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Compliance to Breast Health Behaviour Among Breast Cancer Patients Enrolled in a Tertiary Care Hospital: A Cross-Sectional Study

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Abstract

Background

Breast cancer is the most commonly diagnosed cancer among women globally and remains a major cause of cancer-related mortality. The World Health Organization estimates that 2.3 million women were diagnosed with breast cancer in 2022 and about 670,000 died from the disease, highlighting substantial global inequities in diagnosis, treatment, and survival outcomes. Early recognition of symptoms, timely consultation, adherence to investigations, and continuation of treatment are essential components of breast health behaviour. However, such behaviour is often shaped by symptom appraisal, myths and fatalistic beliefs, provider communication, family support, and institutional factors.

Objective

To assess compliance to breast health behaviour and identify factors associated with compliance among breast cancer patients enrolled in a tertiary care hospital.

Methods

A hospital-based cross-sectional study was conducted among 95 female breast cancer patients aged more than 18 years at **SN Medical College,Agra** from February 2024 to January 2026. Data was collected using a structured questionnaire covering clinical history, source of information, symptom interpretation, myths and beliefs, reasons for delay, healthcare access timelines, support systems and workplace support. Associations between these variables and breast health behaviour were examined using bivariate analysis. Multivariate logistic regression was used to identify independent predictors of positive breast health behaviour. Statistical significance was considered at $p < 0.05$.

Results

No statistically significant associations were found between breast health behaviour and clinical history, source of information, initial interpretation of symptoms, reasons for delay, healthcare access timelines, or relationship challenges after diagnosis ($p > 0.05$). Significant associations were observed for myths and beliefs regarding breast cancer ($p = 0.015$), healthcare enablers(p=0.007), mode of support(p=0.021) , and workplace support(p=0.008) . Multivariate logistic regression showed that fear of death (OR=2.55,95%CI:1.16-5.59,p=0.019) , belief that breast cancer is a punishment for past mistakes(OR=2.84,95%CI:1.23-6.59,p=0.015), , ultrasound as the recommended diagnostic test(OR=2.46,95%CI:1.17-5.14,p=0.017), consultation of Ayurveda(OR=3.70,95%CI:1.09-12.56,p=0.037),healthcare provider recommendation(OR=2.89,95%CI:1.32-6.33,p=0.007) , spousal emotional support(OR=3.28,95%CI:1.19-9.04,p=0.021),and workplace support(OR=3.62,95%CI:1.39-9.43,p=0.008) were independently associated with positive breast health behaviour.

Conclusion

Compliance to breast health behaviour among breast cancer patients was influenced more strongly by psychosocial beliefs, healthcare provider involvement, and social and institutional support than by clinical history alone. Interventions addressing myths, improving provider communication, and strengthening spousal and workplace support may improve breast health behaviour in women living with breast cancer.

Keywords

Breast cancer; breast health behaviour; compliance; tertiary care hospital; psychosocial beliefs; support systems

Introduction

Breast cancer is a major public health challenge and the leading cancer among women worldwide. According to the World Health Organization, breast cancer caused approximately 670,000 deaths globally in 2022, and it was the most common cancer among women in 157 of 185 countries [1]. WHO and IARC also report that the burden of breast cancer is marked by pronounced inequities: women in low-resource settings are less likely to be diagnosed, yet

more likely to die because of late presentation and limited access to timely, quality treatment [2]. The growing burden of breast cancer has therefore intensified the need for early detection, timely diagnosis, continuity of care, and long-term support systems [3-6].

Breast health behaviour refers broadly to actions that support breast health across the continuum of care. These include awareness of warning signs, timely appraisal of symptoms, prompt medical consultation, adherence to recommended investigations, continuation of treatment, participation in follow-up, and use of supportive resources when needed. In women already diagnosed with breast cancer, compliance with such behaviour is especially important because treatment completion and ongoing follow-up are strongly related to prognosis, recurrence monitoring, symptom control, and quality of life [1,5,6].

The pathway from symptom recognition to formal care is complex. Many women initially misinterpret breast symptoms as non-serious, temporary, or unrelated to cancer [7-11]. Earlier literature on patient delay has shown that the process of help-seeking often involves multiple stages, including symptom detection, appraisal of seriousness, decision to disclose symptoms, and actual consultation with a health professional [7,11]. Delay can occur at any of these stages and may be driven by fear, denial, fatalistic attitudes, embarrassment, stigma, or practical barriers such as cost and transportation [8-13].

Psychosocial and cultural beliefs also have substantial influence on breast health behaviour. Misconceptions about the causes of breast cancer, beliefs linking illness to punishment or fate, concern about social stigma, and fear of disfigurement or aggressive treatment may shape whether women seek help early or adhere to treatment recommendations [13-19]. In some settings, myths coexist with high emotional concern; therefore, women may comply with treatment while still holding medically inaccurate beliefs [14-17]. This makes behavioural interpretation more complex than a simple division between “aware” and “unaware.”

Healthcare provider communication is another important determinant. Studies have consistently shown that provider recommendation, clarity of communication, trust, and shared understanding improve adherence to screening, treatment, and follow-up [20-23]. Similarly, support from spouses, family members, peers, and workplaces can reduce emotional and logistical barriers. Social support is known to influence treatment adherence, psychological adjustment, quality of life, and survivorship experiences [24-30]. Workplace support, in particular, may enable women to maintain treatment schedules through flexible leave, financial support, and practical accommodations [28-30].

Although breast cancer awareness and screening practices have been studied extensively in the general female population, fewer studies have focused specifically on compliance to breast health behaviour among women already diagnosed with breast cancer in tertiary care settings. Such women face not only disease-related concerns but also ongoing emotional, social, and institutional challenges that may influence health behaviour after diagnosis. Understanding these factors is essential for planning context-specific interventions.

Therefore, the present study was undertaken to assess compliance to breast health behaviour and identify factors associated with compliance among breast cancer patients enrolled in a tertiary care hospital.

Objectives

1. To assess compliance to breast health behaviour among breast cancer patients enrolled in a tertiary care hospital.
2. To identify factors associated with compliance to breast health behaviour among the study participants.

Methods

Study design

A hospital-based cross-sectional study was conducted.

Study setting and duration

The study was carried out among breast cancer patients enrolled in **Sarojini Naidu Medical College,Agra** tertiary care hospital, over a two-year period from **February 2024 to January 2026**.

Study population

The study population comprised female breast cancer patients aged more than 18 years who were attending the tertiary care hospital during the study period.

Sample size

As per NFHS-5 data (2019--21), the prevalence of women screened for breast cancer in urban areas was 1.2\%~\cite{ref22}; therefore, \(p=1.2\%\), \(q=100-p=98.8\%\), absolute error (\(e\)) was taken as 2.5\%, and non-response rate as 10\%. Using the formula \(n=Z^2pq/e^2\), the sample size was calculated as \(n=(1.96 \times 1.96 \times 1.2 \times 98.8)/(2.5)^2=75\);

after adding a 10\% non-response rate, the final sample size was 84.Thus, a maximum of 95 sample size is taken.

Inclusion criteria

- Female breast cancer patients
- Age more than 18 years
- Enrolled in the tertiary care hospital during the study period
- Willing to participate in the study

Exclusion criteria

- Patients unwilling to participate
- Patients unable to provide the required information at the time of data collection

Data collection tool and procedure

Data were collected using a structured questionnaire/interview schedule. The questionnaire captured information related to:Clinical history and family history,source of information regarding breast cancer,initial interpretation of breast symptoms,myths and beliefs regarding breast cancer,reasons for delay in seeking care,healthcare access timelines,healthcare enablers,provider first consulted,family, spousal, and peer support,relationship challenges after diagnosis,workplace support and compliance to breast health behaviour.The dependent variable in the study was **compliance to breast health behaviour**, categorized as positive versus poor/non-positive breast health behaviour, as defined by the study tool used by the investigator.

Statistical analysis

Data were entered and analyzed using appropriate statistical software. Descriptive statistics such as frequencies and percentages were used to summarize the variables. Associations between categorical variables and breast health behaviour were assessed using bivariate analysis. Variables of interest were entered into multivariate logistic regression to identify independent predictors of positive breast health behaviour. Odds ratios with 95% confidence intervals were calculated, and $p < 0.05$ was considered statistically significant.

Results

Overview of participants

A total of 95 female breast cancer patients aged more than 18 years participated in the study. The analysis explored compliance to breast health behaviour and examined its association with a range of clinical, psychosocial, healthcare-related, and support-related variables.

Clinical history and source of information

No statistically significant association was found between breast health behaviour and clinical history or source of information ($p > 0.05$). Nevertheless, some descriptive differences were observed. A slightly higher proportion of women with positive breast health behaviour reported a family history of breast cancer (15.3%) compared with those with poor breast health behaviour (8.3%). This may indicate greater vigilance or a stronger perception of susceptibility among women exposed to breast cancer within the family.

Regarding the source of information, media was more commonly reported among women with positive breast health behaviour (59.1%), whereas doctor-based information was relatively more frequent among women with poor behaviour (39.4%). Though statistically non-significant, this pattern suggests that repeated public exposure to breast cancer messages may contribute to broader awareness and possibly to more proactive health engagement.

Table 1: Association of Clinical History and Source of Information with Breast Health Behavior

Variables		BREAST HEALTH BEHAVIOUR		p-value
		NO	YES	
H/O Breast Disease	Yes	2 (5.6%)	4 (6.8%)	**0.812**
	No	34 (94.4%)	55 (93.2%)	
F/H/O Breast Cancer	Yes	3 (8.3%)	9 (15.3%)	
	No	33 (91.7%)	50 (84.7%)	**0.325**
Source of Information	Doctor	13 (39.4%)	4 (18.2%)	**0.180**
	Media	12 (36.4%)	13 (59.1%)	
	Friends/Family	8 (24.2%)	5 (22.7%)	

Initial interpretation of breast symptoms did not show a statistically significant association with breast health behaviour ($p = 0.284$). However, differences in symptom appraisal were notable. Among women with poor breast health behaviour, more than half (52.8%) initially believed that their symptoms were "not serious." In contrast, women with positive breast health behaviour were relatively more likely to perceive symptoms as a danger sign (23.7%). A further proportion in the positive behaviour group believed that alternative medicine could cure the condition (22.0%), suggesting that better behavioural engagement may coexist with non-biomedical explanatory beliefs.(Table 1)

These findings indicate that early symptom interpretation remains an important behavioural stage even when overall compliance is relatively better. Recognition of seriousness may promote action, while underestimation of symptoms may contribute to delayed or inconsistent care-seeking.

Table 2: Association Between Initial Thought about the Symptom and Compliance with Breast Health Behavior

Initial Thought about the Symptom	BREAST HEALTH BEHAVIOUR		p-value
	NO	YES	
Not serious	19 (52.8%)	20 (33.9%)	**0.284**
Danger sign	5 (13.9%)	14 (23.7%)	
Can be cured by alternative medicines	4 (11.1%)	13 (22.0%)	
Require medical attention	7 (19.4%)	9 (15.3%)	
Symptoms can easily go	1 (2.8%)	3 (5.1%)	

A statistically significant association was observed between myths and beliefs and breast health behaviour ($p = 0.015$). Women with positive breast health behaviour more often reported the belief that breast cancer is a punishment for past mistakes (71.2%) than women with poor behaviour (47.2%). Similarly, the beliefs that only older women get breast cancer (30.5%) and that only women with a family history are affected (62.7%) were more common among women with positive behaviour.(Table 2)

In contrast, the myth that wearing a bra causes breast cancer was more frequent among women with poor breast health behaviour (19.4%). This suggests that the relationship between beliefs and behaviour is not straightforward. Some beliefs may reflect emotional seriousness rather

than scientific understanding, while others may directly indicate misinformation and low health literacy.

Table 3: Association of Myths and Beliefs with Breast Health Behaviour

Variables		BREAST HEALTH BEHAVIOUR		p-value
		NO	YES	
Myth	Only those with family history are affected	21 (58.3%)	37 (62.7%)	0.155
	Only older women get breast cancer	8 (22.2%)	18 (30.5%)	
	Wearing a defective innerwear can cause breast cancer	7 (19.4%)	4 (6.8%)	
Belief	Breast cancer is a punishment for past mistakes	17 (47.2%)	42 (71.2%)	0.015
	If you have breast cancer, you can't have children	15 (41.7%)	9 (15.3%)	
	Other belief	4 (11.1%)	8 (13.6%)	

Reasons for delay were not significantly associated with breast health behaviour ($p = 0.414$). Fear of aggressive or excessive treatment emerged as the most common reported reason across both groups, affecting 50.0% of women with poor behaviour and 33.9% of women with positive behaviour. Other reported reasons included high treatment cost (33.9%), preference for alternative therapies (20.3%), stigma, and anxiety.(Table 3)

Although not statistically significant, these findings suggest that emotional and financial barriers continue to influence women's care pathways even after diagnosis. Fear may not completely prevent action, but it may complicate decision-making and contribute to hesitation or fragmented care-seeking.

Table 4: Reasons for Delay in Referral vs. Breast Health Behaviour

Reason	**BREAST HEALTH BEHAVIOUR**		**p-value**
	NO	**YES**	
Personal circumstances	18 (50.0%)	38 (64.4%)	**0.107**
Insurance related	5 (13.9%)	11 (18.6%)	
Administrative issues	13 (36.1%)	10 (16.9%)	

No statistically significant association was found between healthcare access timelines and breast health behaviour ($p > 0.05$). Nonetheless, the positive behaviour group demonstrated somewhat more timely engagement with healthcare services. A larger proportion sought medical attention within six months of symptom onset (35.6%) compared with those with poor behaviour (27.8%).(Table 4)

Likewise, timely diagnostic testing was marginally more common in the positive behaviour group, with 15.3% undergoing testing on the same day and 50.8% within one week. Treatment initiation also tended to occur within one week to one month in both groups, with slight differences favoring the positive behaviour group. These findings suggest that while structural timelines alone did not produce statistically significant differences, timely healthcare engagement may still reflect broader behavioural readiness.

Table 5: Association of Healthcare Access Timelines with Breast Health Behaviour

Variables		BREAST HEALTH BEHAVIOUR		p-value
		NO	YES	
Time to See a Doctor	< 6 months	10 (27.8%)	21 (35.6%)	**0.431**
	> 6 months	26 (72.2%)	38 (64.4%)	
Time to Tests	Same day	3 (8.3%)	9 (15.3%)	**0.126**
	1 week	19 (52.8%)	30 (50.8%)	
	2–4 weeks	13 (36.1%)	12 (20.3%)	
	> 4 weeks	1 (2.8%)	8 (13.6%)	
Time to Start	Within 1 week	22 (61.1%)	30 (50.8%)	**0.394**
	1–4 weeks	9 (25.0%)	13 (22.0%)	
	> 1 month	1 (2.8%)	7 (11.9%)	
	Immediately	4 (11.1%)	9 (15.3%)	
Referral Timing	Same day	11 (30.6%)	13 (22.0%)	**0.167**
	1 week	21 (58.3%)	39 (66.1%)	
	2–4 weeks	2 (5.6%)	7 (11.9%)	
	> 1 month	2 (5.6%)	0 (0.0%)	

Type of family support was not significantly associated with breast health behaviour ($p = 0.163$), and family communication-related concerns also did not show statistical significance ($p = 0.671$). However, **healthcare enablers** demonstrated a significant association with breast health behaviour ($p = 0.007$). Women with positive behaviour were more likely to identify healthcare provider recommendation (64.4%) and clear provider communication (16.9%) as important enablers. By contrast, women with poor behaviour more commonly identified family support as the primary enabler (36.1%).(Table 5)

The **mode of support** also showed a significant association with breast health behaviour ($p = 0.021$). Women with positive behaviour were more likely to participate in support groups (16.9%) and receive encouragement for treatment adherence (28.8%). In contrast, women with poor behaviour more commonly relied on accompaniment to appointments (75.0%), indicating that passive support may be less effective than active motivational support.

Table 6: Family Support Received vs. Breast Health Behaviour

Variables		BREAST HEALTH BEHAVIOUR		p-value
		NO	YES	
Support Type	Encouragement to seek treatment	15 (41.7%)	34 (57.6%)	0.163
	Accompanied to appointments	7 (19.4%)	8 (13.6%)	
	Emotional reassurance	2 (5.6%)	7 (11.9%)	
	Financial assistance	12 (33.3%)	10 (16.9%)	
Reason	Ease discussing breast issues	21 (58.3%)	37 (62.7%)	0.671
	Trust in female doctors	15 (41.7%)	22 (37.3%)	
Enabler	Healthcare recommendation	18 (50.0%)	38 (64.4%)	**0.007**
	Clear communication with provider	2 (5.6%)	10 (16.9%)	
	Family support	13 (36.1%)	5 (8.5%)	
	Insurance coverage	3 (8.3%)	6 (10.2%)	

Provider First Consulted	**Primary care physician**	25 (69.4%)	32 (54.2%)	0.264
	Radiologist	3 (8.3%)	4 (6.8%)	
	Surgeon	5 (13.9%)	19 (32.2%)	
	Other	3 (8.3%)	4 (6.8%)	
Support Mode	**Encouraging treatment adherence**	9 (25.0%)	17 (28.8%)	0.021
	Attending appointments	27 (75.0%)	32 (54.2%)	
	Participating in support groups	0 (0.0%)	10 (16.9%)	

The first healthcare provider consulted was not significantly associated with breast health behaviour ($p = 0.264$), although women with positive behaviour were more likely to have first consulted a surgeon (32.2%) compared with those with poor behaviour (13.9%). This may indicate a tendency toward specialist-directed care among women with better behavioural engagement.(Table 6)

Relationship challenges after diagnosis also did not demonstrate a significant association ($p = 0.284$). Emotional strain was the most commonly reported challenge among women with positive breast health behaviour (52.5%), while financial and communication problems were relatively similar across groups. These findings suggest that relationship stress is common after diagnosis but may not independently determine compliance behaviour.

Table 7: Relationship Challenges After Diagnosis vs. Breast Health Behaviour

Challenge	BREAST HEALTH BEHAVIOUR		p-value
	NO	YES	
Emotional strain	12 (33.3%)	31 (52.5%)	0.284
Communication issues	8 (22.2%)	11 (18.6%)	
Financial strain	9 (25.0%)	11 (18.6%)	
Intimacy issues	7 (19.4%)	6 (10.2%)	

Workplace support was significantly associated with breast health behaviour ($p = 0.008$). Women with positive breast health behaviour more frequently reported structured support such as time-off for treatment (52.5%) and financial assistance (22.0%). In contrast, women with poor behaviour more often reported only emotional support from colleagues (38.9%).(Table 7)

This distinction indicates that practical, institutional support may have a greater behavioural impact than informal sympathy alone. Women who are enabled to attend treatment without employment-related strain may be more likely to maintain continuity of care.

Multivariate logistic regression identified several independent predictors of positive breast health behaviour.Women who feared death as the major aspect of breast cancer had significantly higher odds of positive breast health behaviour ($OR = 2.55$, 95% CI: 1.16–5.59, $p = 0.019$). The belief that breast cancer is a punishment for past mistakes was also independently associated with positive behaviour ($OR = 2.84$, 95% CI: 1.23–6.59, $p = 0.015$).

Among healthcare-related variables, women for whom ultrasound was recommended had higher odds of positive behaviour ($OR = 2.46$, 95% CI: 1.17–5.14, $p = 0.017$). Consultation

of Ayurveda was also associated with positive behaviour ($OR = 3.70, 95\% CI: 1.09–12.56, p = 0.037$). Importantly, healthcare provider recommendation emerged as a strong predictor ($OR = 2.89, 95\% CI: 1.32–6.33, p = 0.007$).

Support-related predictors were also significant. Spousal emotional support increased the odds of positive breast health behaviour ($OR = 3.28, 95\% CI: 1.19–9.04, p = 0.021$), and workplace support similarly improved the likelihood of positive behaviour ($OR = 3.62, 95\% CI: 1.39–9.43, p = 0.008$). Attendance at a government awareness program showed borderline significance ($OR = 2.63, 95\% CI: 0.99–6.99, p = 0.051$).(Table 8)

Table 8: Multivariate Logistic Regression Analysis of Factors Associated with Compliance to Breast Health Behavior

Variable	Category (Reference)	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Aspect of breast cancer feared	Death vs Others	2.55	1.16 – 5.59	0.019*
Belief about breast cancer	Punishment for past mistakes vs Others	2.84	1.23 – 6.59	0.015*
Diagnostic test recommended	Ultrasound vs Others	2.46	1.17 – 5.14	0.017*
Indigenous medicine consulted	Ayurveda vs Others	3.70	1.09 – 12.56	0.037*
Healthcare enabler	Provider recommendation vs Others	2.89	1.32 – 6.33	0.007*
Spousal emotional support	Encouragement & involvement vs None	3.28	1.19 – 9.04	0.021*

Workplace support	Emotional / financial support vs None	3.62	1.39 – 9.43	0.008*
Attendance at awareness program	Government vs Others	2.63	0.99 – 6.99	0.051
Source of information	Media vs Doctor	1.96	0.76 – 5.07	0.180
	Friends / Family vs Doctor	1.38	0.45 – 4.18	0.574
Primary barrier	Emotional distress vs Others	1.28	0.67 – 2.46	0.228
	High treatment cost vs Others	0.52	0.19 – 1.42	0.204
	Long waiting time vs Others	1.72	0.60 – 4.94	0.305
	Lack of transportation vs Others	0.94	0.36 – 2.47	0.894
	Lack of information vs Others	1.65	0.37 – 7.29	0.515
Family barriers	Financial constraints vs None	0.39	0.13 – 1.14	0.100
Transportation difficulty	Lack of personal vehicle vs None	0.44	0.17 – 1.11	0.090

Delay type	System delay vs Patient delay	1.12	0.43 – 2.90	0.773
Family support	Encouragement vs None	1.86	0.78 – 4.40	0.163

Discussion

The present study assessed compliance to breast health behaviour among breast cancer patients enrolled in a tertiary care hospital and examined the factors associated with positive behaviour. The findings demonstrate that compliance was influenced less by clinical history and more by psychosocial beliefs, provider recommendation, and social or institutional support. This is important because it suggests that health behaviour in women with breast cancer cannot be understood solely through disease characteristics or service availability; rather, it reflects a broader interaction between emotional experience, cultural interpretation, communication, and support.

Breast cancer continues to represent a major global health burden, particularly in settings where diagnosis and treatment are delayed [1-6]. International evidence shows that improving breast cancer outcomes requires more than treatment availability; it also requires early symptom recognition, timely healthcare engagement, effective referral pathways, and completion of care [5,6]. The present findings fit within this broader framework, showing that compliance behaviour remains central even after diagnosis.

In this study, clinical history and source of information were not significantly associated with breast health behaviour. A slightly higher proportion of women with positive behaviour reported a family history of breast cancer, which may reflect increased awareness or perceived personal vulnerability. Previous literature has similarly noted that perceived susceptibility can influence help-seeking, although it does not always translate into earlier action [7-10,12]. The lack of statistical significance in the present study may reflect the small sample size or the fact that behavioural compliance among diagnosed patients is shaped by more immediate emotional and support-related factors than by past history alone.

Initial interpretation of symptoms also did not show a statistically significant association with behaviour, but the descriptive patterns are meaningful. Many women, especially those with poor behaviour, initially believed their symptoms were not serious. This supports earlier

evidence showing that symptom appraisal is a crucial stage in the pathway to diagnosis [7-11]. The Andersen model of total patient delay and later symptom-appraisal models emphasize that women often spend considerable time deciding whether a symptom is important enough to disclose or investigate [11,12]. When symptoms are interpreted as harmless, temporary, or unrelated to cancer, help-seeking may be delayed. In this study, even among women with positive behaviour, misconceptions and non-medical interpretations persisted, indicating that behavioural action does not always require accurate medical understanding.

One of the most striking findings of the study was the role of myths and beliefs. The belief that breast cancer is a punishment for past mistakes was significantly associated with positive breast health behaviour in both bivariate and multivariate analysis. At first glance, this may seem counterintuitive, since such a belief is medically inaccurate. However, the literature suggests that fear, fatalism, and culturally rooted interpretations of illness may operate in complex ways [13-17]. Some beliefs discourage care because they generate hopelessness, shame, or stigma. In other contexts, the same beliefs may increase perceived seriousness and motivate women to seek care urgently. Thus, the present finding may indicate that emotionally intense beliefs can stimulate action, even if the explanatory model is non-scientific. This interpretation is also supported by studies showing that women may hold multiple and even contradictory beliefs at the same time [14-17].

The persistence of myths in both groups is also consistent with studies from different low- and middle-income settings, where women commonly report misconceptions related to age, heredity, stigma, or supernatural causes of breast cancer [15-17]. Such findings reinforce the need for educational interventions that do not merely provide factual information but also actively engage with fear, fatalism, social meaning, and community narratives.

Another key finding was the importance of healthcare provider-related factors. Healthcare enablers were significantly associated with breast health behaviour, and provider recommendation remained independently significant in multivariate analysis. This aligns with the established literature demonstrating that provider-patient communication influences adherence to cancer screening, endocrine therapy, oral anticancer medications, and follow-up care [20-23]. Clear explanation, repeated reinforcement, trust-building, and explicit provider advice help patients interpret their illness more coherently and act with greater confidence. In the context of breast cancer, where women may face uncertainty, fear, and conflicting social advice, provider recommendation may serve as a particularly powerful behavioural anchor.

The significance of ultrasound as a recommended diagnostic test may reflect the broader effect of organized diagnostic engagement. When women receive a clear investigation pathway, the care process becomes more concrete and easier to follow. This may improve continuity and reduce uncertainty. Likewise, attendance at awareness programs showed borderline significance, suggesting that public education may contribute to better behaviour when combined with direct provider support.

The finding that consultation of Ayurveda was associated with positive breast health behaviour requires careful interpretation. This result may indicate that some women are proactive in seeking multiple forms of care and support, rather than being passive or disengaged. It may also reflect pluralistic health-seeking behaviour, which is common in many cultural settings. However, this should not be interpreted as proof that alternative consultation improves breast health behaviour in itself. Instead, it suggests the need for culturally sensitive counseling that understands patients' health beliefs while reinforcing the importance of evidence-based treatment.

Support systems also played a central role in this study. Although type of family support alone was not statistically significant, mode of support was significant, and spousal emotional support emerged as an independent predictor. This distinction is important. The literature on social support indicates that not all support functions in the same way [24-27]. Emotional support, practical support, informational support, and motivational encouragement may have different effects on behaviour. Women who are merely accompanied to appointments may still feel uncertain, passive, or dependent, whereas those who receive active encouragement, understanding, and emotional reassurance may be more empowered to adhere to care. Prior work has shown that supportive partners and stronger social networks can improve adjustment, treatment adherence, and quality of life among women with breast cancer [24-27].

The association between workplace support and positive breast health behaviour is one of the most practically relevant findings of the study. Women who reported time-off for treatment and financial support were more likely to show positive behaviour than those who received only emotional support from colleagues. This reflects a well-documented theme in survivorship literature: practical workplace accommodation is critical for sustained engagement with treatment and recovery [28-30]. Breast cancer affects not only health but also employment, identity, household functioning, and economic stability. Women who are supported by their workplace may face fewer interruptions in treatment, less financial anxiety, and greater ability

to attend appointments. Therefore, institutional support should be considered a legitimate component of breast cancer care, not merely a background social factor.

Relationship challenges after diagnosis were not significantly associated with breast health behaviour in this study, although emotional strain was common. This suggests that distress in close relationships may be widespread among women with breast cancer but does not necessarily translate directly into behavioural non-compliance. It may instead influence psychological burden, coping, and quality of life. The broader literature supports the idea that relationship dynamics are important in survivorship but interact with many other factors, including communication patterns, role changes, and caregiver adjustment [26,27].

Overall, the present study suggests that compliance to breast health behaviour among women with breast cancer is multidimensional. Behaviour appears to be shaped not only by knowledge and access, but by the way women emotionally understand their illness, the extent to which providers guide them, and whether their families and workplaces create conditions that support continued engagement with care. These findings support a more holistic approach to breast cancer services. Education alone may be insufficient if myths, fatalism, fear, and structural pressures are not addressed. Likewise, treatment adherence may be improved when counseling includes spouses, when providers communicate clearly and repeatedly, and when health systems recognize employment-related barriers.

Strengths and limitations

A key strength of this study is that it focused on breast health behaviour among women already diagnosed with breast cancer, a group that is often less examined than healthy women in awareness studies. The study also explored a broad set of psychosocial, healthcare-related, and support-related variables and used multivariate logistic regression to identify independent predictors.

However, several limitations must be acknowledged. The cross-sectional design limits causal inference. The sample size was relatively small, and the study was conducted at a single tertiary care hospital, which may limit generalizability. In addition, some beliefs and support patterns may be context-specific and influenced by local culture. Finally, because detailed baseline sociodemographic results were not available here, the analysis could not explore all potentially important confounders.

Conclusion

This cross-sectional study found that compliance to breast health behaviour among breast cancer patients was significantly associated with psychosocial beliefs, healthcare provider recommendation, spousal emotional support, and workplace support. In contrast, clinical history, source of information, access timelines, and several delay-related variables were not significantly associated with compliance. These findings suggest that interventions to improve breast health behaviour should move beyond information provision alone and should address emotional fears, culturally rooted misconceptions, provider communication, family engagement, and institutional support.

Declarations

Ethical approval and accordance

The study was approved by the Institutional Ethics Committee, Sarojini Naidu Medical College (Approval No: SNMC/IEC/DHR/2024/112). All the procedures performed in this study involving human participants were in accordance with the ethical standards of the Institutional Ethics Committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Consent to Participate

Written informed consent was obtained from all participants prior to data collection.

Consent for Publication

Not applicable. No identifying information, personal data, or images of participants have been included in this manuscript.

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Conflict of Interest

None

Data Availability Statement

The datasets generated and analyzed during the current study are not publicly available because they contain identifiable information from human participants and sharing them could compromise participant confidentiality. De-identified data are available from the corresponding author upon reasonable request and subject to approval by the Institutional Ethics Committee.

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