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Breast Self-Examination Practices in Rural India: A Study on Early Breast Cancer Detection

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ABSTRACT

Background: Breast cancer is the most commonly diagnosed cancer among women in India, with a growing burden in rural areas due to limited awareness, cultural beliefs, and poor access to timely care. Breast Self-Examination (BSE), a low-cost and non-invasive method, supports early detection, particularly in low-resource settings. However, many women do not seek care even after receiving BSE training. **Objectives:** To explore the barriers and facilitators influencing healthcare-seeking behaviour among suspected breast cancer cases in rural Rajasthan following a large-scale BSE awareness and training program. **Methodology:** A descriptive qualitative study was conducted in three rural districts of Rajasthan (Pali, Jodhpur, and Jalore) as part of a large-scale breast cancer awareness and BSE training program. Thirteen suspected breast cancer cases who did not seek timely care after program follow-up were purposively selected for in-depth interviews. Data were collected using a semi-structured guide, transcribed, translated, and thematically analysed using NVivo 13 following the Braun and Clarke framework. **Results:** Six major themes were identified: (1) behavioural attributes including low perceived risk and incentive-driven participation; (2) religious beliefs and reliance on spiritual healing; (3) clinical challenges including delayed diagnosis, high out-of-pocket costs, and poor hospital care; (4) health system gaps such as limited diagnostics and weak referral chains; (5) social support from family members and community health workers; and (6) social barriers including patriarchy, stigma, and lack of autonomy. While some women were encouraged by relatives or health workers, most faced personal and systemic challenges that hindered timely care. **Conclusions***:* Awareness and BSE training alone are insufficient to prompt early care-seeking. Deep-rooted beliefs, gender norms, economic hardship, and weak health systems delay timely diagnosis and treatment. Gender-sensitive, community-driven, and system-strengthening interventions are essential to improve rural breast cancer outcomes.

Keywords: Breast Self-Examination, Health-Seeking Behaviour, Breast cancer, Early Detection, Rural Areas.

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Introduction

Breast cancer is the most commonly occurring cancer among women globally and represents a significant public health concern. In 2022, an estimated 2.3 million women were diagnosed, resulting in more than 670,000 deaths worldwide. While breast cancer burden affects both high- and low-income countries, survival outcomes vary dramatically. In countries with limited healthcare resources, women are more likely to die of breast cancer even though the incidence rates are lower, a reflection of delayed diagnosis, limited access to care, and weak screening systems [1].

India exemplifies this disparity. With 178,361 new cases and nearly 90,000 deaths reported in 2020, breast cancer has emerged as the most frequent malignancy among Indian women[2]. According to recent national estimates, breast cancer accounted for 13.5% of new cancer cases and 10% of cancer-related deaths among Indian women in 2020, contributing to over 515 Disability-Adjusted Life Years (DALYs) per 100,000 women in 2016. The burden is projected to rise to 5.6 million DALYs by 2025, underscoring the urgency of preventive and early detection strategies in India [3]. A growing number of women are being diagnosed at a younger age and more advanced stages, particularly in rural areas where awareness and access to timely screening and treatment are limited[4,5]. Even though early detection dramatically improves survival, breast cancer screening programs remain sparse in India's rural health infrastructure.

In this context, Breast Self-Examination (BSE) offers a promising early detection strategy. It is a simple, inexpensive, and non-invasive practice that empowers women to monitor their own breast health, especially crucial in low-resource settings where mammography and clinical examinations are not routinely accessible [6]. However, BSE remains underutilised. Studies from rural India consistently reveal poor awareness and inadequate practice. In a study from Tamil Nadu, although 89% of rural women had heard of breast cancer, only 26% were aware of BSE, and just 5% practised it regularly[7]. Another study in Maharashtra found that while 59% had heard of BSE, less than half could describe how to perform it [8].

Barriers to BSE and timely healthcare-seeking are not limited to knowledge gaps. Cultural beliefs, stigma, hesitation, lack of confidence, and dependence on family members also prevent women from acting on early symptoms [9,10]. These social and systemic barriers are especially significant in rural Indian settings, where gender norms and healthcare access intersect in complex ways. While BSE alone may not reduce mortality, it plays a crucial role in promoting breast health literacy and prompting early healthcare-seeking, which together can reduce delays and improve outcomes [11].

Between 2017 and 2022, a large-scale community-based breast cancer awareness and BSE training initiative was conducted by ICMR-NIIRNCD across three rural districts of Rajasthan: Jodhpur, Jalore, and Pali. The program reached over 157,000 women aged 30–65 with awareness sessions, and BSE training was provided to over 218,000 women. Despite these efforts, baseline assessments showed that less than 1% had any prior knowledge or experience of BSE [12]. Of the women identified as suspected cases during follow-up, many failed to access diagnosis or treatment, even after referral to higher-level facilities. These observations raised a deeper inquiry: What factors influence rural women's decisions to seek or avoid healthcare, even after becoming aware of potential breast cancer symptoms? Understanding these personal, social, and system dynamics is critical in designing effective interventions that bridge the gap between awareness and action. Therefore, this study aimed to explore the perceptions, barriers, and facilitators influencing women's breast self-examination practices and their healthcare-seeking behaviours for early breast cancer detection and treatment in rural Rajasthan.

Methods

This study is reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) 32-item checklist, which is specifically developed for interview-based studies to ensure transparency and completeness in qualitative reporting [13]. The completed checklist is presented in the Supplementary file.

A descriptive qualitative design was employed to generate grounded insights into how rural women in Rajasthan perceive and experience BSE, as well as to identify the barriers and facilitators that influence their health-seeking behaviours related to early breast cancer detection and treatment [14, 15].

This approach aimed to understand how personal, social, and systemic factors interact to shape healthcare-seeking behaviours for breast cancer.

A constructivist/interpretivist paradigm was used as a reference in this study to acknowledge that the realities of participants are shaped by their social, cultural, and personal contexts. This allowed the researchers to understand and interpret women's subjective experiences, including their knowledge, beliefs, emotions, and interactions with the healthcare system [16].

***Study Design and Setting*:** The study was conducted during the 2019-2020 annual session in rural areas of three districts in Rajasthan: Pali, Jodhpur, and Jalore. These areas were part of a larger breast cancer awareness and BSE training program implemented across several blocks[12]. Semi-structured in-depth interviews (IDIs) were used to understand women's perceptions related to BSE. Face-to-face interactions were chosen instead of group discussions to allow participants to speak openly in a private and comfortable setting, considering the sensitivity surrounding breast cancer and self-examination. All interviews were conducted at participants' homes, based on their availability and convenience.

The study received ethical approval from the Institutional Ethics Committee. Ethical approval was obtained from the Institutional Ethics Committee, and the study adhered to the Indian Council of Medical Research (ICMR) guidelines for research involving human participants.

***Participant Selection*:** The participants were a subset of women identified as suspected breast cancer cases during a large-scale community-based breast cancer awareness and BSE training program conducted in rural Rajasthan. During program monitoring and follow-up, it was observed that several women who had been referred to higher-level health facilities for further diagnosis or treatment did not proceed with healthcare[12]. To explore the reasons behind this gap, participants were recruited through purposive sampling for IDIs. Eligible participants included women who had been experiencing symptoms suggestive of breast cancer (such as a breast lump) for at least 30 days, had not initiated or had discontinued treatment despite referral, and had experienced delays in care-seeking due to fear, hesitation, or uncertainty regarding formal healthcare. Recruitment and interviews continued until data saturation was reached, that is, no new themes were emerging from the data, consistent with established guidance on thematic saturation in qualitative research[17]. This resulted in a final sample of thirteen women. These women represented a diverse range of social, emotional, and systemic challenges, aligned with the study's objective to explore perceptions, barriers, and facilitators influencing BSE practices and care-seeking behaviours in rural contexts. The participant selection process is illustrated in Figure 1.

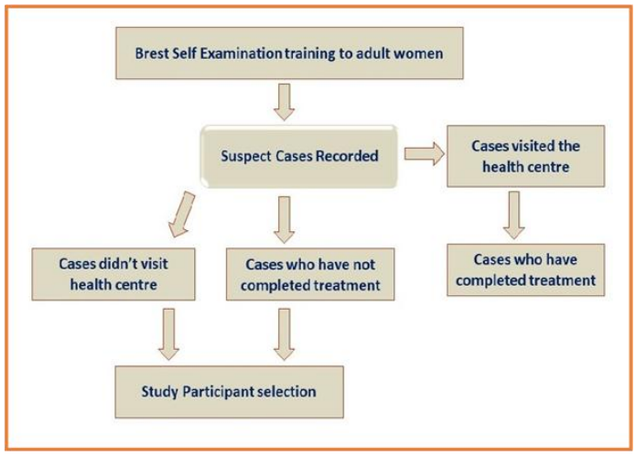


Figure-1: Study participant selection

***Data Collection*:** IDI were conducted in the local language (Marwari/Hindi) by trained researchers at participants' homes, ensuring a familiar and private environment. To build trust and comfort, brief ice-breaking and rapport-building conversations were conducted before each interview began. A semi-structured interview guide was developed from existing literature and refined through expert discussions. All interviews were audio-recorded with participants' consent and lasted approximately 20-30 minutes. Field notes were taken during and immediately after each session to capture contextual details and non-verbal cues. No repeat interviews were conducted. After each session, researchers reviewed the recordings and field notes

to identify emerging insights. To ensure accuracy, a summary of the discussion was read back to participants at the end of the interview for validation and confirmation. Interviews were conducted until data saturation was reached and no new themes emerged. Transcripts were not returned to participants after the interview; however, real-time validation during interviews ensured the credibility and accuracy of the data.

***Data Analysis*:** The recorded interviews were first transcribed in the local language by carefully listening to the audio files and cross-checking them against field notes taken during the sessions. These transcripts were then translated into English. The data analysis process followed the six steps of thematic analysis outlined by Braun and Clarke[18]: (1) getting familiar with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) writing the final report. The coding process, using NVivo 13 software, was employed by a team of two data coders (one Male and one Female), who were part of the research project. Each coder independently read through the transcripts line by line and marked important points that were relevant to the study's objective. This process helped identify common patterns, ideas, and experiences shared by the participants. We employed an inductive approach to derive the themes, meaning that we did not pre-determine the themes beforehand. Instead, themes emerged naturally from the data itself. Both coders discussed the emerging codes and categories together, and themes through multiple rounds of discussion until everyone agreed.

Results

Participant Demographic Characteristics: Table-1 presents the socio-demographic characteristics of the thirteen women who participated in the study. The participants belonged to diverse social groups, including Scheduled Tribes (ST), Scheduled Castes (SC), Other Backward Classes (OBC), and the General category. Most of them were either homemakers or engaged in daily wage labour, and over half of the women interviewed were illiterate. The majority reported an annual household income of less than ₹1.5 lakhs. Participants were between 22 and 60 years of age, with a median age of 33, and all were currently married. While three participants had confirmed breast cancer diagnoses, the rest were suspected cases. One participant also reported a family history of cancer.

Table-1: Socio-demographic Characteristics of Study Participants (N = 13)

Variable	Category	No.	%
Age (years)	Median	33	--
	Youngest participant	22	--
Caste Category	General	3	23.1
	Other Backward Classes (OBC)	2	15.4
	Scheduled Castes (SC)	4	30.8
	Scheduled Tribes (ST)	4	30.8
Educational Status	Illiterate	7	53.8
	Literate (any level)	6	46.2
Annual Household Income	< ₹1.5 lakhs	10	76.9
	≥ ₹1.5 lakhs	3	23.1
Breast Cancer Diagnosis	Confirmed case	3	23.1
	Suspected case	10	76.9
Family History of Cancer	Yes	1	7.7
	No	12	92.3

Emergent Themes: Thematic analysis revealed six key themes that explain the complex barriers to breast cancer care faced by women in these rural communities. The findings show that delayed or inadequate care-seeking was not due to a single factor but rather to the intersection of multiple personal, social, and systemic influences. The six themes identified were: Behavioural Attributes, Devoutness and Religious Beliefs, Clinical Challenges, Health System Constraints, Social Support, and Social Barriers. Each theme includes 2–3 sub-themes, along with associated codes and findings. A detailed overview of the themes, sub-themes, and key insights is presented in Table 2.

Table-2: Summary of Emergent Themes, Sub-themes, and Key Insights

Theme	Sub-theme	Key Insights
1. Behavioral Attributes	*Incentive-Driven Participation*	Many women participated only when they expected a benefit or reward, showing that health actions were often motivated by incentives.
	Low Perceived Need for Preventive Care	Preventive care was not considered necessary unless symptoms were visible or serious.
2. Devoutness and Religious Beliefs	*Healing through Faith*	Some women believed that prayer and spiritual practices could heal them, which delayed their decision to seek medical care.
	Religious Rituals Delaying Medical Care	Some families delayed hospital visits or procedures due to religious rituals, even when timely care was needed.
3. Clinical Challenges	*Delayed or Incomplete Diagnosis*	Some women avoided higher-level hospitals due to long travel, crowded facilities, or lack of trust, leading to missed or incomplete diagnosis.
	High Out-of-Pocket Costs	Many families struggled to afford diagnostic tests and treatments, even at government hospitals, which led to dropping out of care.
	Suboptimal Hospital Experience	Poor conditions, lack of support staff, and informal demands for money reduced trust and discouraged women from continuing treatment.
4. Health System Constraints	Limited Infrastructure and Equipment	Rural health facilities lacked essential equipment and staff, causing delays in diagnosis and further care.
	Fragmented Referral and Follow-up System	Women and families were confused by unclear referral processes and did not receive consistent support while moving through different levels of care.
5. Social Support	Partner Influence	Some women needed their husband's permission or involvement before seeking medical care, which limited their independence.
	Supportive Family Members	Encouragement from family members, especially elders, helped women seek timely diagnosis and treatment.
	Community Encouragement	Support from community leaders, ASHAs, and neighbors helped women feel confident about seeking medical help.
6. Social Barriers	Patriarchal Gatekeeping	In many households, men made the final decisions about women's healthcare, limiting their ability to seek timely care.
	Stigma and Family Conflict	Fear of being judged or causing family tension stopped some women from talking about their symptoms or getting treatment.

Theme 1: Behavioural Attributes: This theme explores how women respond to breast health awareness programs, particularly during BSE training sessions. Two key sub-themes emerged: Incentive-Driven Participation and Low Perceived Need for Preventive Healthcare**.** These sub-themes highlight the financial and perceptual barriers that influence women's participation and engagement with preventive health services.

Sub-theme 1.1: ***Incentive-Driven Participation*****:** The first sub-theme, Incentive-Driven Participation, emphasises that women's willingness to engage in health programs was often influenced by financial incentives. Many women were hesitant to attend BSE training sessions unless a clear reward or benefit was provided, indicating that practical or financial expectations significantly impacted their decision to participate.

1.1.1 Expectation of incentives**:** *"Didi, is there any payment for attending this session? We have work at home, so if there's no money, why should we come?" – Participant 3*

This response highlights the economic pressures that shape women's decisions. For many, attending the training involved sacrificing part of their daily income or neglecting household responsibilities, making participation less appealing without a clear benefit.

Sub-theme 1.2: ***Low Perceived Need for Preventive Care*****:** Some women expressed hesitation about attending health awareness sessions because they did not perceive themselves to be at risk.

1.2.1 Lack of intrinsic motivation: "I came only because my neighbor said there might be something to gain..." *– Participant 6*

1.2.2 Symptom-Based Health Perception: "I don't think anything is wrong with me." *– Participant 6*

Theme 2: Devoutness and Religious Beliefs: This theme explores how spiritual beliefs and religious practices influenced participants' decisions regarding seeking medical treatment for breast-related symptoms. Faith in divine intervention was often prioritised over seeking clinical care, and some families delayed or declined therapy in favour of religious rituals. Two significant sub-themes emerged: Healing through Faith and Religious Rituals and Delaying Medical Care.

Sub-theme 2.1: Healing through Faith: Some women and their families believed illness to be the result of spiritual imbalance or divine displeasure. Instead of following medical recommendations, they turned to prayer and religious rituals, placing hope in healing through faith rather than immediate medical intervention.

2.1.1 Reliance on divine healing: *"I went to Bapji's place and prayed... Now I feel better. I believe when God is happy, he will fully heal me. This is a test of my faith." – Participant 4*

This shows how spiritual beliefs influenced the woman's understanding of her illness. She viewed her health issue not as a physical condition but as a matter of spirituality, which led her to delay seeking medical care.

***Sub-theme 2.2: Religious Rituals Delaying Medical Care*:** In some cases, even when patients were at health facilities and scheduled for diagnostic procedures, families chose to postpone or avoid treatment due to religious obligations.

2.2.1 Prioritisation of religious rituals: *"The biopsy was scheduled, but her mother and brother insisted they had to leave because Bapji called them for rituals. She couldn't get tested that day." – Field Note*

This illustrates how religious practices and their faith communities can lead to delays in diagnosis and treatment. Although the patient later re-engaged with the healthcare system, the initial postponement highlights a common challenge in settings where faith and medicine intersect.

Theme-3: Clinical Challenges: This theme focuses on the clinical experiences of women following the detection of breast cancer-related symptoms. It highlights the barriers they encountered in accessing diagnostic services, navigating complex referral pathways, managing financial burdens, and coping with inadequate healthcare during hospital stays. Three main sub-themes were identified: Delayed or Incomplete Diagnosis**,** High Out-of-Pocket Costs, and Suboptimal Hospital Experience**.**

***Sub-theme 3.1: Delayed or Incomplete Diagnosis*:** Many women referred for further investigation at tertiary healthcare centres did not complete the diagnostic process. Several participants cited long queues, inadequate hospital infrastructure, or reliance on alternative treatments as reasons for discontinuing formal healthcare.

3.1.1 Avoidance of tertiary healthcare due to crowd: *"Doctor asked us to go to Jodhpur hospital for more tests, but we thought it would be better to get treatment here at the PHC. There are too many people there." – Participant 7*

3.1.2 Preference for traditional healer: *"She had a lump for two years, but her husband said they would go to Vaidji (traditional healer)." – Field Note*

These verbatims highlight the reluctance of some patients to seek higher-level healthcare, whether due to perceived inconvenience or faith in traditional healing systems. Such choices can lead to delays in obtaining an accurate diagnosis or initiating timely treatment. The dependence on PHCs for serious conditions also indicates that they have limited trust in the referral system and that they will not benefit from tertiary healthcare hospitals, coupled with insufficient communication about the importance of tertiary healthcare.

Sub-theme 3.2: High Out-of-Pocket Costs: For many participants, the financial burden of diagnosis and treatment was overwhelming. Even in public hospitals, patients reported incurring substantial expenses or being referred to private labs for specialised tests.

3.2.1 Financial burden of treatment: *"They took out the tumor and told me it was cancer. I spent nearly forty thousand for surgery and tests. My husband can't work; I'm the only earning member." – Participant 10*

This narrative highlights how treatment costs, even within public healthcare settings, can discourage low-income households from completing necessary care. Financial hardship can compel individuals to choose between basic survival and medical attention. Participants lacked awareness of or access to government health schemes, further worsening economic barriers to healthcare.

Sub-theme 3.3: Suboptimal Hospital Experience: Women who underwent surgery or chemotherapy at government hospitals frequently reported inadequate healthcare and poor treatment conditions.

3.3.1 Inadequate nursing care**:** *"Nurses were hardly present... Glucose bottle was tied to the window. No stand, no one to help." – Participant 8*

3.3.2 Bribery for essential services**:** *"My husband was alcoholic and had sold everything. During chemo, I fell sick and had to be admitted. The blood bank guy asked for a bribe for blood." – Participant 12*

These accounts highlight the systemic issues within public hospitals that discourage patients from continuing treatment. The lack of compassionate healthcare service providers, infrastructure deficiencies, and unethical practices such as bribery undermine the overall treatment experience. Despite these challenges, some participants completed chemotherapy with external support, demonstrating resilience and the importance of community-based facilitators in ensuring treatment adherence.

Theme 4: Health System Constraints: This theme sheds light on the systemic barriers women face when navigating the healthcare system for breast cancer-related concerns. Systemic barriers such as inadequate infrastructure, shortage of diagnostic equipment, inefficient referral processes, and long waiting times often make it challenging for women to access timely and appropriate medical attention. Two key sub-themes were identified: Limited Infrastructure and Equipment, and Fragmented Referral and Follow-up System.

Sub-theme 4.1: Limited Infrastructure and Equipment: Participants commonly experienced difficulties in accessing timely diagnostic services due to limited equipment and overcrowded facilities.

4*.1.1 Limited diagnostic capacity:* *"The doctor said she needed an ultrasound, but the hospital had only one machine. Inpatients got priority, and we were asked to wait indefinitely." – Field Note*

4.1.2 Geographic inaccessibility: *"We were told to go to Jodhpur because the tests weren't available in the government hospital. But travelling that far wasn't possible for us." – Participant 5*

Such limitations caused delays and discouraged follow-up, especially among rural women who already faced logistical and financial constraints.

Sub-theme 4.2: Fragmented Referral and Follow-up System: The lack of coordination between various levels of healthcare and inconsistent support for patients during referrals also hindered the continuum of care.

4.2.1 Inconsistent referral chain: *"The PHC doctor referred her to CHC, but they said nothing could be done there. Then BCMO referred her to the district hospital, who again sent us to Jodhpur." – Field Note*

4.2.2 Family refusal of healthcare: *"At one point, she agreed to a biopsy, but her mother said she looked too weak. Her family refused, and we couldn't do anything more." – Field Note*

The referral pathways were not clearly communicated, leaving many families confused and overwhelmed. Inconsistent guidance and support at each level of healthcare resulted in missed diagnoses and delayed treatment.

Theme 5: Social Support: This theme explores the role of family and community support systems in influencing women's treatment decisions and coping mechanisms after discovering breast cancer-related symptoms. While some women were discouraged by family members, others received encouragement and logistical assistance. Three sub-themes emerged: Partner Influence**,** Supportive Family Members**, and** Community Encouragement**.**

***Sub-theme 5.1: Partner Influence*:** Spousal attitudes had a significant impact on treatment-seeking behaviour. In some cases, husbands were unsupportive or even obstructive.

5.1.1 Male control over health decisions: *"My husband is in Ahmedabad for work. My in-laws said he'd be angry if I went for treatment without telling him." – Participant 9*

5.1.2 Spousal opposition: *"She wanted treatment, but her husband didn't agree. We had to involve the LHV to convince her husband and mother-in-law that medical care was necessary." – Field Note*

These cases reveal the dependency some women have on their spouses or in-laws for health decisions. Male gatekeeping within families can delay or sometimes entirely block access to necessary medical care.

Sub-theme 5.2: Supportive Family Members: Despite challenges, a few women were supported by other family members who stepped in when spouses were absent or unsupportive.

5.2.1 Family advocacy for healthcare: *"Her father-in-law helped her get to the hospital. He was the one who convinced the family it was necessary." – Field Note*

5.2.2 External support during treatment: *"When she needed blood during chemo, we contacted her and helped arrange a donor. She completed all sessions and is doing well now." – Field Note*

These instances demonstrate how support from even one family member can have a profoundly positive influence on outcomes, particularly in extended family settings.

Sub-theme 5.3: Community Encouragement: Neighbours and community figures, such as school teachers and healthcare workers, played a crucial role in encouraging women to seek healthcare.

5.3.1 Community role models: *"Her husband was a teacher. He promised to spread awareness and referred women from his village for checkups." – Field Note*

5.3.2 Community-facilitated decision-making: *"When we visited with the Sarpanch and ANM, she finally agreed to go for a check-up. Her son also helped convince her." – Field Note*

Community-driven encouragement often acted as the final nudge for women who were undecided or fearful. Mobilising community leaders and leveraging trust within local networks can thus be a powerful tool to overcome reluctance.

Theme 6: Social Barriers: This theme highlights the complex social dynamics and gender norms that hinder women's ability to seek timely diagnosis and treatment for breast cancer-related symptoms. Stigma, fear of family disapproval, and lack of autonomy were common barriers. Two key sub-themes were identified: Patriarchal Gatekeeping and Stigma and Family Conflict**.**

***Sub-theme 6.1: Patriarchal Gatekeeping*:** Some participants shared that they were unable to make independent decisions regarding their health. In many households, the final authority on whether the woman could seek treatment rested with the husband or an elder male relative.

6.1.1 Male restriction on healthcare: *"She knew she needed to visit the doctor, but her husband said we had some hidden motive in taking her to the hospital." – Field Note*

6.1.2 Disregard of female health needs: *"Her father-in-law said she was fine and not to waste time. He dismissed our visit and said she doesn't need medicine at all." – Field Note*

These verbatim show how male family members often disregarded women's health concerns. The control exerted by male relatives created a barrier not only to clinical examination but also to acknowledging symptoms.

Sub-theme 6.2: Stigma and Family Conflict: In some cases, social stigma or intra-family conflicts made women more hesitant to disclose symptoms or pursue treatment. Women feared that seeking healthcare would result in social judgment or escalate family tensions.

6.2.1 Discrimination against infertile women: *"My husband and father-in-law believed that I couldn't give birth to a son, so they wanted me to die so he could remarry. That's why they didn't take me for treatment." – Participant 2*

6.2.2 Fear of blame for complications: *"We visited with health workers. Her breast had a wound, but she said she took painkillers. Later her husband said he'd only take her if we signed a letter saying nothing bad would happen to her." – Field Note*

This illustrates how social pressures, misconceptions about disease, and gender-based discrimination can intersect, leaving women without support at the most critical times. These barriers not only delay healthcare but often strip women of agency over their bodies.

Discussion

This study reveals that many women in rural Rajasthan still face significant challenges in accessing timely healthcare for breast cancer-related symptoms. Through interviews with thirteen women, we found that these challenges are connected to cultural beliefs, family roles, negative hospital experiences, and issues within the health system. Most participants had limited education and believed that spiritual reasons might cause their illness. Some women and their families preferred visiting religious places and following rituals instead of seeking medical help. This belief often led to delays in diagnosis and treatment. Similar findings were reported in other studies where women chose spiritual healing over clinical care, especially in rural settings[19].

Women also believed they were not at risk for breast cancer, which made them less likely to attend awareness sessions or perform BSE regularly. Many asked about payment for attending sessions, which shows how financial struggles affected their willingness to participate. This aligns with previous research where women were aware of BSE but did not feel the need to practice it regularly [20, 21]. However, unlike studies conducted among urban or semi-urban women where health education interventions were associated with improved BSE uptake and care-seeking behaviour[20, 25], our findings show that in deeply rural, low-literacy contexts, awareness is necessary but far from sufficient. This divergence may be explained by the compounding effect of poverty, gender inequity, and systemic health barriers that are less pronounced in better-resourced settings.

Even when women tried to get treatment, they faced difficulties at hospitals. Long waiting times, lack of equipment such as ultrasound machines, and high out-of-pocket costs were common problems. Some participants reported paying large amounts even in government hospitals, or being asked for bribes, which is starkly opposite to an ideal healthcare setting [22, 23]. These findings are consistent with other studies showing that delays in breast cancer care in developing countries are strongly associated with poor facility readiness and financial barriers[26, 29]. In contrast, studies from urban and semi-urban settings in North India and Maharashtra have documented relatively better awareness and health-seeking patterns among women with higher education and facility access [24, 25], suggesting that the rural-urban quality gap in public health infrastructure is a key driver of differential outcomes and must be addressed alongside awareness interventions.

Family support played an important role. In some cases, women were supported by their in-laws or neighbours to go for treatment. However, in many households, the decision to seek healthcare was controlled by male family members. Some husbands or fathers-in-law did not allow women to go to the hospital or dismissed their health concerns. This shows how social norms and

gender roles can hinder women from seeking timely healthcare [26]. These findings differ from studies in South India where greater community exposure and peer influence were associated with higher BSE practice rates and reduced delays [21], suggesting that patriarchal gatekeeping is more pronounced in the semi-arid rural belt of Rajasthan and may require targeted male-engagement strategies rather than solely women-directed interventions.

Our findings also indicate that women trusted health workers such as ANMs and ASHAs, especially when they visited homes and provided personalised support. Community leaders and teachers also played a role in encouraging women to seek healthcare. Studies in other domains, such as mental health, have similarly found that community perceptions significantly shape the success of screening and treatment programs [27, 28]. This demonstrates that community-based interventions and support systems can significantly enhance early detection [12, 29].

The six themes identified in this study, namely behavioural attributes, religious beliefs, clinical challenges, health system gaps, social support, and social barriers, help us understand why delays occur even after awareness programs. Similar barriers have been identified in earlier studies, including lack of knowledge, social stigma, fear, and poor health services [19, 26, 29]. Many other Indian studies have shown low BSE practice rates despite high awareness levels [20, 21, 30]. Even among educated women or those in the medical field, regular BSE practice remains low[24]. This indicates that knowledge alone is not sufficient. Efforts must focus on changing attitudes, boosting confidence in the health system, and addressing social pressures.

To improve early detection of breast cancer in rural India, awareness programs should be combined with better services at the primary and tertiary healthcare levels. Hospitals need better infrastructure, and patients must be protected from high costs and unethical practices. Involving families and communities in awareness efforts can also help reduce delays[31].

This study highlights how deeply rooted social beliefs, gender norms, economic challenges, and system-level gaps influence women's decisions to seek healthcare for breast cancer-related symptoms. Although awareness and BSE training were provided on a large scale, our findings indicate that multiple barriers including spiritual beliefs, low autonomy, and inadequate health infrastructure hindered many women from taking action. At the same time, community and family support proved to be key facilitators. These insights are consistent with the study's aim to explore the factors that influence rural women's breast self-examination practices and healthcare-seeking behaviour for early breast cancer detection.

Strengths and Limitations of the Study: This study highlights the voices of rural women, capturing their personal struggles, support systems, and efforts to seek healthcare. However, the small sample size and geographic focus may limit the generalizability of the findings, and the perspectives of women without symptoms were not included.

Conclusion

This study highlights how a combination of personal, cultural, and systemic barriers continues to limit early detection and timely healthcare for breast cancer-related symptoms among rural women in Rajasthan. Despite large-scale awareness and training on breast self-examination, many women remain constrained by social norms, financial limitations, and weak health infrastructure. At the same time, the role of supportive family members, community health workers, and trusted leaders emerged as strong facilitators of healthcare. Moving forward, efforts to promote early breast cancer detection must address these barriers through community engagement, system strengthening, and provider sensitization to improve access, trust, and timely diagnosis.

Recommendation

Efforts to improve early breast cancer detection should focus on increasing community awareness through targeted educational programs involving health workers, local leaders, and family members. In particular, engaging men and key decision-makers within families can help overcome gender-related barriers to healthcare. Strengthening the healthcare system by improving diagnostic infrastructure, ensuring the availability of trained professionals, and enhancing referral pathways at all levels of healthcare is essential. Additionally, sensitizing healthcare providers to offer respectful, non-judgmental healthcare can improve

trust in public health services and encourage timely treatment-seeking among women. Community-based follow-up and personalised support by frontline workers may further help bridge gaps in healthcare and reduce delays.

Data Management

The data collected through semi-structured interviews were audio-recorded, transcribed, and translated by the research team. Field notes were also maintained to capture contextual details. All transcripts and notes were organised and stored securely, and a coding framework was developed using NVivo 13 for qualitative analysis. Basic demographic information was entered and managed using MS Excel. The data that support the findings of this study are available from the corresponding author upon reasonable request and as per institutional guidelines.

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References

1. World Health Organization. Breast cancer: key facts; 2023. Available from: https://www.who.int/news-room/fact-sheets/detail/breast-cancer
2. International Agency for Research on Cancer. India source: Globocan-2020. Available from: https://gco.iarc.fr/today/data/factsheets/populations/356-india-fact-sheets.pdf
3. Kulothungan V, Ramamoorthy T, Sathishkumar K, Mohan R, Tomy N, Miller GJ, Mathur P. Burden of female breast cancer in India: estimates of YLDs, YLLs, and DALYs at national and subnational levels based on the national cancer registry programme, Breast Cancer Research and Treatment, 2024, 205 (2): 323-332.
4. Choudhary M, Mohanasundari SK, Ara M. Breast self-examination: knowledge, awareness, and practices among females of reproductive age group, International Journal of Research in Medical Sciences, 2024, 12 (6): 1999-2003.
5. Shrivastava N. A retrospective analysis of breast cancer presentation among young and older women in an Indian cohort of 70 patients, Cureus, 2024, 16 (5): e61239.
6. World Health Organization. WHO position paper on mammography screening; 2014. Available from: https://www.who.int/publications/i/item/who-position-paper-on-mammography-screening
7. Jadhav BN, Abdul Azeez EP, Mathew M, Senthil Kumar AP, Snegha MR, Yuvashree G, et al. Knowledge, attitude, and practice of breast self-examination is associated with general self-care and cultural factors: a study from Tamil Nadu, India, BMC Women's Health, 2024, 24 (1): 151.
8. Jobran AWM, Banat MA, Awad BY, Warasna HJ, Taqatqa YR, Jawabreh M, et al. Breast cancer knowledge and practice of breast self-examination among Palestinian female, West Bank: a cross-sectional study, Health Science Reports, 2023, 6(11): e1678.
9. Kumarasamy H, Veerakumar AM, Subhathra S, Suga Y, Murugaraj R. Determinants of awareness and practice of breast self examination among rural women in Trichy, Tamil Nadu, Journal of Mid-Life Health, 2017, 8 (2): 84-88.
10. Kathrikolly TR, Shetty RS, Nair S. Opportunities and barriers to breast cancer screening in a rural community in coastal Karnataka, India: a qualitative analysis, Asian Pacific Journal of Cancer Prevention, 2020, 21 (9): 2569-2575.
11. American Cancer Society. Breast cancer early detection and diagnosis; 2022. Available from: https://www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection.html
12. Sangwan RK, Huda RK, Panigrahi A, Toteja GS, Sharma AK, Thakor M, et al. Strengthening breast cancer screening program through health education of women and capacity building of primary healthcare providers, Frontiers in Public Health, 2023, 11: 1276853.

13. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups, International Journal for Quality in Health Care, 2007, 19(6): 349-357.
14. Sandelowski M. Whatever happened to qualitative description? Research in Nursing and Health, 2000, 23(4): 334-340.
15. Patton MQ. Qualitative Research and Evaluation Methods: Integrating Theory and Practice. 4th ed. Thousand Oaks: SAGE Publications; 2014.
16. Tenny S, Brannan JM, Brannan GD. Qualitative Study. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2022. Available from: https://www.ncbi.nlm.nih.gov/books/NBK470395/
17. Guest G, Namey E, Chen M. A simple method to assess and report thematic saturation in qualitative research, PLoS One, 2020, 15(5): e0232076.
18. Braun V, Clarke V. Using thematic analysis in psychology, Qualitative Research in Psychology, 2006, 3(2): 77-101.
19. Dey S, Sharma S, Mishra A, Krishnan S, Govil J, Dhillon PK. Breast cancer awareness and prevention behavior among women of Delhi, India: identifying barriers to early detection, Breast Cancer: Basic and Clinical Research, 2016, 10: 147-156.
20. Gupta SK, Pal D, Garg R, Tiwari R, Shrivastava A, Bansal M. Impact of a health education intervention program regarding breast self examination by women in a semi-urban area of Madhya Pradesh, India, Asian Pacific Journal of Cancer Prevention, 2009, 10: 1113-1117.
21. Kommula ALSD, Borra S, Kommula VM. Awareness and practice of breast self examination among women in South India, International Journal of Current Microbiology and Applied Sciences, 2014, 3: 391-394.
22. Sangwan RK. The ethics of caring: a study of doctors in hospital settings, International Journal of Science, Technology and Society, 2015, 1(2).
23. Sangwan RK. Health, Human Rights and Ethics: A Sociological Study in Hospital Setting. Jaipur: Rawat Publications; 2017.
24. Ramakant P, Singh KR, Jaiswal S, Singh S, Ranjan P, Rana C, et al. A survey on breast cancer awareness among medical, paramedical, and general population in North India using self-designed questionnaire: a prospective study, Indian Journal of Surgical Oncology, 2018, 9: 323-327.
25. Paunikar AP, Khadilkar HA, Doibale MK, Kuril BM. Knowledge, attitude and practices of women towards breast cancer in the field practice area of urban health training centre, Aurangabad, Maharashtra, International Journal of Community Medicine and Public Health, 2017, 4: 3659-3663.
26. Sharma K, Costas A, Shulman LN, Meara JG. A systematic review of barriers to breast cancer care in developing countries resulting in delayed patient presentation, Journal of Oncology, 2012, 2012: 121873.
27. Sangwan RK, Kansara D, Matoria S, Ali H, Khetan M, Singh V, et al. Perceptions of primary healthcare providers for screening and management of mental health disorders in India: a qualitative study, Frontiers in Public Health, 2024, 12: 1446606.
28. Choudhary N, Sangwan RK, Kumar M, Khetan M, Huda RK, Arora S, Gill R, Valecha V, Babu BV. Anxiety among pregnant women in the second and third trimesters: a qualitative study, Journal of Affective Disorders Reports, 2026, 24: 101045.
29. Agarwal G, Ramakant P, Forgach ERS, Rendon JC, Chaparro JM, Basurto CS, et al. Breast cancer care in developing countries, World Journal of Surgery, 2009, 33: 2069-2076.
30. Gupta A, Shridhar K, Dhillon PK. A review of breast cancer awareness among women in India: cancer literate or awareness deficit? European Journal of Cancer, 2015, 51: 2058-2066.
31. Shams M, Shariatinia S. Social marketing: is it an approach to promote screening tests for women's cancers? Journal of Gynecology and Women's Health, 2018, 12.