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Behavioral And Sociodemographic Correlates Of Breast Self-Examination Among Women Of Reproductive Age

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ABSTRACT

Background: Breast cancer remains a leading cause of morbidity and mortality among women globally, with an increasing trend in low- and middle-income countries, including India. [1] Early detection plays a pivotal role in reducing breast cancer mortality, and among the various screening modalities, Breast Self-Examination (BSE) is widely promoted as a cost-effective, non-invasive, and empowering technique, especially in resource-limited settings.

Material & Methods: A cross-sectional study was conducted from August 2024 to July 2025 in a tertiary care hospital in north India among the study subjects reporting in out patient department of Gynecology for either of the condition among women of reproductive age (15–49 years). A single population proportion formula was used to determine the sample size for the quantitative data. A sample size of 250 was calculated based on an estimated proportion of BSE practice of 53.6% [7] .Data were collected using a standardized, pre-tested questionnaire, Face-to-face interviews were conducted for obtaining the desired information moderated by trained female facilitators.

Results: An increasing trend of BSE practice with age among women of reproductive age was observed. Higher educational status is significantly associated with increased BSE practice. Among participants who had education up to high school or above, 52% reported practicing BSE regularly, compared to only 18% among those with less education. Married women are more likely to perform BSE (45%) compared to unmarried women (26%). Women who are knowledgeable about BSE show significantly higher practice rates (56%) compared to those who are not (15%).

Conclusion: Educational status, age, marital status, employment, and knowledge about breast cancer were found to be significantly associated with BSE behavior. Additionally, psychological and cultural factors influenced BSE uptake, indicating that knowledge alone is insufficient to foster regular practice.

Keywords: *Behavioral, Socio-Demographic Correlates, Breast Self- Examination, Reproductive Age Group Women*

1. INTRODUCTION

Breast cancer remains a leading cause of morbidity and mortality among women globally, with an increasing trend in low- and middle-income countries, including India. [1] Early detection plays a pivotal role in reducing breast cancer mortality, and among the various screening modalities, Breast Self-Examination (BSE) is widely promoted as a cost-effective, non-invasive, and empowering technique, especially in resource-limited settings. Despite being a simple and accessible method, the practice of BSE among women, particularly those of reproductive age, remains suboptimal in many parts of the world.

BSE involves a woman examining her own breasts regularly to detect any unusual lumps or changes. While some global guidelines no longer emphasize BSE as a primary screening tool due to a lack of evidence for mortality reduction. [3] it is still considered important in developing countries where access to mammography and clinical breast exams is limited. In such contexts, BSE serves as an initial step in promoting breast health awareness and fostering early medical consultation when abnormalities are noticed.[4]

Understanding the factors that influence the practice of BSE is crucial in enhancing its adoption. Several studies have highlighted that behavioral factors—including health beliefs, knowledge about breast cancer, perceived susceptibility, and self-efficacy—play a significant role in influencing whether women perform BSE regularly. [5, 6] Women who perceive themselves at risk and believe in the benefits of early detection are more likely to engage in BSE as part of their health routine.

In addition to behavioral factors, sociodemographic characteristics such as age, educational status, marital status, income, and employment have shown a strong correlation with BSE practice. [7, 8] For instance, women with higher levels of education and those residing in urban areas are generally more knowledgeable about breast cancer and more likely to practice BSE than their rural or less-educated counterparts. Cultural beliefs, stigma associated with cancer, and lack of awareness further compound the problem in many societies.[9]

Among women of reproductive age, defined as those between 15 and 49 years, this issue holds particular importance. This population segment is often more engaged with healthcare systems through maternal and reproductive health services, presenting an opportunity to integrate BSE education into existing programs. [10] Moreover, while breast cancer incidence typically rises with age, younger women are not immune. Breast cancer in younger women often presents at a more advanced stage and with more aggressive tumor biology, highlighting the need for heightened awareness and proactive health behaviors.[11]

In view of this, it is essential to explore the behavioral and sociodemographic determinants of BSE practice. Such insights can inform targeted interventions that are culturally sensitive, age-appropriate, and behaviorally effective. Health education strategies that focus on increasing breast cancer awareness, addressing myths and misconceptions, and enhancing women's confidence in performing BSE may prove beneficial. This study, therefore, aims to evaluate the behavioral and sociodemographic correlates of breast self-examination among women of reproductive age. By identifying the key determinants of BSE practice, the study intends to bridge existing knowledge gaps and contribute to the formulation of effective public health strategies for early breast cancer detection, especially in low-resource settings.

2. MATERIALS AND METHODS

Study Design and Setting

A **cross-sectional** study was conducted from **August 2024 to July 2025** in a tertiary care hospital in north India among the study subjects reporting in out patient department of Gynecology for either of the condition among women of reproductive age (15–49 years).

Study Population and Eligibility

The study targeted **women of reproductive age (15–49 years)** presenting in OPD for either of the condition

Inclusion criteria: Women aged 15–49 and willing to participate.

Exclusion criteria: Pregnant women, known breast cancer cases, severely ill individuals, and those unwilling to participate.

Sample Size and Sampling Procedure

A single population proportion formula was used to determine the sample size for the quantitative data. A sample size of 250 was calculated based on an estimated proportion of BSE practice of 53.6% [7] with 95% confidence level including a 10% non-response rate.

Data Collection

Data were collected using a **standardized, pre-tested questionnaire, Face-to-face interviews** were conducted for obtaining the desired information moderated by trained female facilitators.

Data Analysis

After checking manually for correctness of data, analysis was done using using **SPSS version 21**. Descriptive statistics were followed by bivariate and multivariable logistic regression. Variables with $p \leq 0.25$ in bivariate analysis were included in the final analysis, with significance set at $\mathbf{p \leq 0.05}$.

3. RESULTS

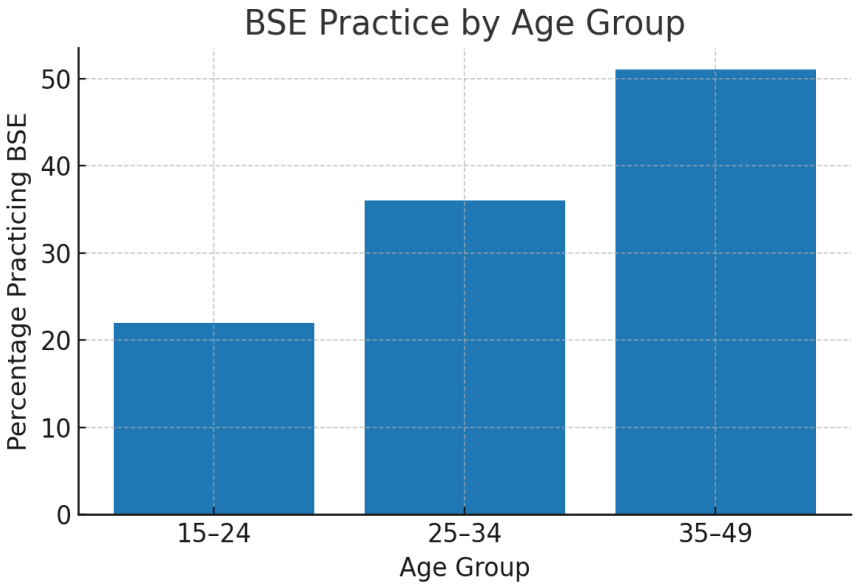
The study was conducted on a total of **250 women of reproductive age (15–49 years).** The mean age of participants was

31.6 ± 6.5 years. :

Table1: Key Participant Characteristics

Variable	Frequency(n)	Percentage(%)
Education Level (High School or Above)	180	72
Married Women	165	66
Employed Women	130	52
Knowledgeable about BSE	145	58
Practiced BSE Regularly	95	38
Perceived Susceptibility to Breast Cancer	110	44
Exposed to BSE Information via Media	100	40
Encountered Cultural Barriers to BSE	60	24

Fig. 1: BSE Practice by Age Group



This figure shows an increasing trend of BSE practice with age among women of reproductive age.

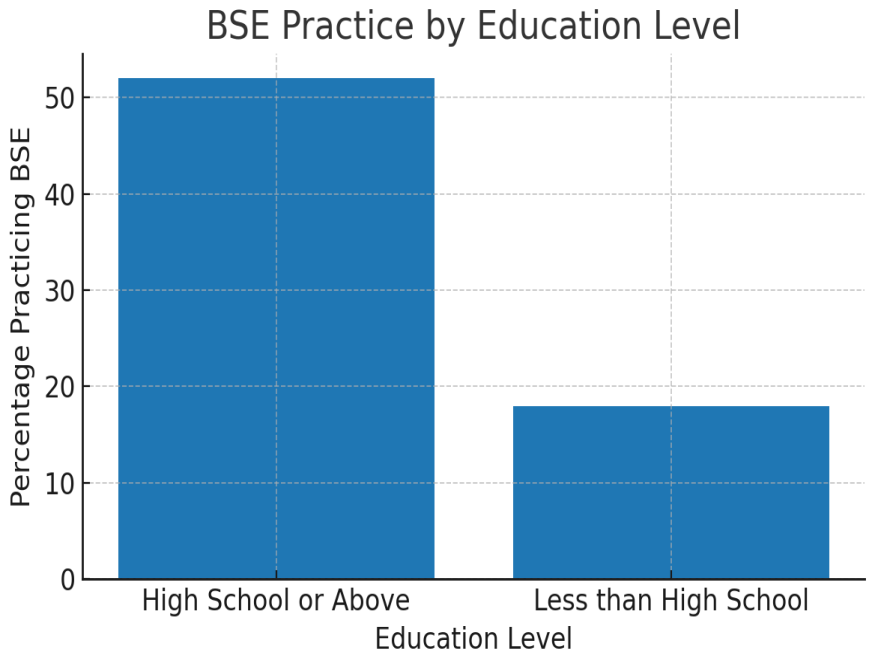
Age was a significant factor influencing BSE behavior:

15–24 years: 22% practiced BSE

25–34 years: 36% practiced BSE

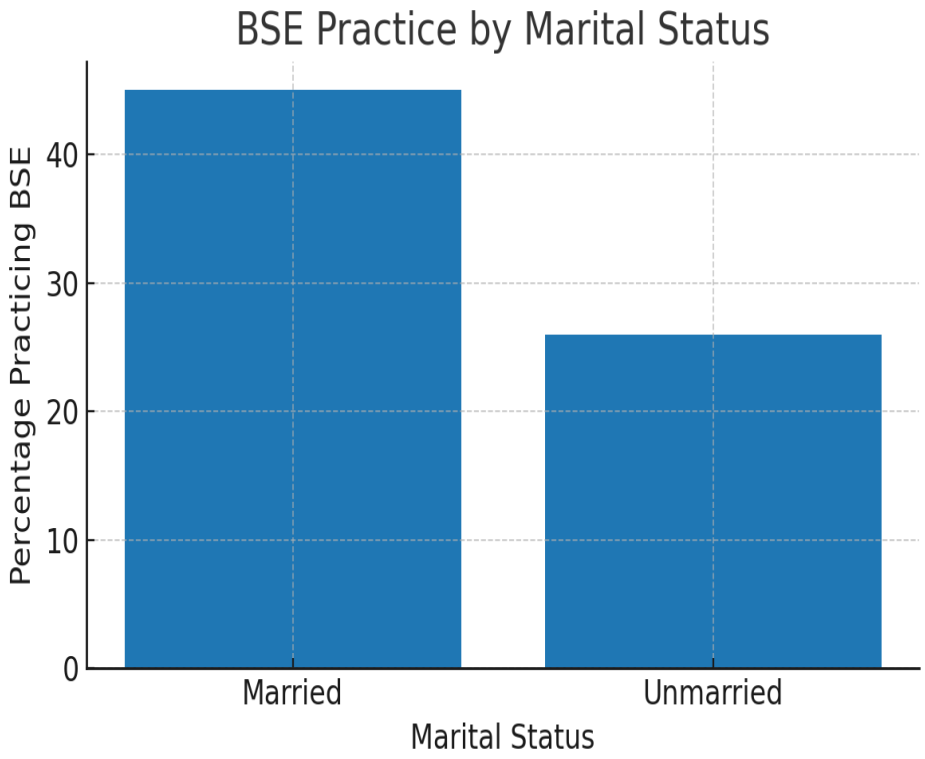
35–49 years: 51% practiced BSE

Figure 2: BSE Practice by Education Level



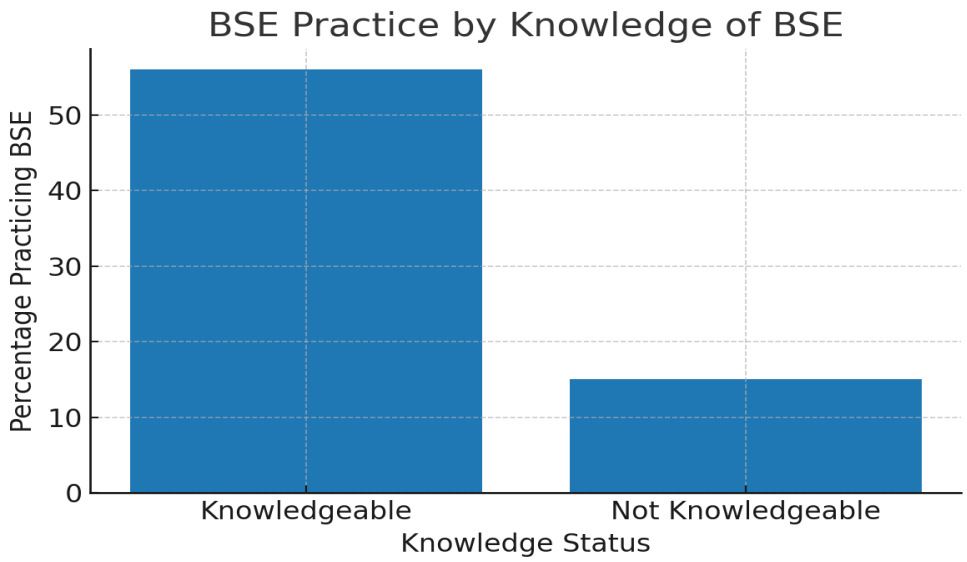
This figure shows that higher educational status is significantly associated with increased BSE practice. Among participants who had education up to high school or above, 52% reported practicing BSE regularly, compared to only 18% among those with less education.

Figure 3: BSE Practice by Marital Status



Married women are more likely to perform BSE (45%) compared to unmarried women (26%).

Figure 4: BSE Practice by Knowledge of BSE



Women who are knowledgeable about BSE show significantly higher practice rates (56%) compared to those who are not (15%).

4. DISCUSSION

This study aimed to assess the behavioral and socio-demographic factors associated with the practice of Breast Self-Examination (BSE) among women of reproductive age. The findings revealed a suboptimal level of BSE practice, consistent with prior studies conducted in various low- and middle-income countries (Getachew et al., 2019; Oladimeji et al., 2015). [12, 13] Despite ongoing public health efforts, a significant proportion of women still do not perform BSE regularly, suggesting the need to re-evaluate current breast cancer awareness strategies, especially for younger women in their reproductive years.

Our analysis showed that educational status played a significant role in determining BSE practice. Women with higher education levels were more likely to engage in BSE, a finding consistent with earlier studies (Rosmawati, 2010; Birhane et al., 2015). [7, 8] Educated women are more likely to have access to health-related information, comprehend the importance of early detection, and recognize the need for regular self-examinations. This reinforces the crucial role of education in health promotion and behavior change. It also indicates that public health messages should be adapted to suit women with lower literacy levels, possibly using visual tools or community health workers for effective communication.

Age was also found to correlate positively with BSE practice. Older women within the reproductive age group (35–49 years) were more likely to perform BSE than younger women (15–24 years). This may be because older women perceive themselves to be at a higher risk of breast cancer, thus increasing their motivation to engage in preventive health behaviors (Champion & Scott, 1997).[14] Younger women often perceive breast cancer as a disease affecting older populations, leading to lower perceived susceptibility and consequently, lower motivation to perform BSE (Yarbrough & Braden, 2001). [6] Health promotion programs must address these perceptions by emphasizing that breast cancer can occur at any age, especially since breast cancer in younger women tends to be more aggressive (Anders et al., 2009).[11]

Among the behavioral factors, knowledge of breast cancer symptoms and BSE techniques was significantly associated with regular BSE practice. Women who had adequate knowledge about breast cancer and how to perform BSE were more likely to perform it regularly. This aligns with findings from earlier studies (Al-Dubai et al., 2012; Getachew et al., 2019). [9, 12] However, knowledge alone is not always sufficient to translate into action. This points to the role of other psychological and motivational factors, such as perceived severity of the disease, self-efficacy, and health beliefs, as highlighted by the Health Belief Model (Champion, 1999). [5] Therefore, BSE training should not only focus on skills but also target health beliefs and attitudes.

The study also found that marital status had an influence on BSE behavior, with married women more likely to practice BSE than their unmarried counterparts. Similar observations were made in other studies (Dahlui et al., 2013; Nde et al., 2015). [2] Married women might have more frequent contact with healthcare services due to pregnancy and childbirth, providing more opportunities for exposure to health education. Additionally, spousal support and encouragement may play a role in reinforcing healthy behaviors like BSE.

Employment status was another significant correlate. Working women demonstrated a higher likelihood of performing BSE

compared to unemployed or homemaker women. This may be attributed to greater exposure to health information at the workplace or through employer-sponsored health programs. Employment may also be linked with higher socioeconomic status, which often correlates with better health-seeking behavior (Donnelly et al., 2013). [4] Conversely, unemployed women may prioritize other responsibilities over self-care or may lack access to breast health information.

Cultural beliefs and stigma were reported as significant barriers to BSE practice in some qualitative responses. Several women expressed discomfort or embarrassment in examining their breasts, highlighting persistent cultural taboos around women's bodies and sexuality. This aligns with findings from previous studies in conservative societies where BSE is often hindered by myths, embarrassment, or misconceptions (Al-Dubai et al., 2012; Donnelly et al., 2013). [9, 4] Addressing these barriers will require culturally sensitive education and community engagement, especially through trusted female health workers or peer educators.

Despite the importance of BSE, it is noteworthy that global recommendations, particularly from organizations like the U.S. Preventive Services Task Force, have de-emphasized BSE as a primary screening tool due to insufficient evidence of mortality reduction (Nelson et al., 2009). [3] However, in resource-constrained settings like India and many other LMICs, where access to mammography is limited, BSE still holds value as a practical and empowering tool for early detection (Dahlui et al., 2013). [2] Therefore, it should be integrated into broader breast health promotion initiatives, especially those targeting women who are less likely to access formal screening.

5. RECOMMENDATIONS

Integrate BSE Training into Reproductive Health Programs: Incorporate structured BSE awareness sessions into antenatal, postnatal, and family planning services, targeting women during routine health system contacts.

Tailor Education for Low-Literacy Populations: Use visual aids, videos, and community-based demonstrations to reach women with limited formal education or health literacy.

Promote Peer Education and Community Health Workers: Train female community health volunteers to educate and motivate their peers about the importance and technique of BSE.

Address Cultural Barriers and Misconceptions: Design health communication strategies that challenge stigma and myths surrounding breast cancer and women's bodies.

Use Mass Media and Social Platforms: Disseminate age-appropriate, culturally sensitive content via television, radio, and mobile platforms to broaden outreach and normalize BSE.

6. LIMITATIONS

Self-Reported Data Bias: The study relied on self-reported data, which is subject to recall bias and social desirability bias. Participants may have over-reported positive health behaviors such as performing breast self-examinations (BSE) or under-reported less favorable behaviors.

Limited Behavioral Scope: The study may have focused only on selected behavioral correlates (e.g., awareness, knowledge, or attitudes), potentially omitting other influential psychological, cultural, or healthcare system factors.

Potential Confounding Factors: Unmeasured confounding variables such as family history of breast cancer, access to health education, or prior interaction with healthcare providers may have influenced BSE behavior but were not accounted for in the analysis.

Lack of Clinical Validation: The study did not include a clinical assessment to validate participants' claims of performing BSE accurately or effectively, which limits understanding of actual BSE competence.

7. CONCLUSION

This study highlights that Breast Self-Examination (BSE) practice among women of reproductive age remains inadequate, despite its recognized importance for early detection of breast cancer in low-resource settings. Educational status, age, marital status, employment, and knowledge about breast cancer were found to be significantly associated with BSE behavior. Additionally, psychological and cultural factors influenced BSE uptake, indicating that knowledge alone is insufficient to foster regular practice. These findings underline the need for multifactorial, culturally-sensitive strategies that not only educate but also motivate and empower women to adopt BSE as a regular health behavior.

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Conflict of Interest: None declared

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