# The Characteristics Of Female Students In Allied Health Sciences Institution Who Performed Routine Breast Self-Examination (Bse) In Indonesia And Pakistan

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## Abstract

Breast cancer is a major public health concern worldwide. The incidence of breast cancer remains high. The mortality rate and prognosis for breast cancer can be improved with early diagnosis and therapy. Self-examination of the breasts is a common method of early diagnosis for women's health issues. This study aimed to explore the characteristics of female students in Allied Health Sciences Institution who performed regular breast self-examination in Indonesia and Pakistan. After institutional ethics review board approval and informed consent, a quantitative survey recruited 430 female students from Allied Health Sciences institutions in Indonesia and Pakistan. This study strictly followed the highest level of ethical standards proposed by Helsinki Declaration (Revised 2013). A closed and open-ended questionnaire was used to collect data on their demographics and characteristics. The questionnaire was distributed online using a google form. Data were analyzed using descriptive analytics . The findings of this study showed that n=395(91.86%) were aged 18-35 years, and 51% were from rural. 49% from urban areas. The majority of participants were single or never married (88%). Most participants were undergraduate students (95.35%). Almost half participants did routine BSE once a month (48.6%). Only 16% were very confident about doing a breast self-examination. Nearly half respondents had never seen a doctor (47%). A positive attitude was seen among all the students. Additionally, most students performed a weekly breast examination. Evidently, more than half of the participants lacked self-assurance when it came to performing a breast assessment. We found a significant percentage who had never been to a doctor for medical attention. Public campaigns to raise awareness and urge female student in allied health science to regularly see their doctors and engage in BSE are so crucial**.**

**Keywords**: attitude, allied health sciences, breast cancer awareness, breast self-examination, students

## 1. Introduction

Breast cancer remains the top cause of cancer-related deaths among women aged 20-59. In 2020, 2,3 million women were diagnosed with breast cancer worldwide, resulting in 685000 deaths. As of the end of the year 2020, 7.8 million women have been diagnosed with breast cancer within the previous five years, making it the most prevalent cancer in the world. There are more lost disability-adjusted life years (DALYs) by women to breast cancer globally than any other type of cancer. In every country globally, breast cancer affects women of any age after puberty, but the incidence rate increases with age [1]. Breast cancer reduced the women's quality of life (QoL); the QoL was influenced by age, marital status, education, and financial situation [2].

The development of breast cancer is higher for those who have risk factors. There are several risk factors for breast cancer, from the most to the least, including aging, family history, reproductive factors, estrogen, and lifestyle [3]. These are the condition that is more likely to have a higher risk of breast cancer: older age (40-60), women with a mother or sister who has breast cancer, low parity, early menarche, late menopause, early age at first pregnancy, have a higher level of endogenous and exogenous estrogens, and modern lifestyles such as excessive alcohol usage and high-fat consumption [3]. Another study found that breast cancer risk factors were family history, delayed puberty, delayed menarche, delayed marriage age, and lactation failure [4]. Furthermore, late menopause age, hormone replacement therapy (HR), use of contraceptives, obesity, alcohol consumption, smoking, unbalanced diet, environment toxicants, and no physical activity also become the risk of being diagnosed with breast cancer [4].

To prevent the worst condition of prognosis breast cancer, screening program, and early detection is essential. Population-based breast cancer screening programs aim to reduce breast cancer mortality through early detection and successful treatment. Women's health outcomes could be improved through the effective implementation of population-based screening programs, which is urgently required [4].

Screening Is important. Although screening did not reduce the rate of death from all causes, the risk of advanced breast cancer was decreased in women aged 50 or older (RR, 0.62 [CI, 0.46 to 0.83]) [5]. One kind of screening is breast self-examination. Although Mammography screening is the most effective approach to detect early-stage breast cancer and reduce death [6], a study in Scotland showed that BSE is also beneficial [7].

Breast self-examination (BSE) and physical breast examination (BPx) had a substantial effect in detecting breast cancers at early stages (<3); demonstrating that they are excellent screening tests with high availability and low costs that may be utilized at the community level [7]. Despite the benefit of BSE, a study in Indonesia found that the level of awareness about breast cancer was inadequate [8].

Health-allied institution provides huge areas of education in terms of health, including a glance at breast cancer. Female students in health allied institutions are

expected to be more aware on breast cancer and do BSE more frequently. A study in Ghana among future health professionals, students were aware of breast cancer at a rate of 73 percent, with social media being the most important source of information (64.4%). Regarding breast inspection, 42.6% had performed BSE, 10.1% had done Clinical Breast Examination (CBE), and 2.3% had received mammography within the prior three years [9]. Unfortunately, his study on the characteristics of students who performed BSE is not available, especially in Indonesia and Pakistan. Understanding the characteristic of a female student in Allied health science who did routine BSE seems essential to get a deeper understanding and preparing a more beneficial program to support female allied health science students to perform BSE. This study aimed to analyze the characteristics of female students in Allied Health Sciences Institution who performed routine breast self-examination in Indonesia and Pakistan.

## 2. Method

This study was a descriptive quantitative survey.

### *Participant and recruitment*

The population of this study was the students of allied health science institutions in Pakistan and Indonesia. We recruited 430 samples of female students in Allied Health Sciences institutions in Indonesia and Pakistan. The sample met the inclusion and exclusion criteria. The Inclusion criteria of participants were: female Students of allied health sciences, undergraduate or postgraduate students, did breast self-examination (BSE) at least once a month and were able to fill out the online questionnaire. The exclusion criteria were patients with a history of breast cancer, a critical illness, and comatose patients.

### *Survey instrument*

We used a close and open-ended questionnaire to collect data of participants' demographics and characteristics based on an online platform, google form. The questionnaire contains seven questions: "What is your age?", "What is your residence?", "What is your marital status?", "What is the highest level of education qualification you have obtained?", "How often do you check your breasts?", "Are you confident you would notice a change in your breasts?", "Have you ever been to see a doctor about a change you have noticed in one of your breasts?", and "If you found a change in your breast, how soon would you contact your doctor?".

### *Ethical consideration and Data collection*

This research received ethics approval from The Committee Ethic of University Pekalongan, No. 189/B.02.01/KEPK/XII/2022.

The data collection process was conducted by distributing the questionnaire through WhatsApp from December 2022 – January 2023. This research was completely voluntary. It means that participants could refuse and withdraw at any time. We also provided informed consent in the first age of the online questionnaire, so potential participants could thick whether they agreed or disagreed with being participants. If they did not agree to participate, they could refuse to participate. The acquired data were stored on the researcher's laptop. We also published anonymously for academic objectives.

*Data analysis and interpretation*

Data were analyzed using SPSS 25 to analyze the proportion and percentage of each variable. The data is then presented in a bar and pie diagram to make it readable.

## 3. Results and discussion

### Results

Table 1. Respondent age (N= 430)

| Variables | frequency (n) | percentage (%) |
|---|---|---|
| 17 years and below | 6 | 1.40 |
| 18-35 years | 395 | 91.86 |
| 36-49 years | 28 | 6.51 |
| 50 years and above | 1 | 0.23 |
| N (%) | 430 | 100.00 |

Table 1 shows that most participants were 18-35 years old. The mean age was 17 and max was 51 ($\pm$6.075).

Table 2. Respondent Age (N=430)

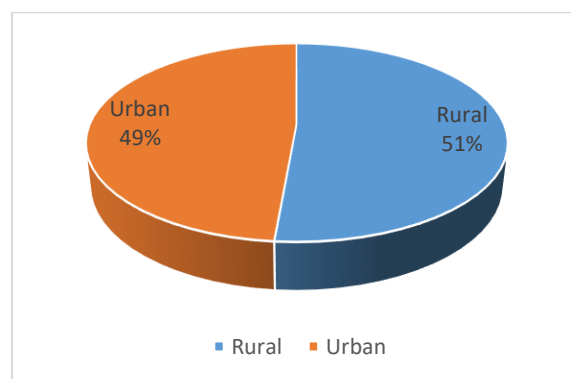| | Min | Max | Mean | | Std. Deviation | Variance |
|---|---|---|---|---|---|---|
| | | | Statistic | Std. Error | | |
| Age | 17 | 51 | 22.13 | 0.293 | 6.075 | 36.9 |



Fig 1. Residence (N= 430)

The proportion of participant residents was quite similar between those from rural and urban areas, with percentages 51% and 49%, respectively.
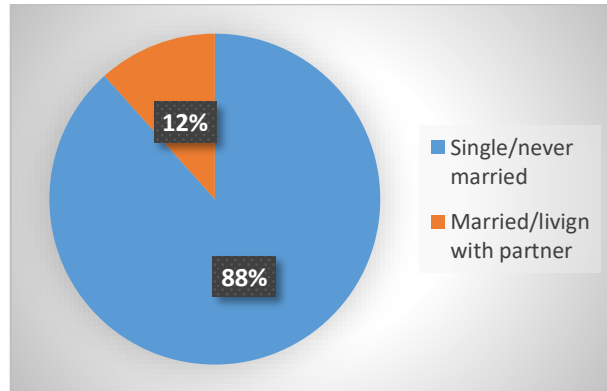
Fig 2. Marital status (N= 430)

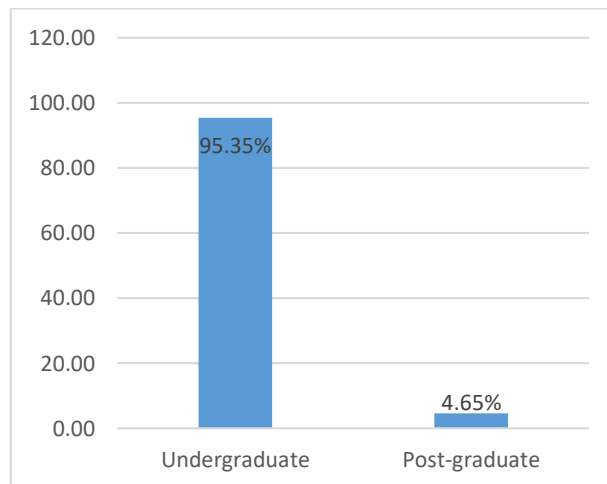Most participants were single or never married, counted as 88%.



Fig 3. Education level (N= 430)

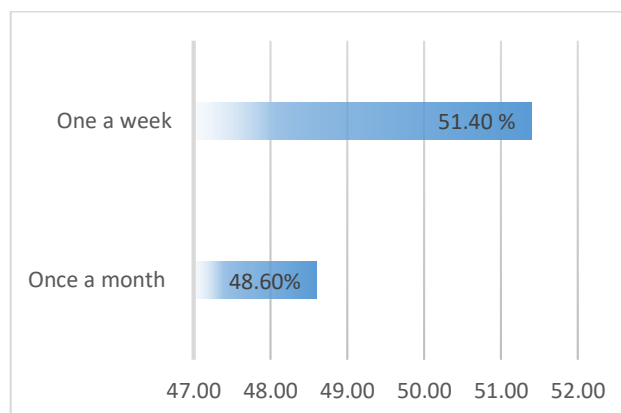Figure 3 shows that most participants came from undergraduate students (95.35%).



Fig 4. Response of respondent to the question "How often do you check your breasts?"
(N= 430)

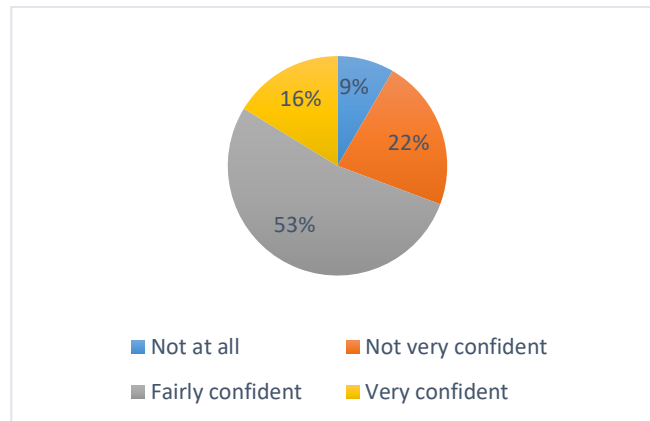More than half participants did routine BSE weekly, counted at 51.40%.



Fig 5. Response of respondent to the question "Are you confident you would notice a change in your breasts?" (N= 430)

More than half respondent had lower degree of confident to check their breast, they stated that they had only "fairly confident" (53%). Only about a sixth of them were confident about breast self-examining.
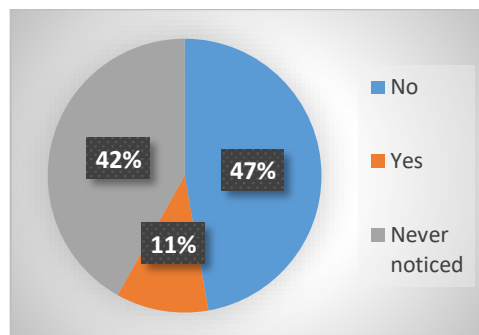


Fig 6. Response of respondent to question: have you ever been to see a doctor about a change you have noticed in one of your breasts? (N= 430)

Figure 6 shows that a tenth of respondents visited a doctor due to changes in their breasts (11%). Almost half respondents had never seen a doctor (47%), and 42% had never noticed their breasts.

**Discussion**

This study aimed to explore the character of a female student of Allied Health Sciences who performed routine BSE in Indonesia and Pakistan. The study indicated that age, residence, marital status, educational level, frequency of checking breast cancer, confidence, and met doctors about change varied.

First of all, the age of participants was mostly between 18-35 years because the majority of students who participated in this study were undergraduate students. Although the prevalence of breast cancer is over 40 years [1], the highest cases are 70-74 years [10], and the median age is 62 [11]. Still, understanding and awareness of breast cancer at a younger age might benefit because breast cancer cases might occur in more youthful generations. Based on the Center for Disease Control and Prevention (CDC) report, in 2019, the cases of

breast cancer among 20-24 and 25-29 were 184 and 1,192, respectively [10]. Routine screening will help women feel every breast change and get early treatment for every single problem. Regarding education, the participants who participated in this study were a female students in higher education (undergraduate and postgraduate students). Students in higher degree institution should do the BSEn. Based on a meta-analysis of eight cohort studies involving over ten million women, those with a higher education level had a significantly increased risk of having breast cancer than women with a lower education level (pooled relative risk 1.22 [95% CI, 1.14-1.30]) [12].

Regarding areas, the participants who did routine breast cancer came from rural and urban areas. Although a study shows that the proportion of women diagnosed with distant stage breast cancer was highest in the rural residency category. Furthermore, even after controlling for age, race, tumor grade, receptor status, and insurance status, patients who lived in both major and small metropolitan regions had a statistically significantly lower probability of being diagnosed later than rural patients [13]. However, In both rural and urban groups, a waist-to-hip ratio of 0.95 compared to 0.84 was highly linked with the risk of breast cancer($OR_{urban}$ = 4.10, 95% CI 3.03-5.56; $OR_{rural}$ = 3.01, 95% CI 1.85-4.90 [14].

This study also found that most students joined in this research were single or never married. It could be understood because majority of them also still in undergraduate with younger age. Although a systematic review found that it cannot be concluded that marital status is an independent risk factor for breast cancer [15], some studies found a correlation between marital status and breast cancer risk. A study in United States population showed that when compared to married women, single women were 1.18 times more likely to be diagnosed at a later stage (95% CI: 1.15–1.20). Moreover, adjusting for other causes of death, single women were more likely to die from breast cancer and more likely to die overall than married women at all AJCC stages [16]. Furthermore, death rates are higher for unmarried breast cancer patients than for married patients. This link depends on race/ethnicity, tumor subtype, and nSES [17]. Thus, doing BSE is important for single or never married.

This study indicates that more than half of respondents did routine BSE once a week, and almost half did it once a month. This practice is a good practice. The recommendation of doing BSE is once a month. Screening should be done at the same time every month, ideally at the end of the patient's period. This time is considerable because the breast structure is likely to change depending on when the exam is done and the menstrual cycle [18]. If the patient doesn't have periods, the exam should be done on the same day each month [19]. If a woman discovers a persistent breast lump or any other changes, she must consult a doctor promptly [20]. Early detection of breast cancer is important for ensuring that treatment plans will work and cancer will be cured. Formal Breast Self-Examination screening has not been shown to improve patient outcomes, but if a patient notices a change or something that doesn't seem right with their breasts, they should tell their healthcare team so they can look into it further [18].

Half of the respondents were fairly confident in checking their breasts, and only 16% who very confident. Confidence is important in performing some activities, including BSE. Self-confidence development is critical to foster competent clinical decision-making [21]. Confidence means 'to feel comfortable, be relaxed', and 'feeling secure' [22]. These feelings will help female students to perform BSE better. Unfortunately, this study found only about a sixth feel very confident about performing BSE. Support and education are needed to grow their confidence in the future.

Regarding the response on the question: have you ever seen a doctor about a change you have noticed in one of your breasts?, almost half participants didn't visit the doctor and half didn't notice the changes in the breast. It is okay not to see a doctor if there are no changes in the breast. The problem is if they found changes but did not meet the doctor. Because it will be a problem. The purpose of BSE is to early detection, and every change should be follow up by visiting doctor to consult and receive further examination [20]. Thus, its important to educate the female student to report all changes and seek help from the doctor. Therefore, the early management of breast cancer can be taken, and further complications can be prevented.

While the American Cancer Society does not advocate routine clinical breast exams or self-exams as part of a routine breast cancer screening plan, this does not indicate that they should never be performed [23]. In some cases, healthcare practitioners may perform clinical breast exams and give risk and early detection counseling, particularly for women at higher-than-average risk. And other women may still choose to perform regular self-exams to keep track of how their breasts appear and feel [23].

**Conclusions**

This study found that the majority of participants were aged 18-35 years, single, and undergraduate students. More than half were from a rural areas. Almost half participants did routine BSE once a month and never saw the doctor. Only a small percentage of them were very confident to perform breast self-examination. Breast screening programs are essential. Allied Health Science University/College should encourage their female student to be confident in performing breast self-examination on monthly basis. Any seminar or training that focuses on the benefits and method of breast self-examination might be needed, so that female students can put their newfound knowledge to use in their daily lives and do BSE monthly..

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