20 – 40-years, 33 (22.0%) 41 - 50, 45 (30.0%) between 50 – 59-year, and 35 (24.0%) over 60-years of age. Thirty-nine women were considered in delayed care seeking group. Twenty-one (53.8%) reported no pain compared to 27 (24.3%) in the non-delayed group ($p < 0.0001$). Majority ($n=33$ - 84.6%) of the patients in delayed group did not show concern about their symptoms whereas 52 (46.8%) patients in the non-delayed group sought consultation ($p < 0.0001$). Access to healthcare significantly contributed to delays as 15 (38.5%) women in the delayed group reported lack of facilities compared to 13 (11.7%) in the non-delayed group ($p < 0.0001$). Most striking observation was the lack of knowledge about breast cancer symptoms among 36 (92.3%) women who presented late compared to 34 (30.6%) in the non-delayed group ($p < 0.0001$).
Conclusion	A quarter of the women with breast cancer presented late for treatment. Absence of pain was reported by many patients. Number of patients ignored the initial symptoms. Lack of knowledge about breast cancer, the value of self-examination, and non-availability of nearby healthcare facility were other significant factors for delay in seeking treatment.
Key words	Breast cancer, Risk factors, Education, Pain, Breast mass.

¹ Department of General Surgery JPMC Karachi.

Correspondence:

Dr. Aliya Zehra ^{1*}
Department of General Surgery
Jinnah Postgraduate Medical Centre (JPMC)
Karachi
Email: aliya_005@hotmail.com

INTRODUCTION:

Breast cancer remains the most frequently diagnosed cancer among women globally and is the primary cause of cancer-related mortality. In 2020, approximately 2.3 million new cases were reported, accounting for about 11.7% of all cancer diagnoses, with over 685,000 deaths.¹ The incidence rates of breast cancer vary significantly between developed and developing countries.²

Breast cancer incidence rates tend to be higher in developed nations, largely due to improved screening practices, early diagnosis, and comprehensive cancer registries.³ In Pakistan, the prevalence of breast cancer is significantly greater; about 2.5 times higher compared to Iran and India. Statistically, approximately one in every nine women in Pakistan will develop breast cancer at some point in their lives.⁴ According to the World Health Organization, breast cancer ranks as the tenth leading cause of death among women in Pakistan, with a mortality rate of approximately 26.76%.⁵

Early detection of breast cancer significantly improves patient outcomes. Unfortunately, in low- and middle-income countries (LMICs), it is more common for women to be diagnosed when the disease has already progressed to an advanced stage.⁶ Achieving earlier diagnosis relies heavily on increasing women's awareness of breast cancer symptoms, enabling them to recognize signs early, seek medical attention promptly, and access appropriate treatment without delay. The fact that most breast cancers in LMICs are diagnosed late underscores the urgent need to identify and address the barriers hindering early detection. Promoting awareness and reducing diagnostic delays are essential steps to improve outcomes for women in these regions.⁷⁻⁹ The objective of the present study was to determine the frequency and factors responsible for the delayed presentation and treatment of breast cancer in women reporting to a tertiary care hospital.

METHODS:

Study design, place and duration: This cross-sectional observational study was conducted in a General Surgery Unit at Jinnah Postgraduate Medical Centre Karachi, from December 2024 to May 2025.

Ethical considerations: Approval from hospital IRB was taken (F.2-81/2025-GENL/370/JPMC) and informed consent obtained from the patients.

Inclusion and exclusion criteria: All female patients who were referred to the general surgery unit with a diagnosis of breast cancer between 25 to 70-years of age were included. Patients having a breast lump due to other causes, such as sarcoma or phyllodes tumor, were excluded.

Sample size estimation: The sample size for the study was calculated by taking estimated prevalence of 39.0%,¹⁰ and desired precision level 8.0%, the calculated sample size was 143 patients. We included 150 patients in this study. Non-probability

consecutive sampling technique was used

Study protocol: A questionnaire was given to all the patients containing questions about demographic profile and statements regarding the factors that can influence the presentation time of breast cancer. They were facilitated in completing the form in case more information or understanding was required by the participants. Patients reporting to the hospital after 3-months of onset of symptoms and signs of breast cancer were labelled as delayed presenters.

Statistical analysis: Data were entered into SPSS v25. For presentation of continuous and qualitative variables mean $\pm$ SD and frequency and percentages were used respectively. Chi-square test was applied to determine the association of risk factors with delayed presentation taking p value <0.05 as significant.

RESULTS:

A total of 150 female patients were enrolled in this study. The mean age of the patients was 45.7 ± 10.4 years. Delayed diagnosis was made in 39 (26.0%) women, Age distribution is given in table I. Most of the women (n=45 - 30.0%) were aged 50 - 59-years followed by 37 (24.7%) in 20 - 40-years of age groups. A family history of breast cancer was present in 47 (31.1%) women. Eight-six (57.3%) had post-menopausal status. Only one woman had stage I cancer. Details are given in table I.

The table II shows various factors linked to the delayed presentation. Among 39 patients who were in delayed presenting group, 21 (53.8%) reported no pain ($p < 0.0001$). Many patients in this group (n=33 - 84.6%) viewed their symptoms as unimportant ($p < 0.0001$). Feelings of embarrassment were reported by 4 (10.3%) women in the delayed group ($p=0.29$).

DISCUSSION:

This study highlighted number of factors that were responsible for the delayed presentation of women with breast cancer. Even those who presented early only one patient had stage I of the tumor. Several studies have indicated an increasing trend towards advanced stage of breast cancer cases among women and in younger age group as noted in our study.¹¹ The mean age of the patients in the present study was 45.7 ± 10.4 years. A study from Pakistan reported mean age of 46.4 ± 11.1 years.¹² Others researchers from Pakistan had a similar experience.^{13, 14}

Table I: Baseline Characteristics

Variables	Number (%)
Age groups	
20-40 years	37 (24.7%)
41-50 years	33 (22.0%)
50-59 years	45 (30.0%)
>60 years	35 (24.0%)
Family history of breast cancer	
Yes	47 (31.1%)
No	103 (68.7%)
Menopausal Status	
Pre-menopausal	64 (42.7%)
Post-menopausal	86 (57.3%)
Residence	
Rural	116 (77.0%)
Urban	34 (22.7%)
Stage of Cancer	
I	01 (0.67%)
II	13 (8.7%)
III	38 (25.3%)
IV	26 (17.3%)
Unknown	72 (48.0%)
Delayed presentation (>3 months)	
Yes	39 (26.0%)
No	111 (74.0%)

In our study, the frequency of delayed presentation was 26.0%. Khan et al reported presentation delay in 39.0% patients while in a study from Ethiopia the frequency was 50.3%.^{10,15} Extended family social interactions common in Pakistan may influence this difference. Face-to-face communication and sharing personal experiences could motivate individuals to seek medical help promptly, even when barriers exist. In our study, many women received support from their husbands or families, encouraging them to visit healthcare facilities after noticing symptoms.

The most common barrier to women seeking medical help, as found in this and other studies, is their perception that their breast symptoms are not serious.^{14,15} This highlights a general lack of awareness about the symptoms and signs of breast cancer and the importance of seeking medical attention promptly. Proper interpretation of these symptoms plays a crucial role, with up to 80% of women potentially motivated to seek help based on how they understand their symptoms. However, women cannot be expected to recognize which symptoms warrant medical consultation without

comprehensive awareness programs. These programs should be designed around women's experiences of breast symptoms and diagnosis, and should be developed and assessed in collaboration with women to ensure they are acceptable and effective.

It is commonly believed that Muslim women may feel hesitant or ashamed to undergo physical examinations when visiting healthcare facilities.^{16,17} In Pakistan, where over 90% of the population is Muslim, this issue does not appear to be widely reported. In our research, only a small number of women expressed concerns about feeling embarrassed or worried about their relationships with their husbands as reasons for delaying medical consultation. Additionally, another study found that such factors were not significantly linked to delays in seeking medical help among women without prior medical history.¹⁸ Feelings of stigma and embarrassment might intensify after a diagnosis is confirmed. The unavailability of healthcare facilities nearby was also a significant factor contributing to presentation delay in our study. Another study

Table II: Factors for Delayed Presentation

	Delayed Presentation		
	Yes (n=39)	No (n=111)	
Had no pain			
Yes	21 (53.8%)	27 (24.3%)	<0.0001
No	18 (46.2%)	84 (75.7%)	
Considered symptoms as unimportant			
Yes	33 (84.6%)	52 (46.8%)	<0.0001
No	06 (15.4%)	59 (53.2%)	
Fear of diagnosis of breast cancer			
Yes	14 (35.9%)	34 (30.6%)	0.54
No	25 (64.1%)	77 (69.4%)	
Feeling of embarrassment			
Yes	04 (10.3%)	06 (5.4%)	0.29
No	35 (89.7%)	105 (94.6%)	
Worry about the relationship with husband			
Yes	02 (5.1%)	0.0 (%)	1.0
No	37 (94.9%)	111 (100%)	
Non-availability of health care facility			
Yes	15 (38.5%)	13 (11.7%)	<0.0001
No	24 (61.5%)	98 (88.3%)	
Lack of knowledge of breast cancer symptoms			
Yes	36 (92.3%)	34 (30.6%)	<0.0001
No	03 (7.7%)	77 (69.4%)	

from Pakistan also reported this issue.¹¹

Research involving larger populations should explore the underlying reasons for the lack of awareness among women in Pakistan. It is crucial to enhance women's understanding of the urgency associated with early diagnosis of breast conditions. Additionally, in low- and middle-income countries, improving access to breast cancer diagnosis and treatment facilities should be a key part of national breast cancer control programs.

Limitations of the study: This was a single center study with small sample from an urban center. A population based study can provide a more holistic evidence for the factors that are associated with the delayed presentation in women with breast cancer.

CONCLUSION:

The frequency of delayed presentation of breast cancer was 26.0% which is a significant proportion. Absence of pain, ignoring initial symptoms, lack of knowledge and absence of nearby healthcare facility were significant factors as reported in this study for the delay.

REFERENCES:

1. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2021;71(3):209-49. doi: 10.3322/caac.21660.
2. Arnold M, Morgan E, Rungay H, Mafra A, Singh D, Laversanne M, et al. Current and future burden of breast cancer: Global statistics for 2020 and 2040. *Breast.* 2022;66:15-23. doi: 10.1016/j.breast.2022.08.010.
3. Naqvi AA, Zehra F, Ahmad R, Ahmad R, Ahmad N, Yazdani N, et al. Awareness, knowledge and attitude towards breast cancer, breast screening and early detection techniques among women in Pakistan. *J Pak Med Assoc.* 2018;68(4):576-86.
4. Khan MA, Shafique S, Khan MT, Shahzad MF, Iqbal S. Presentation delay in breast

- cancer patients, identifying the barriers in North Pakistan. *Asian Pac J Cancer Prev.* 2015;16(1):377-80. doi: 10.7314/apjcp.2015.16.1.377.
5. Shoukat Z, Shah AJ. Breast cancer awareness and associated factors among women in Pakistan: a cross-sectional descriptive study. *Asian Pac J Cancer Prev.* 2023;24(5):1561-70. doi: 10.31557/APJCP.2023.24.5.1561.
6. Birnbaum JK, Duggan C, Anderson BO, Etzioni R. Early detection and treatment strategies for breast cancer in low-income and upper middle-income countries: a modelling study. *Lancet Glob Health.* 2018;6(8):e885-e93. doi: 10.1016/S2214-109X(18)30257-2.
7. Yip CH. Downstaging is more important than screening for asymptomatic breast cancer. *Lancet Glob Health.* 2019;7(6):e690-e1. doi: 10.1016/S2214-109X(19)30190-1.
8. Unger-Saldaña K, Cedano Guadamos M, Burga Vega AM, Anderson BO, Romanoff A. Delays to diagnosis and barriers to care for breast cancer in Mexico and Peru: a cross sectional study. *Lancet Glob Health.* 2020;8:S16. [https://doi.org/10.1016/S2214-109X\(20\)30157-1](https://doi.org/10.1016/S2214-109X(20)30157-1).
9. Siddiqui R, Mehmood MH, Khan NA. An overview of breast cancer in Pakistan. *Discov Med.* 2024;1(1):82. doi: <https://doi.org/10.1007/s44337-024-00089-5>.
10. Khan MA, Hanif S, Iqbal S, Shahzad MF, Shafique S, Khan MT. Presentation delay in breast cancer patients and its association with sociodemographic factors in North Pakistan. *Chin J Cancer Res.* 2015;27(3):288-93. doi: 10.3978/j.issn.1000-9604.2015.04.11.
11. Malik AM, Pathan R, Shaikh NA, Qureshi JN, Talpur KA. Pattern of presentation and management of ca breast in developing countries. There is a lot to do. *J Pak Med Assoc.* 2010;60(9):718-21.
12. Baig M, Sohail I, Altaf HN, Altaf OS. Factors influencing delayed presentation of breast cancer at a tertiary care hospital in Pakistan. *Cancer Rep (Hoboken).* 2019;2(1):e1141. doi: 10.1002/cnr2.1141.
13. Memon ZA, Shaikh AN, Rizwan S, Sardar MB. Reasons for patient's delay in diagnosis of breast carcinoma in Pakistan. *Asian Pac J Cancer Prev.* 2013;14(12):7409-14. doi: 10.7314/apjcp.2013.14.12.7409.
14. Ayaz F, Ayaz S, Furrukh M. Reasons for Delayed Presentation of Women with Breast Cancer. *J Islamabad Med Dental Coll.* 2016;5:187-91.
15. Hassen AM, Hussien FM, Asfaw ZA, Assen HE. Factors associated with delay in breast cancer presentation at the only oncology center in North East Ethiopia: A cross-sectional study. *J Multidiscip Health.* 2021;14:681-94. doi: 10.2147/JMDH.S301337.
16. Elobaid Y, Aw TC, Lim JNW, Hamid S, Grivna M. Breast cancer presentation delays among Arab and national women in the UAE: a qualitative study. *SSM Popul Health.* 2016;2:155-63. doi: 10.1016/j.ssmph.2016.02.007.
17. Abo Al-Shiekh SS, Alajerami YS, Abushab KM, Najim AA, AlWaheidi S, Davies EA. Factors affecting delay in the presentation of breast cancer symptoms among women in Gaza, occupied Palestinian territory: a cross-sectional survey. *BMJ Open.* 2022;12(10):e061847. doi: 10.1136/bmjopen-2022-061847.
18. Al-Azri M, Al-Rubaie K, Al-Ghafri S, Al-Hinai M, Murthi Panchatcharam S. Barriers and Attitudes toward Breast Cancer Screening among Omani Women. *Asian Pac J Cancer Prev.* 2020;21(5):1339-47. doi: 10.31557/APJCP.2020.21.5.1339.
19. Salem H, Daher-Nashif S. Psychosocial Aspects of Female Breast Cancer in the Middle East and North Africa. *Int J Environ Res Public Health.* 2020;17(18):6802. doi: 10.3390/ijerph17186802.
20. Baloushah S, Salisu WJ, Elsous A, Muhammad Ibrahim M, Jouda F, Elmodallal H, et al. Practice and Barriers toward Breast Self-Examination among Palestinian Women in Gaza City, Palestine. *Sci World J.* 2020;2020:7484631. doi: 10.1155/2020/7484631

Received for publication: 22-09-2025

Sent for revision: 09-10-2025

Accepted after revision: 12-10-2025

Source of funding: Nil

Disclosure: None

Use of Artificial intelligence: AI app was not used.

Authors' contribution:

Aliya Zehra: Conceived, designed and wrote the manuscript.
Ghansham; Manuscript review.

Hafiza Noor ul Ain: Data collection and analysis.

Saba Qaiser: Data analysis and manuscript writing.

Sadia Arshad: Data collection and review of manuscript.

Bilal Burki: Manuscript review.

Data availability: Corresponding author may provide data on request.

How to cite this article?

Zehra A, Ghansham, Ain HN, Qaiser S, Arshad S, Burki B. Factors responsible for delayed presentation and treatment of breast cancer. J Surg Pakistan. 2025;30(3):86-91.

All authors are responsible for the revision of article and its content.

Ethics statement: Institutional review board approval was taken and informed consent was obtained.

Competing interest: Authors declare that they do not have any competing interest.

This is an open access article distributed in accordance with the Creative Commons Attribution (CC BY 4.0) license: <https://creativecommons.org/licenses/by/4.0/> which permits any use, Share — copy and redistribute the material in any medium or format, Adapt — remix, transform, and build upon the material for any purpose, as long as the authors and the original source are properly cited. © The Author(s) 2025