

Factors Associated with Delayed Presentation to the Hospital Among Breast Cancer Patients in Asian Countries: A Review

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ABSTRACT

Introduction:

Breast cancer constituted 13.6% of all reported new cancer in India, with a notable mortality rate due to late presentation. The current research aims to address the extent of delay in presentation to the hospital and the factors that contribute to delayed presentation among breast cancer patients.

Methods:

Comprehensive literature search was conducted through databases, including PubMed. Both quantitative and Qualitative studies were included. The database search yielded 17 articles and 4 articles were obtained through a manual search. The search was narrowed to article between 2014 to 2024 conducted in Asian countries.

Results:

A total of 21 studies were included. Among all the factors from patients and providers Knowledge and awareness about breast cancer is the major factor that contributed to delayed presentation to the hospital among breast cancer females as supported by qualitative studies. Across Asia, various other factors also contribute to delayed hospital presentation, including socioeconomic and demographic factors, cultural beliefs and stigma, healthcare system barriers, psychological and family support, use of alternative and complementary medicines, and physical and geographical barriers.

Conclusion:

Breast cancer is a prevalent cancer. The significant worry lies in delays in seeking medical attention and the tendency for individuals to present at advanced stages.

Keywords: Delayed Presentation, Factors, Determinants, Breast Cancer, Asia

1. INTRODUCTION

Breast cancer stands as a significant global concern, due to its widespread prevalence across the world and a prominent health challenge among women, given its elevated rates of both mortality and morbidity worldwide[1]. Breast cancer was the leading cancer type among females[2]. According to the GLOBOCAN data from 2022, breast cancer accounted for 13.6% (192,020) of all cancer cases in India. Additionally, it contributed to 10.7% (98,337) of all cancer-related deaths[3].

Patients typically seek medical care only when they detect a noticeable, sizable mass or observe secondary changes, such as alterations in the local skin or chest wall. This delay is often exacerbated by

a lack of awareness about the disease, particularly in rural areas[4,5]. Prevailing myths and widespread ignorance in Indian society contribute to an undue fear of breast cancer, often preventing women from seeking timely medical care. This can be attributed to factors such as illiteracy, limited awareness, and financial constraints[6,7].

Women with lower financial means are more likely to experience delays in seeking medical attention[8]. Significant factors contributing to delayed presentation include age, educational background, occupation, place of residence, consultation with traditional healers, the presence of an armpit lump, and concurrent medical conditions[9]. A delay of ≥ 3 months in seeking medical attention was also attributed to the absence of pain or discomfort from breast symptoms[10]. A longer delay in seeking medical attention was significantly associated with reduced survival rates [10,11].

The presentation delay is primarily linked to a multitude of barriers prevalent in the Asian region. These obstacles encompass structural, organizational, psychological, and socio-cultural factors. Moreover, certain cultures in Asia are significantly influenced by traditional medicine, adding another layer of complexity to the situation [12].

Despite extensive research on the factors contributing to delayed presentation in Asia, the findings have been diverse and inconclusive. To address this, we conducted a focused literature review by including literatures which are specifically examining the factors influencing delayed presentation of breast cancer in Asia. Our aim is to establish a research base rooted in a common historical and cultural context within the region, thereby ensuring more coherent and applicable results.

2. MATERIAL AND METHODS

2.1 Search Strategy

Conducted a systematic search of the literature published from 2014 to 2024 in PubMed. Additionally, the reference lists of articles identified as relevant in the electronic searches were hand-searched. The search was conducted using combination of the following keywords: factors, causes, influences, reasons, determinants, predictors, contributors, barriers, breast cancer, breast carcinoma, carcinoma of breast, Cancer of breast, malignant neoplasm of breast, malignant tumor of breast, mammary cancer, delayed presentation, late presentation. For organizing this review, we included quantitative and qualitative studies covering factors associated with delayed presentation to the hospital among breast cancer patients. The detailed search strategies are presented in Supplementary Materials File S1.

2.2 Inclusion and exclusion criteria

The inclusion criteria were as follows:

- A. Original articles written in English,
- B. articles published in scientific journals,
- C. quantitative and qualitative studies, and
- D. studies examining the factors affecting presentation delay to the hospital among female breast cancer patients.
- E. Studies done in Asian countries

We excluded articles that did not meet the inclusion criteria.

2.3 Study Selection and Data Extraction

We examined the abstracts and full text of articles based on the predefined inclusion and exclusion crite-

ria. The extracted data included the following items: author/year, country, study design, study subject, sample size, range or median of delayed presentation, and factors significantly associated with delayed presentation to the hospital. Detailed article selection process is given in Figure 1. 16 quantitative and 5 qualitative study were analyzed (Characteristics of selected articles were given in table 1 and 2). Summary of selected articles is discussed given in Table 3.

Figure 1: Flow chart of article selection process

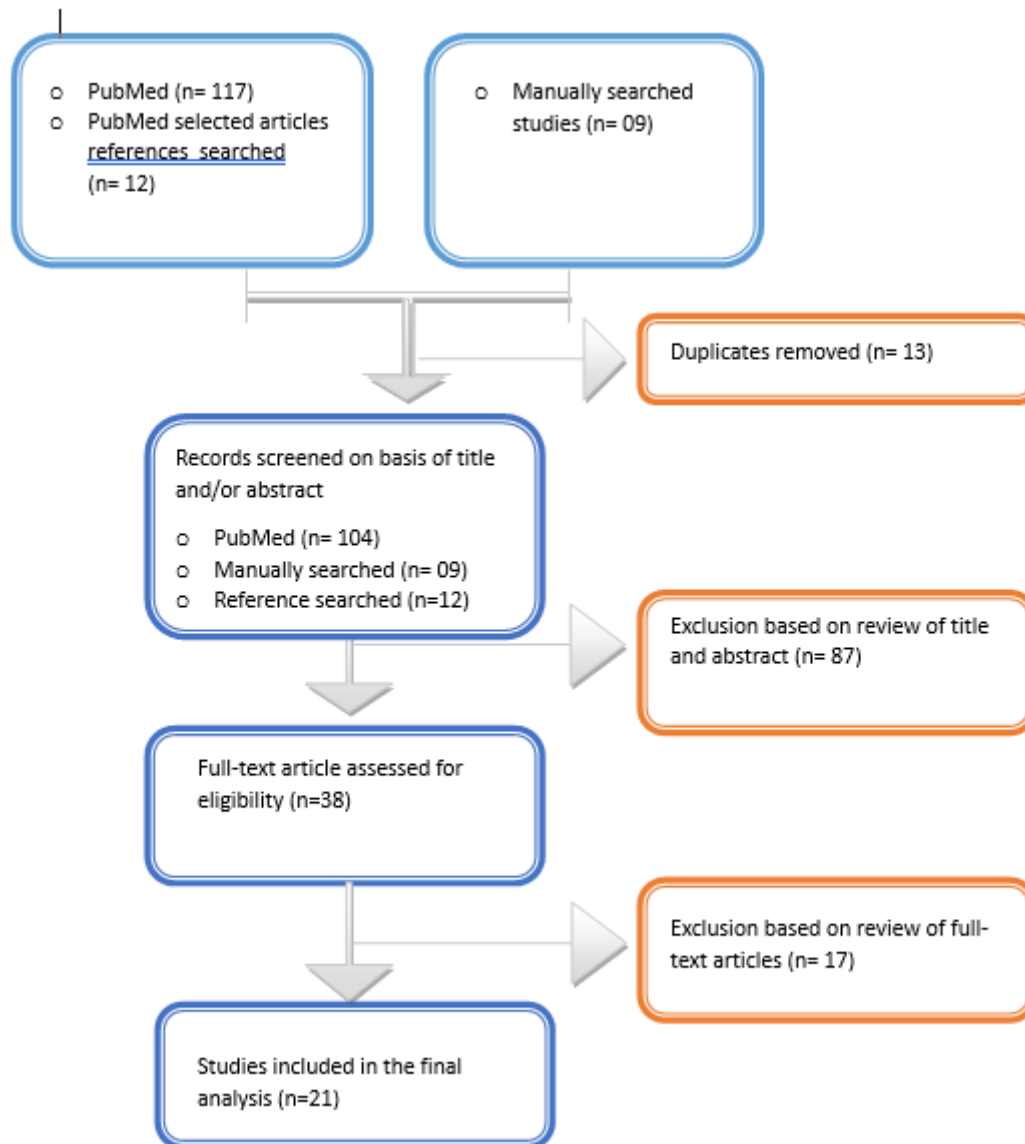


Table 1: Characteristics of quantitative studies (n=16)

S.No.	Author	Year of Publication	Title	Journal Name	Database
1.	Sreekutty S J	2023	Determinants of Patient Delay among Women with Carcinoma Breast	Asian Pacific Journal of Cancer Prevention	PubMed

2.	Alaa Abdulrazzaq Abdulkareem	2023	Factors causing delayed presentations of breast cancer among female patients in Sulaimani Governorate, Kurdistan region, Iraq	BMC Women's Health	PubMed
3.	Jien Yen Soh	2022	Factors associated with delay in seeking care for breast symptoms	BMC Women's Health	PubMed
4.	Susanna Hilda Hutajulu	2022	Delays in the presentation and diagnosis of women with breast cancer in Yogyakarta, Indonesia	PLoS ONE	PubMed
5.	Samira S Abo Al-Shiekh	2022	Factors affecting delay in the presentation of breast cancer symptoms among women in Gaza, occupied Palestinian territory	BMJ Journals	PubMed
6.	Priti Shah	2020	Locally advanced breast cancer: An observational study for the delay in presentation of patients	International surgery journal	Hand searched
7.	Mohammed Al Azri	2020	Knowledge of symptoms, Time to presentation and barriers to medical help seeking among Omani women diagnosed with breast cancer: a cross-sectional study	BMJ Open	PubMed
8.	Shabir Ahmed mir	2019	Reasons for delayed presentation in advance breast cancer patients and how to avoid this: A prospective study at a tertiary care hospital of Northern India	International Journal of medical and biomedical studies	Hand searched
9.	Huaguo Zhang	2019	Patient delay and associated factors among Chinese women with breast cancer	Medicine open	Hand searched
10.	Jamal Kareem Shakor	2019	Women's delay in presenting breast cancer symptoms in Kurdistan - Iraq	Journal of Cancer Research and Therapeutics	PubMed
11.	Faisal Gulzar	2019	Identifying the reasons for delayed presentation of Pakistani breast cancer patients	Caner Management and Research	PubMed

			at a tertiary care hospital		
12.	Khursheda Akhtar	2018	Use of alternative medicine is delaying health-seeking behavior by Bangladeshi Breast cancer patients	European Journal of Breast Health	Hand searched
13.	Noor Mastura Mohd Mujar	2017	Complementary and alternative medicine (CAM) use and delays in presentation and diagnosis of breast cancer patients in public hospitals in Malaysia	PLoS ONE	PubMed
14.	Muhammad Aleem Khan	2015	Presentation Delay in Breast Cancer Patients, Identifying the Barriers in North Pakistan	Asian Pacific Journal of Cancer Prevention	PubMed
15.	Thakur NA	2015	Delay in presentation to the hospital and factors affecting it in breast cancer patients attending tertiary care center in Central India	Indian Journal of Cancer	PubMed
16.	Ayesha Khan	Pakistan	Patient self-delay among women breast cancer	The Journal of Ayub Medical College Abbottabad	PubMed

Table 2: Characteristics of qualitative studies (n= 5)

S.No.	Author	Year of Publication	Title	Journal Name	Database
1.	Nadia Rajaram	2023	Barriers to help-seeking for Malaysian women with symptoms of breast cancer	BMC Health Services Research	PubMed
2.	Ding Yi Ng	2021	Identifying barriers to early presentation in patients with locally advanced breast cancer (LABC) in Northern Singapore	PLoS ONE	PubMed
3.	Celene W. Q. Ng	2020	Presentation of breast cancer, help seeking behaviour and experience of patients in their cancer journey in Singapore	BMC Cancer	PubMed
4.	Yusra Elobaid	2016	Breast cancer presentation delays among Arab and national women in the UAE: a qualitative study	SSM - Population Health	PubMed
5.	Jennifer	2015	Barriers to early presentation of self-	BMJ Open	PubMed

	NW Lim		discovered breast cancer in Singapore and Malaysia: a qualitative multicentre study		
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Table 3: Summary of Studies Investigating Factors Associated with Delayed Presentation to the Hospital Among Breast Cancer Patients in Asian Countries

S.No.	First Author	Country	Research Design	Number of Participants	Observed duration of presentation delay	Affecting Factors
1.	Sreekutty S J	India	Cross-sectional survey	330	33.5% had presentation delay with cut-off period of 3 months	1) non-attribution of symptoms to cancer. 2) fear of the disease and treatment 3) low educational level
2.	Alaa Abdulrazzaq Abdulkarim	Iraq	Retrospective Study	429	44.0% participant presented late (>3 month)	1) Inadequate Knowledge. 2) Did not believed the initial symptoms to be severe. 3) Fear of receiving a cancer diagnosis or being affected by others.
3.	Jien Yen Soh	Malaysia	Cross – sectional study	106	Mean presentation time was 98.91 days. 19.8% participants had delayed presentation of >3 month	1) Interpretation of the symptom as not serious
4.	Susanna Hilda Hutajulu	Indonesia	Observational Study	150	Median delay of 2 month	1) Financial factor (Monthly income of <3,000,000) 2) The symptoms did not bother /caused pain. 3) Consider symptom not serious/cancer/did not require medical attention. 4) Afraid of undergoing

						surgery. 5) Was too busy.
5.	Samira S Abo Al-Shiekh	Gaza, Palestine	Cross-sectional survey	122	Median delay of 14 days	1) Considering the symptom was not serious. 2) Fear of diagnosis with the disease. 3) Lack of pain
6.	Priti Shah	India	Observational study	50	---	1) Higher age group 2) < 8 years of school education 3) Low to middle socio-economic status 4) Education 5) Seriousness of symptom 6) Awareness about breast cancer
7.	Mohammed Al-Azri	Oman	Cross-sectional study	300	---	1) Too scared 2) Worried about what doctor might found out. 3) Too many other things to worry about 4) Too embarrassed 5) Too busy to make time 6) Difficulty arranging transport 7) Difficulty explaining the doctor.
8.	Shabir Ahmed mir	India	Prospective study	31	-----	1) uneducated 2) Unaware about the nature of disease 3) Shy to expose breast to health care persons
9.	Huaguo Zhang	China	Cross – sectional study	283	Median delay of 50 days. 35.8% patients delayed initial presentation ≥ 90 days	1) Knowledge of breast cancer symptoms 2) External health locus of control 3) Breast self-examination or Clinical breast examination 4) Perceived health competence 5) Family support

						6) Pain stimulation 7) Older age
10.	Jamal Kareem Shakor	Iraq	cross-sectional study	323	Median patient delay of 30 days	1) Socio-economic factors: <ul style="list-style-type: none"> • Aged women • Unemployed • Lived out of the city • Widow • Perceived barely self-sufficient economic state 2) Long lactation period 3) Health motivation : Lower health motivation, more likely to delay in presenting symptoms 4) perceived barriers of treatment : High perception of women to barriers of treatment was associated with longer patient delay
11.	Faisal Gulzar	Pakistan	Cross – sectional study	125	88.8% cases of breast cancer presented after > 3 months of delay.	1) Education level 2) Economic status
12.	Khursheda Akhtar	Bangladesh	Cross – sectional study	200	Mean patient delay was 4 months.	1) Use of alternative medicine
13.	Noor Mastura Mohd Mujar	Malaysia	Cross-sectional Study	340	Median time of presentation was 2.4 month, with delay in presentation(> 3 month) rate was 35%.	1) Complementary and alternative medicine (CAM) users were 1.71 times higher odds to delay presentation compared to non-CAM users.
14.	Muhammad Aleem Khan	Pakistan	Cross – sectional study	315	39.01% participant had >3 month delayed	1) Education 2) Socio-economic status

					presentation	
15.	Thakur NA	India	Retrospective study	120	Median time lag of 6 months	1) Residence (rural area) 2) Socio- economic status (lower) 3) Age (older)
16.	Ayesha Khan	Pakistan	Observational s	43	84% patients delayed presentation to ≥ 3 months	1) Older aged 2) Illiterate 3) Poor 4) Rural area 5) Unaware of carcinoma breast as disease
17.	Nadia Rajaram	Malaysia	Mixed-Method Study	303	Median help seeking time of 65 days with 45% help seeking delay by >3 months	1) Lack of knowledge 2) Emotional barrier 3) Optimism 4) Lack of opportunity to seek help due physical and social barriers
18.	Ding Yi Ng	Singapore	Qualitative study	23		1) Knowledge 2) Perception and fear Financial and social reasons
19.	Celene W. Q. Ng	Singapore	Qualitative Study	36	Over half of the women diagnosed with advanced-stage cancer reported delaying medical attention for a period ranging from one month to one year.	1) Awareness and knowledge of breast cancer. 2) Misinformation 3) No family history of breast cancer gave false reassurance 4) Fatality of Breast cancer 5) Perceived pain due to breast cancer screening 6) Caring duties of women 7) Fear 8) Patient personality 9) Traditional and alternative medicine 10) Financial burden 11) Family support
20.	Yusra Elobaid	UAE	Qualitative study	19	3 months to three years	1)Symptom recognition and appraisal 2) Role of community and

						social network 3) healthcare delivery system
21.	Jennifer NW Lim	Singapore Malaysia	Qualitative	67	46% of participants presented at 3 months or later	1) Symptom misinterpretation 2) Information from online sources 3) Attribution of symptoms to cancer 4) Fear of diagnosis and treatment 5) Fear of hospitalization 6) Denial 7) Preference for alternative and traditional medicine 8) Busy with holiday, festival and wedding 9) Financial issues 10) Misinformed by relatives 11) Cultural stigma and marriage issues 12) Fated because of family history of cancer 13) Misdiagnosed by healthcare professionals

3. RESULTS

Altogether 21 studies were identified that originated from different countries Including India, Indonesia, Iraq, Malaysia, Gaza, Oman, China, Pakistan, Bangladesh, Singapore, UAE. Of these 21 studies, 5 were qualitative studies and the rest of the studies were quantitative.

Factors Contributing to Delayed presentation

1. Socioeconomic and Demographic Factors

Several studies have highlighted the role of socio economic and demographic factors in delayed presentation[11–23]. Studies have found that lower socioeconomic status [11–14,16–22], lower educational levels [12–15,18–20,24], and rural residence [12,15,18,20] are significant predictors of delayed presentation among breast cancer patients. A study in China [23] found that older patients often delayed seeking medical treatment, attributing breast cancer symptoms to natural aging or menopause rather than recognizing them as warning signs; similar findings have been observed in other studies across Asia [13,16,20]. Marital status [15,16,18] and employment [14,16] were additional factors contributing to delayed presentation.

2. Cultural Beliefs and Stigma

Cultural beliefs and stigma significantly contribute to delays in seeking care. Lim (2015) identified cultural barriers in Singapore and Malaysia, where women often resorted to traditional healers and perceived breast cancer as a death sentence [17]. Additionally, studies in Singapore found that women, performing multiple roles as mothers, wives, daughters, providers, and friends, often delay seeking medical care due to concerns about burdening their families [21,22]. Women often prefer to endure suffering at home rather than burden their families with the consequences of a breast cancer diagnosis, which is surrounded by sensitivity and silence due to religious and cultural norms that discourage contact between the sexes. These factors collectively contribute to delays in seeking healthcare [25].

3. Lack of Awareness and Knowledge

A recurrent theme across studies is the lack of awareness and knowledge about breast cancer symptoms and the importance of early detection. Studies conducted in India, UAE, Singapore, Malaysia, China, and Pakistan identified lack of knowledge as a barrier to early hospital presentation. Contributing factors include preference for alternative treatments, self-medication, misconceptions about the disease, misinformation from social circles and online sources, and negative family influences providing false reassurance. Additionally, symptoms are often misinterpreted as related to menstruation, breastfeeding, or benign conditions like pimples, soft gel patches, or scars [17,20–23,25–27]. Unawareness about the nature of the disease [13,15,24], lack of knowledge regarding breast self-examination [15,23], longer appraisal time [17,26], and perceived health incompetence [23] were additional factors leading to delayed hospital presentation.

4. Healthcare System Barriers

Healthcare system-related barriers, such as accessibility, affordability, and quality of care, also play a crucial role. Mujar highlighted that in Malaysia, delays were often due to long waiting times and financial constraints [28]. Al-Azri reported similar findings in Oman, where women faced difficulties in accessing specialized care, leading to delayed presentations [14]. The type of referral hospital or medical doctor visited [26], and the absence of female doctors for initial examination or breast assessment [21,25], were also factors contributing to delayed hospital presentation.

5. Psychological Factors and family support

Psychological barriers, including fear and denial, are significant factors causing delays. In Singapore, psychological barriers such as fear of a cancer diagnosis and its implications, along with concerns about the fatality of breast cancer and inadequate family support, were prominent factors contributing to delayed presentation [21,22]. Fear of cancer diagnosis [15,17,21], treatment, intervention [21], dying [22] or abandonment by husbands [25] was observed consistently across studies conducted in Asia. Female reluctance to expose their breasts to others [24], denial [17], fatality of breast cancer [22] contributes to delayed health-seeking behaviors. When individuals disclose their symptoms to someone close to them, they often receive encouragement and assistance to seek medical treatment, reducing the likelihood of delay. High levels of family support can facilitate open communication about symptoms and motivate timely healthcare seeking, positively impacting presentation delays [16,22,23].

6. Use of Complementary and Alternative Medicine

The use of complementary and alternative medicine (CAM) is widespread in many Asian countries and contributes to delays in seeking conventional medical care. In Bangladesh, the use of alternative medicine was associated with a 1.9 times higher likelihood of patient delay [29], while in Malaysia, users of complementary and alternative medicines had 1.71 times higher odds of delaying presentation

compared to non-users [28]. In Singapore and Malaysia, preference for alternative and traditional medicines is often the initial choice for female patients leading to delayed presentation to the hospital [17].

7. Physical and Geographical Barriers

Geographical barriers, including distance to healthcare facilities and lack of transportation, are critical factors. In Indonesia, Hutajulu noted that women in Indonesia from remote areas faced substantial delays due to difficulties in reaching healthcare centers [11].

Studies across Asia show that perceptions of symptoms as not dangerous or serious [11,13], being preoccupied with holidays, festivals, and weddings [17], not recognizing the seriousness of symptoms, lack of pain [30] or other symptoms [21], perceived pain associated with mammograms or other screening tests [22] and other physical and social barriers [27] to seeking help all contribute to delays in presentation. It is seen in Zhang study that pain stimulation promotes early seeking of medical treatment and women were more likely to ignore or tolerate symptom if they were painless [23,30].

4. CONCLUSION

Delayed presentation to the hospital among breast cancer patients in Asian countries is multifactorial, involving socioeconomic, cultural, psychological, and healthcare system-related barriers. Addressing these factors through public health interventions, awareness programs, and improvements in healthcare infrastructure is crucial to encourage timely medical consultations and improve breast cancer outcomes in these regions.

RECOMMENDATIONS

- 1. Awareness Campaigns:** Implement educational programs to raise awareness about breast cancer symptoms and the importance of early detection.
- 2. Healthcare Access:** Improve access to healthcare services, especially in rural and remote areas.
- 3. Cultural Sensitivity:** Develop culturally sensitive interventions to address stigma and promote positive attitudes towards seeking medical help.
- 4. Financial Support:** Provide financial assistance and reduce out-of-pocket expenses for breast cancer patients.
- 5. Psychological Support:** Offer counseling and psychological support to alleviate fear and denial associated with breast cancer.

By addressing these multifaceted barriers, it is possible to reduce delays in presentation and improve the prognosis and survival rates for breast cancer patients across Asian countries.

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