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FREQUENCY AND FACTORS INFLUENCING DELAYED PRESENTATION OF BREAST CANCER

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ABSTRACT

BACKGROUND

Breast cancer is a major cause of cancer-related deaths worldwide, and early detection along with timely treatment is crucial for improving survival. However, many patients face delays in seeking care due to cultural norms, financial constraints, and limited healthcare access. Addressing these barriers is essential to support earlier diagnosis and better treatment outcomes.

METHODOLOGY

This study investigated the frequency and reasons behind delayed presentation in breast cancer patients at the Department of Oncology, Pakistan Institute of Medical Sciences, Islamabad, from March to September 2024. A total of 143 women, aged 18 to 70 years, were enrolled through purposive sampling. A delay was defined as waiting more than three months from noticing symptoms to consulting a healthcare provider. Data were collected using a structured questionnaire and revealed key causes of delay, including reliance on alternative treatments, perceiving symptoms as non-threatening, financial hardships, discomfort with male physicians, cultural or religious influences, traditional family norms, and limited access to healthcare. The findings highlight barriers that hinder timely breast cancer diagnosis and treatment.

RESULTS

Out of the 143 women, 39.9% delayed receiving breast cancer treatment by three months or so. Delays were associated with older age ($p=0.025$), illiteracy ($p=0.006$), higher socioeconomic status ($p=0.011$), and a family history of breast cancer ($p=0.037$). Main reasons were unawareness (47.4%), use of other therapeutic options (43.9%), economic problems (38.6%), and low health institute availability (29.8%).

CONCLUSION

The findings of current study highlight that delayed presentation for breast cancer is shaped by factors like age, education level, socioeconomic status, and family history. Challenges such as limited awareness, preference for alternative treatments, financial barriers, and restricted healthcare access highlight the need for focused efforts. Raising public awareness and enhancing healthcare services are vital to support early detection and prompt treatment.

KEYWORDS: *Breast Neoplasms, Cancer Stigma, Cultural Factors, Delayed Diagnosis, Breast cancer.*

INTRODUCTION

Breast cancer is a significant worldwide health problem, being the most commonly diagnosed cancer worldwide, with an estimated 2.26 million new cases in 2020 [1]. Furthermore, It occupies the foremost rank in cancer-related mortality among females [2, 3]. In 2020, over half of breast cancer diagnoses and two-thirds of related deaths were in less developed regions, challenging the notion of it being exclusive to developed countries [4]. Pakistan has the highest rate of breast cancer in Asia, with one in nine women at risk of diagnosis over their lifetime. Pakistani women reported 34,066 new cases for the year 2018 [5].

Within the Pakistani demographic landscape, the incidence of cancer involving the breast is escalating, compounded by various factors of risk consisting genetic predisposition, hormonal influences, lifestyle variables, and constrained access to early detection and healthcare services [6]. Despite the high incidence, the lack of national screening programs, and a notable deficit in the regular performance of breast self-examinations among the population further compound the challenge of early detection. These deficiencies are underscored by data limitations stemming from an incomplete National Cancer Registry, making it challenging to precisely estimate breast cancer incidence and mortality rates in the country [7,8].

The World Health Organization emphasizes the pivotal role of awareness in improving breast cancer outcomes [9]. However, the prevailing scenario in Pakistan reflects a delayed and often terminal stage diagnosis due to patient delay where a significant portion of women seeks professional healthcare advice only when symptoms have become severe and relentless [10].

Patient delay, a recognized phenomenon globally but particularly pronounced in developing nations, underscores the urgency to comprehend the factors influencing women's hesitancy in promptly consulting concerned professionals [11,12]. Breast cancer, these are just few examples of the reasons for the delay in the presentation of problem. In another study in North Pakistan it was observed that 39.01% of patients presented late among which 40.7% wasted their time by using alternative medicines; 25.2% had no money to visit hospital; 17.1% presented late due to painless lump; 10.6% felt shyness and 6.5% presented late due to other reasons [13]. In a study by Baig M et al, reported the delay between 3 months to more than 1 year, with 44% with delay in 3 to 6 months, 23.5% presented with a delay of 7 to 10 months, 18% presented with a delay of 8 to 12 months and 14.5% patients presented with a delay of more than a year [8]. Reasons for the delay included ignorance for breast cancer (41%), nonavailability of health care services (32.6%), purdah and religious reasons (6.7%), and fear of being ill with cancer (10.1%) [8].

Studying of delayed breast cancer presentation in Pakistan is important for addressing the challenges of late-stage diagnosis, and improving patient outcomes. Delayed presentation, often linked to advanced stages of cancer, minimizes the effectiveness of treatments, and lowers the survival rates. In Pakistan delays are also due to social stigma, cultural practices, fear of diagnosis of cancer and lack of knowledge. The situation is further complicated by financial challenges, limited healthcare infrastructure, & dependence on alternative treatments. This diverse knowledge will enable formulators of guidelines and interventions to design better-targeted interventions, increase awareness of the issue and open more access to identify the diseased people at an early stage to improve the survival and health of Pakistani women.

METHODOLOGY

At the Department of Oncology, Pakistan Institute of Medical Sciences (PIMS) in Islamabad, conducted cross-sectional research, between March 2024 and September 2024. A total of 143 patients were recruited via a purposive non-probability sampling technique.

The participants consisted of female patients aged 18 to 70 years who were receiving treatment for breast cancer at PIMS Islamabad. Patients with diagnoses of breast lumps unrelated to breast cancer—such as cysts, mastitis, or ectasias—as well as those with phyllodes tumors, sarcomas, severe cognitive impairments, or end-stage disease, were excluded from the study. Recruitment was conducted in the oncology outpatient and inpatient departments, with eligibility determined based on predefined inclusion and exclusion criteria. All participants were informed about the study and gave their written consent. Participants' confidentiality was maintained throughout the study. Delayed presentation, defined as a delay of more than three months between the initial recognition of breast cancer symptoms and consultation with a healthcare provider, was assessed retrospectively by examining the patient's diagnostic pathway. The survey consists three segments.

The first section gathered demographic information such as age, residence, marital status, socioeconomic background, employment, education, hospital registration number, and contact details. The second section addressed medical and life history, including menopausal status, menarche, last menstrual period, obstetric history, contraceptive use, smoking habits, BMI, and family history of breast cancer. The third section focused on potential reasons for delayed presentation.

The study identified several factors contributing to delays in seeking medical attention. These included reliance on alternative medicines or traditional healers ("alternative medicine/treatment delay"), perceiving a breast lump as non-threatening due to the absence of pain ("perception of non-threatening lump"), financial difficulties related to low socioeconomic or educational status ("financial constraints/socioeconomic status"), feelings of discomfort or shyness, especially in the absence of female healthcare providers ("shyness/discomfort in consulting male physicians"), the influence of conservative family traditions ("impact of conservative family traditions"), limited availability of healthcare professionals or facilities in the patient’s locality ("availability of doctors in area of residence"), and cultural or religious beliefs that discouraged timely medical consultation ("cultural/religious beliefs"). Participants also had the opportunity to report other reasons for delay, which were documented and analyzed for recurring themes.

Face-to-face interviews were conducted to improve clarity, and responses were recorded to minimize bias. The collected data were securely stored in an electronic database and carefully reviewed for completeness and accuracy.

The SPPS version 26.0 was used to analyse the data. Findings were categorized based on the identified delay factors, providing insights into the frequency and underlying causes of delayed presentation of breast cancer to oncologists.

RESULTS

This study examined 143 women diagnosed with breast cancer, with an average age of 46.57 years (±12.14). Among them, 74.1% were over the age of 40, while 25.9% fell within the 20–40 age group. Most participants (52.4%) had no formal education, while 47.6% had some level of literacy. In terms of marital status, the majority (69.9%) were married, with the remainder (30.1%) unmarried. Socioeconomic status varied, with most participants falling into the middle-income category (46.2%), followed by the upper-income group (29.4%) and the lower-income group (24.5%). A significant proportion of participants lived in urban areas (61.5%), while 38.5% resided in rural regions. Regarding menopausal status, 57.3% of participants were pre-menopausal, while 42.7% were post-menopausal. Additionally, only 19.6% reported a family history of breast cancer, whereas 80.4% had no such history (Table I).

In terms of the timing of healthcare presentation, 60.1% of participants (86 women) sought medical attention within three months of noticing symptoms, while 39.9% (57 women) delayed their visit for three months or more. Younger women aged 20–40 years were more likely to seek early care, with 75.7% presenting within three months, compared to 54.7% of women over 40 years old. Delayed presentation was significantly higher among older participants ($p = 0.025$). Educational background also played a role, as 50.7% of illiterate women delayed seeking care, compared to 27.9% of literate women ($p = 0.006$). Socioeconomic status was another factor, with delays observed in 55.6% of participants from the upper-income group, compared to only 21.9% in the lower-income group ($p = 0.011$). Family history also influenced timing; 57.1% of participants with a positive family history delayed presentation, whereas only 35.7% of those without such a history experienced delay ($p=0.037$). Other variables, including marital status, place of residence (urban versus rural), menopausal status, tumor location, and disease stage, were not significantly associated with the timing of presentation (Table II).

The study also explored reasons behind delayed presentation. The most commonly noted factor was a lack of awareness about breast cancer, reported by 47.4% of participants. The second most common reason was reliance on alternative treatments, noted by 43.9% of women. Financial constraints were also a major barrier, cited by 38.6% of participants. Additionally, 29.8% of women reported limited availability of healthcare services as a reason for their delay, while 14.0% delayed care because they did not recognize the seriousness of a painless lump or were unaware of their condition. Cultural and social factors also played a role, with 10.5% citing shyness as a barrier and 7.0% attributing delays to religious or cultural beliefs (Table III).

DISCUSSION

Late presentation of breast cancer is an important problem, as it has implications for prognosis, treatment, and long-term survival [14]. Various reasons play a role here, and timely diagnosis and intervention are very important which can be done by understanding these factors.

Socioeconomic stature also has an important role to play because limited financial means are normally the first hindrance in the way of timely healthcare access [15]. The high cost of consultations, diagnostics, and treatments leads to the delay of medical advice for women from low-income backgrounds [16]. Moreover, most healthcare facilities are available only in urban regions which worsens the situation as rural women are unable to seek timely treatment.

Delays can also be attributed to cultural beliefs while it is well documented that stigma associated with breast cancer has to add to the delay in accessing health care services. The taboo around breast-related symptoms in certain communities leads to the concept of ignoring or hiding the symptoms experienced by women [17]. The anxiety of being diagnosed with cancer and anticipated stigma can be major barriers away from visiting health facilities in timely manner [18].

Another variable is education, it is also possible that women perceived early symptoms, like a lump or skin alteration, as non-specific and related them to benign causes because of inadequate health literacy. This lack of knowledge indicates the necessity for effective health education campaigns, which stress the significance of early diagnosis [19].

Prolonged waiting times for appointments, misdiagnosis, or nonavailability of specialists are some inefficiencies prevalent in the healthcare system that causes delay in diagnosis and treatment [20]. Furthermore, personal factors, such as prioritizing family responsibilities over personal health, contribute to delayed presentation [21].

In our study, delayed presentation of breast cancer was noted as <3 months (60.1%) and ≥3 months (39.9%) with the distribution of responsible factors for delay were alternative treatment (43.9%), financial issues (38.6%), felt shyness (10.5%), lack of knowledge (47.4%), cultural/ religious beliefs (7.0%), ignorance of disease/painless lump (14.0%), and nonavailability of health care services (29.8%). Baig M, et al, reported that delay between 3 months to more than 1 year, with 44% with a delay in 3 to 6 months, 23.5% with a delay of 7 to 10 months, 18% with a delay of 8 to 12 months, and 14.5% patients presented with a delay of more than a year [8]. The study also reported the reasons for the delay which were lack of knowledge (41%), nonavailability of health care services (32.6%), religious reasons (6.7%), and fear of being ill with cancer (10.1%) [8]. In another study, it was observed that 39.01% of patients presented late among which 40.7% used alternative medicines, 25.2% had financial issues, 17.1% painless lump, 10.6% felt shyness, and other reasons were noted among 6.5% of cases [13].

The findings of this study highlight key sociodemographic and clinical factors contributing to delayed presentation in breast cancer patients, emphasizing the critical role of socioeconomic and cultural barriers. Consistent with prior studies, a significant proportion of patients in this cohort presented at an advanced stage (stage III: 55.9%), suggesting substantial delays in seeking medical care. Delayed presentation was defined as consulting a healthcare provider more than three months after the onset of symptoms, and this delay was significantly associated with socioeconomic status (p=0.011). However, other factors such as BMI, marital status, residential status, menopausal status, and tumor location did not exhibit significant associations with delays, reinforcing findings from previous research that highlight a multifactorial interplay in patient behavior.

This study corroborates earlier investigations in Pakistan and other low- and middle-income countries, where delays have frequently been linked to financial hardships, lack of awareness, and reliance on alternative treatments. For example, Baig et al. described ignorance, economic issues, and limited access to care as important reasons for delays [8]. Similarly, a study reported alternative treatments (40.7%) and cultural barriers (6.7%), including shyness (10.6%) as significant factors [13]. The parallels highlight enduring challenges in patient delay, especially in low-resource contexts where sociocultural complications and healthcare system deficiencies converge to limit timely diagnostics.

The clinical profile of our patients is consistent with worldwide statistics, indicating that patients from developing nations are more likely to be diagnosed at an advanced stage. This highlights the importance of public health initiatives, including community-wide awareness building, accessibility to health care, and culturally appropriate community education programs on early detection and treatment. This study is strengthened by the large range of sociodemographic and cultural factors, to better inform the policy context. The reliance on structured questionnaires, and face-to-face interviews increased the validity and reliability of the data collection and analysis.

But there are some limitations. Selection bias may be created due to the purposive sampling method and the generalizability of study findings is limited due to its single-center attributing features. Validation of these results in larger, multicenter cohorts is required as is evaluation of region-specific variations in patient behavior. In addition, the use of self-reported data increases the risk of recall bias, especially regarding the identification of reasons for delay. Overcoming these limitations by better study designs and more widespread datasets will be key to developing interventions to shorten delays and improve breast cancer outcomes in Pakistan and other similar settings.

CONCLUSION

The findings of current study highlight that delayed presentation for breast cancer is shaped by factors like age, education level, socioeconomic status, and family history. Challenges such as limited awareness, preference for alternative treatments, financial barriers, and restricted healthcare access highlight the need for focused efforts. Raising public awareness and enhancing healthcare services are vital to support early detection and prompt treatment

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Table I: Characteristics of Study Participants (n=143)

Variable	**n (%)**
Age (Mean ± SD) = 46.57 ± 12.14	
20 - 40 years	37 (25.9)
>40 years	106 (74.1)
BMI (Mean ± SD) = 25.95 ± 3.53	
20 - 26 kg/m^2	90 (62.9)
>26 kg/m^2	53 (37.1)
Educational Status	
Illiterate	75 (52.4)
Literate	68 (47.6)
Marital Status	
Married	100 (69.9)
Unmarried	43 (30.1)
Socioeconomic Status	
Lower class	35 (24.5)
Middle class	66 (46.2)
Upper class	42 (29.4)
Residential Status	
Urban	88 (61.5)
Rural	55 (38.5)

Menopausal status	
Pre-menopausal	82 (57.3)
Post-menopausal	61 (42.7)
Tumor location	
Left Breast	77 (53.8)
Right Breast	66 (46.2)
Family History of Breast Cancer	
Yes	28 (19.6)
No	115 (80.4)
Disease stage	
II	58 (40.6)
III	80 (55.9)
IV	5 (3.5)

Table II: Sociodemographic Factors and their Association with Time of Presentation (n=143)

Variables		**Time of Presentation**		**OR 95% C. I**	**P-Value**
		<3 months (n=86)	**≥3 months (n=57)**		
Age Group	20 - 40 years, *n* (%)	28 (75.7)	9 (24.3)	2.575 (1.108----5.981)	0.025
	>40 years, *n* (%)	58 (54.7)	48 (45.3)		
BMI Group	20 - 26 kg/m^2, *n* (%)	55 (61.1)	35 (38.9)	1.115 (0.559----2.227)	0.757
	>26 kg/m^2, *n* (%)	31 (58.5)	22 (41.5)		
Educational Status	Illiterate, *n* (%)	37 (49.3)	38 (50.7)	0.378 (0.188----0.758)	0.006
	Literate, *n* (%)	49 (72.1)	19 (27.9)		
Marital Status	Married, *n* (%)	62 (62.0)	38 (38.0)	1.292 (0.626----2.666)	0.488
	Unmarried, *n* (%)	24 (55.8)	19 (44.2)		
Socioeconomic Status	Lower Class, *n* (%)	25 (78.1)	7 (21.9)	2.102 (1.281----3.449)	0.011
	Middle Class, *n* (%)	41 (62.1)	25 (37.9)		
	Upper Class, *n* (%)	20 (44.4)	25 (55.6)		
Residential Status	Urban, *n* (%)	57 (64.8)	31 (35.2)	1.648 (0.830----3.276)	0.152
	Rural, *n* (%)	29 (52.7)	26 (47.3)		
Menopausal Status	Pre-menopausal, *n* (%)	46 (56.1)	36 (43.9)	0.671 (0.338----1.331)	0.252
	Post-menopausal, *n* (%)	40 (65.6)	21 (34.4)		
Family History of Breast Cancer	Yes, *n* (%)	12 (42.9)	16 (57.1)	0.416 (0.179----0.963)	0.037
	No, *n* (%)	74 (64.3)	41 (35.7)		
Disease Stage	II, *n* (%)	31 (53.4)	27 (46.6)	0.757 (0.410----1.397)	0.204
	III, *n* (%)	53 (66.3)	27 (33.8)		
	IV, *n* (%)	2 (40.0)	3 (60.0)		
Tumor Location	Left Breast, *n* (%)	46 (59.7)	31 (40.3)	0.965 (0.493----1.888)	0.916
	Right Breast, *n* (%)	40 (60.6)	26 (39.4)		