



Original Article

Comparative Analysis of Breast Self-Examination among Educated Women in Different Age Groups in Local Population

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Abstract

Objective: The objective aims to assess the level of awareness regarding breast self-examination practices among females with varying educational backgrounds and age demographics.

Methods: A cross-sectional study was conducted by circulating Google forms among female groups of varying ages and educational levels. Females >18 and above with diverse education levels were included while uneducated females were excluded. A population of 390 females was considered for this study.

Results: Among 390 females under study, 65.76% of females who had an awareness of breast self-examination were in the 20-30 age group, 18.38% in the 30-40 age group, 22.87% in the 40-50 age group, 13.07% in 50-60 age group while 6.12% were above 60 years of age. Females with a higher education level were more aware of BSE, 4.07% had done matriculation, 8.98% had done intermediate, 68.21% had done bachelors and 44.93% had done masters.

Conclusion: Data collected showed that younger age groups had more widespread awareness of BSE and a positive relationship was established between education level and awareness of BSE. Greater age groups ranging from middle to old age groups showed having a higher frequency of practising BSE.

Keywords: Breast Self-Examination (BSE), CA Breast, Age groups, Varying education levels, Early Diagnosis

How to cite this:

Saqlain F, Sohail M, Aziz A, Kazi A, Riaz M, Khan MA. Comparative Analysis of Breast Self-Examination among Educated Women in Different Age Groups in Local Population. J Pak Soc Intern Med. 2025;6(2): 114-118

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Received: 11-12-2024

Revised: 07-01-2025

Accepted: 25-04-2025

DOI: <https://doi.org/10.70302/jpsim.v6i2.2522>

Introduction

CA Breast has one of the greatest global prevalence rates, impacting people, primarily women, on a yearly basis. In 2022, there were 2,296,840 new cases of breast cancer among women.¹ Breast cancer is more common in women over the age of 35 years. CA Breast affects 24.1% of women in Pakistan each year.² Only a tiny percentage of them get therapy on time. Breast cancer has a high fatality rate globally. The globe Health Organisation reported in 2024 that breast cancer affects every nation in the globe and was the most frequent cancer in women in 157 of 185 countries in 2022, accounting for 670,000 deaths worldwide. Approximately half of all breast cancers develop in women who have no identifiable risk factors other than their gender and age.³ According to estimates, there will be around 28.4 million new cancer cases globally by 2040.⁴ According to research, timely illness identification, along with

good care options, improves patient outcomes and lowers overall death rates.⁵ Regular breast self-exams by women of all ages, from late adolescence to older adulthood, are an important component in early identification and subsequent prevention of breast cancer. These examinations do not need the presence of a medical practitioner.

This technique not only helps women get acquainted with their typical breast architecture, but it also aids in the early detection of any changes in breast structure, skin condition, or nipple look.

Numerous programs have been ongoing for some time in Pakistan to raise awareness among both educated and illiterate masses about the critical relevance of breast self-examination (BSE) and its role in promoting early illness identification. In 2022, the World Cancer Research Fund International (WCRF) named Pakistan as one of the 10 nations with

the highest breast cancer death rates. Women are encouraged to do BSE at least once a month in the comfort of their own homes, without the need for medical supervision, and to quickly report any unexpected changes they see.

A survey of female university students in Gaza found that a lack of awareness is the major barrier to frequent breast exams, with 39% citing it as a serious impediment. Furthermore, 31% of respondents said that their hectic schedules hampered their ability to complete these exams. Effectively adopting breast self-examination procedures will not only reduce death rates linked with this condition but also reduce the strain on healthcare practitioners. Research repeatedly shows that early illness diagnosis improves outcomes and, as a result, decreases death rates.

Methods

The study was a cross-sectional study that received ethical clearance from the institutional review board. Questionnaires were created using Google Forms and sent to females of all ages and educational backgrounds via online channels, mostly via WhatsApp groups. The data gathering phase lasted three months, with replies received and recorded. Following data collection, the information was analysed using Microsoft Excel to investigate the interrelationships between the numerous factors evaluated in the research and draw findings. The data obtained was organised into tables and pie charts to help people comprehend the correlations between the factors.

Results

The research included 390 educated females and assessed their degree of knowledge about BSE at various ages. It indicated that among the younger age group of 20-30 years, 65.76% had heard about BSE, 18.38% were 30-40 years old, 22.87% were 40-50 years old, and 6.12% were beyond the age of 60. The study looked at the association between 390 females of various ages and whether they had ever done BSE, and found a favourable correlation between younger age groups who practiced BSE.

The data indicated that 60.9% of females who practiced BSE were between the ages of 20 and 30, 23.27% between the ages of 30 and 40, 24.42% between the ages of 40 and 50, 13.06% between the ages of 50 and 60, and 6.12% beyond the age of 60. The study also looked at the association between different degrees of schooling and the prevalence of BSE. Except for the matriculation group, all educational groups performed BSE once a month.

Among the matriculation study group, 25.42% practiced BSE once a month or once every six months, while 75.72% practiced once a year. Females who had completed Intermediate level studies performed BSE once a month, with 50% doing so once every three months. Among the undergraduate (Bachelor's) group, 44.98% practiced BSE once a month, 24.99% once every three months, 18.74% once every six months, and 37.48% once every year. Out of the target demographic that has completed a postgraduate (Masters) degree, 45.38% practiced BSE once a month, 34.03% once every three months, 21.27% once every six months, and 25.52% once every year. The statistics below provide a tabular and visual depiction of the various age groups under investigation who had ever heard of breast self-examination among the local female population.

Table 1: Awareness of BSE by age group

Age Group (Years)	Count	Percentage
20-30	161	65.76%
30-40	45	18.38%
40-50	56	22.87%
50-60	32	13.07%
> 60	15	6.12%
Grand Total	390	100%

Awareness of SBE By Age Group

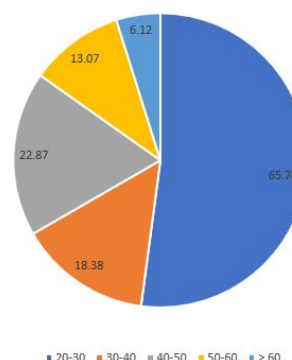


Figure 1: Awareness of SBE by Age Group

Table 2: Awareness of SBE by Educational Level

Educational level	Count	Percentage
Matriculation	10	4.07%
Intermediate	22	8.98%
Bachelors	167	68.21%
Masters	110	44.93%
Grand Total	390	100%

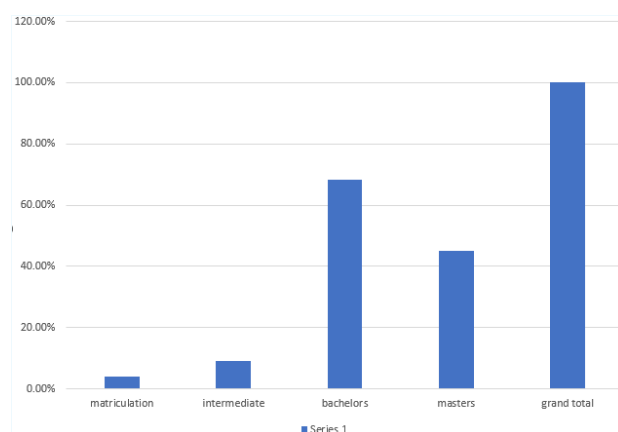
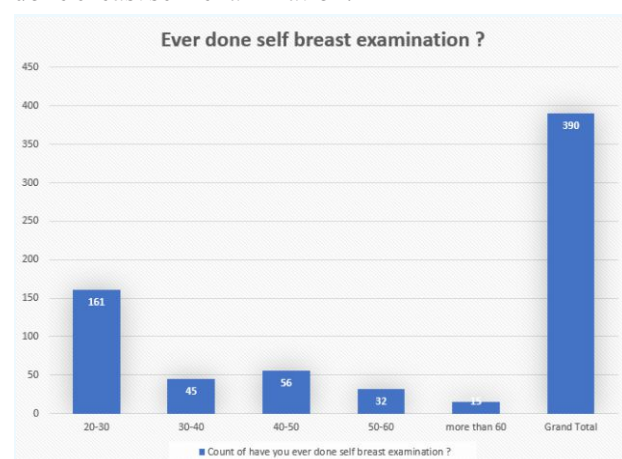


Figure 2: Awareness of SBE by Educational Level

Data below is a tabulated and visual representation of females of varying age groups under study who had done breast self-examination.



Discussion

The study looked at the knowledge of breast self-examination (BSE) among females of diverse educational levels. Within the investigated population, 4.07% had finished their education up to the matriculation level, 8.98% had attained the intermediate level, 68.21% had a bachelor's degree, and 44.93% had a master's degree. A study of university students in Bangladesh found that initial levels of awareness and understanding were minimal, but they increased dramatically after an educational intervention. According to research conducted in Vietnam, people with lower levels of education had a

higher frequency of poor understanding of breast self-examination (BSE). A study in North Karachi found a significant ($p < 0.001$) improvement in breast self-examination knowledge and practice among participants who received health education on breast carcinoma, the importance of self-examination, and monthly motivation via cell phone. A survey of undergraduate female students (≥ 18 years) from three University of Sharjah campuses found that 68.5% were aware of conducting BSE.¹⁰ A research in which female students enrolled in Saudi institutions were given an online self-administered questionnaire including socio-demographic data and BSE knowledge found that Saudi female students' understanding of BSEs is insufficient, with just 4.2% demonstrating appropriate knowledge.¹¹ A study of healthcare professionals in Pokhara found that around two-thirds of female community health volunteers lacked understanding of breast self-examination, which improved with an educational intervention program.¹² The findings of the aforementioned studies were consistent with our findings, which showed that greater education levels and focused educational interventions were associated with increased knowledge of breast self-examination. It is recommended that BSE knowledge and practice be integrated into the curriculum of middle and high schools, as well as university student programs.

The study looked at the association between 390 ladies of various ages and whether they had ever done BSE. The data indicated that 60.9% of females who practiced BSE were between the ages of 20 and 30, 23.27% between the ages of 30 and 40, 24.42% between the ages of 40 and 50, 13.06% between the ages of 50 and 60, and 6.12% beyond the age of 60. A meta-analysis of breast self-examination awareness found that 9766 Pakistani women who participated in 18 separate trials had substantially low levels of knowledge about breast cancer. Breast self-examination (BSE) is common, and 28.7% of women have ever undergone a clinical breast exam (CBE). In Pakistan, less than one-third of women do frequent breast self-examination, and fewer than one in every five women have ever had a clinical breast examination.¹³ A survey in Varanasi, Uttar Pradesh,

Table 3: Frequency of SBE Practice by Education level

Educational level	Once a month	Once in 3 months	Once in 6 months	Once a year	Total
Matriculation	13%	-	12.28%	75.72%	100%
Intermediate	50.00%	50.00%	-	-	100%
Bachelors	44.98%	24.99%	18.74%	37.48%	100%
Masters	45.38%	34.03%	21.27%	25.52%	100%

India found that just 15.6% of females aged 18-65 had ever performed BSE once in their lives.¹⁴ Research in Southern Ethiopia found that the prevalence of breast self-examination was 5.2%, with only 46.2% of participants completing it on a regular basis.¹⁵ Another research looked at breast self-examination practices among 567 females aged 20 to 60 in Jazan Region, Saudi Arabia, and found that only 205 (36.2%) of them did so on a regular basis.¹⁶ Another study examined the knowledge and practice of BSE among 720 randomly selected female undergraduates aged 16 to 28 years in Nigeria and discovered that 98.9% had heard of BSE but only 32.5% performed this examination accurately as required due to their lack of knowledge about the correct BSE procedure.¹⁷ According to the findings of the research and the studies listed above, age had no influence on BSE practice; moreover, BSE practice was associated to a greater understanding of how to execute it correctly.

The study also looked at how different education levels influenced the occurrence of BSE. Among the Matriculation study group, 25.42% exercised BSE once a month and once every six months, while 75.72% did so once a year. Females who had completed Intermediate level studies performed BSE once a month, with 50% doing so once every three months. Among the undergraduate (Bachelors) group, 44.98% practiced BSE once a month, 24.99% once every three months, 18.74% once every six months, and 37.48% once a year. 45.38% of the target population who completed a postgraduate (Masters) degree practiced BSE once a month, 34.03% once every three months, 21.27% once every six months, and 25.52% once every year.

Research in Tehran, Iran, found that BSE and clinical examination practice improved after teaching sessions. Another research done in Thailand during the COVID-19 epidemic suggested that it is critical to raise BSE understanding in order to boost its use among Thai women. Another study found that 75.5% of participants had ever performed BSE, and approximately 74.18% had done so within the last 6 months, implying that public awareness campaigns about breast cancer should be implemented through health education programs and printed materials, with a particular emphasis on women living in rural areas. A study on undergraduate female students (aged ≥ 18 years) from three University of Sharjah campuses found that participants performing BSE were particularly low due to being busy and not knowing the right method to do so. This highlights the importance of raising awareness about breast cancer and BSE among young women in the UAE. The findings of the research, which were consistent with

those of the previous studies, revealed that a higher educational level and objective educational mediation were associated with a higher frequency of breast self-examination practice.

Conclusion

The study's results reveal that younger demographics are more conscious of breast self-examination (BSE). There is also a favourable association between educational achievement and BSE awareness. The study's findings indicate that older age groups, especially those in middle to late adulthood, had a greater incidence of BSE practice. Furthermore, individuals with advanced educational degrees, notably at the bachelor's and master's levels, have a higher percentage of women participating in BSE.

Ethical Approval: The IRB/EC approved this study via letter no IRB/2024/179 dated September 26, 2024.

Conflict of Interest: *None*

Funding Source: *None*

Authors' Contribution

AK, MAK: Conception

FS, MS: Design of the work

AA, MR: Data acquisition, analysis, or interpretation

FS, MS, AA, MR: Draft the work

AK, MAK: Review critically for important intellectual content

All authors approve the version to be published

All authors agree to be accountable for all aspects of the work

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