# Breast Cancer Knowledge And Screening Practices Amongst Female In Bandung City, West Java, Indonesia

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## Abstrak

Kanker payudara sejauh ini merupakan kanker paling umum pada wanita di seluruh dunia.1 Ini adalah salah satu penyebab utama kematian akibat kanker pada wanita dan merupakan 15% dari kematian akibat kanker wanita. Di Indonesia, 40 dari 100.000 wanita baru terdiagnosis kanker payudara setiap tahunnya. Di Jawa Barat, kejadian kanker payudara sekitar 1000 orang dari semua penduduk (48 juta) setiap tahun di mana 70% dari semua pasien berada di kelas ekonomi menengah ke bawah. Dari jumlah tersebut, hanya 30% yang mengunjungi fasilitas kesehatan dan diperiksa oleh 16 ahli bedah onkologi di Jawa Barat dengan rata-rata lama pelayanan 2 minggu. Lebih lanjut, sebagian besar perempuan (70%) didiagnosis pada stadium akhir yang dapat menjelaskan mengapa Indonesia memiliki angka kematian yang lebih tinggi (16,6/100.000) dibandingkan dengan angka global (12,9/100.000). Meski tidak lagi direkomendasikan oleh WHO, pemeriksaan payudara sendiri (SADARI) masih dianggap sebagai skrining kanker payudara dan dipromosikan secara luas oleh pemerintah Indonesia hingga saat ini. Selain itu, Clinical Breast Examination (CBE) saat ini juga telah dimasukkan dalam pedoman nasional Indonesia sebagai program skrining kanker payudara yang direkomendasikan. Populasi penelitian ini adalah seluruh wanita berusia 16 tahun ke atas di kota Bandung Jawa Barat. Prosedur pengambilan sampel nonprobabilitas (kenyamanan) digunakan untuk mendapatkan ukuran sampel yang diperlukan. Total sampling dari semua pekerja perempuan yang memberikan persetujuan mereka untuk penelitian dilakukan. Kuesioner terbuka adalah metode untuk mengumpulkan informasi kuantitatif dan/atau kualitatif. Penelitian ini menggunakan kuesioner sebagai dasar pengambilan data, adapun total populasi yang termasuk dalam penelitian ini adalah 101 partisipan. Dari 101 peserta yang terlibat dalam penelitian ini, demografi yang lebih muda merupakan proporsi terbesar dari responden, dengan usia rata-rata 37,87 + 12,08 tahun, 54,45% dari populasi berusia di bawah 40 tahun. Hampir semua peserta pernah mendengar atau mengetahui tentang kanker payudara (99%), dan dari 100 peserta, 50 di antaranya memperoleh pengetahuan dari buku (49,5%), media sosial, dan informasi pendidikan berbasis rumah sakit. Sebagian besar peserta juga tidak memiliki kerabat yang didiagnosis menderita kanker payudara. Kesimpulannya, pengetahuan umum tentang kanker payudara masih rendah kecuali mamografi; Namun, di antara peserta yang mengetahui SADARI dan CBE, mereka memiliki skor pengetahuan yang baik tentang skrining kanker payudara dan prosedur terkait. Temuan di atas menunjukkan bahwa informasi mengenai SADARI dan CBE sangat diperlukan untuk disampaikan kepada masyarakat di Kota Bandung, Jawa Barat, Indonesia.

**Kata Kunci:** *Kanker Payudara, Pemeriksaan Payudara Sendiri, Pemeriksaan Payudara Klinis, Skrining*

**Abstract**

Breast cancer is by far the most common cancer in women worldwide.1 It is one of the leading causes of cancer mortality in women and constitutes 15 % of female cancer deaths. In Indonesia, 40 out of 100,000 women are newly diagnosed with breast cancer each year. In West Java, the incidence of breast cancer is about 1000 person of all population (48 millions) every year in which 70% of all patient were in low middle economy class. Out of this number, only 30% visits the healthcare facilities and assessed by 16 oncology surgeon in West Java with mean duration of service 2 weeks. Furthermore, most of these women (70%) are diagnosed at late stage which may explain why Indonesia has a higher mortality rate (16.6/100,000) compared with the global rate (12.9/ 100,000). Although no longer recommended by the WHO, breast self-examination (BSE) is still perceived as breast cancer screening and widely promoted by the Indonesian government up to now. Besides, clinical breast examination (CBE) has also currently been added in the Indonesia national guideline as a recommended breast cancer screening program. The study population is made up of all the female aged 16 and above in Bandung city of West Java. A nonprobability (convenience) sampling procedure was used to obtain the requisite sample size. Total sampling of all the female workers who gave their consent for the study was done. An open questionaire is a methode to collect quantitative and/or qualitative information. This study used a questionnaire as the basis for data retrievement, as for the total population included in this study were 101 participants. Out of 101 participants involved in this study, younger demographic makes up the biggest proportion of the respondents, with a mean age of 37,87 + 12,08 years, 54.45% of the population is under 40. Almost all of the participants ever heard or aware of about breast cancer (99%), and out of 100 participants, 50 of them obtained the knowledge from books (49.5%), social media, and hospital – based educational information. Most of the participants also did not have relatives that were diagnosed with breast cancer. As summary, the overall knowledge towards breast cancer is low except for the mammography; however, among participants that know BSE and CBE, they do have good knowledge score about breast cancer screening and related procedures. The findings above indicate that information regarding BSE and CBE are fully needed to be delivered among citizens in Bandung city, West Java, Indonesia.

**Keywords:** *Breast Cancer, Breast Self-Examination, Clinical Breast Examination, Screening*

## INTRODUCTION

Breast cancer is by far the most frequent cancer in women worldwide.(Al-Zalabani et al., 2018) It is one of the leading causes of cancer mortality in women and constitutes 15 % of female cancer deaths (Choridah et al., 2021). The incidence rates of breast cancer are increasing in most countries at a younger age than ever before, and these changes are usually greatest where the rates had been previously low (Mahfouz et al., 2013).

In Indonesia, 40 out of 100,000 women are newly diagnosed with breast cancer each year (Solikhah et al., 2021)·(Choridah et al., 2021). Furthermore, most of these women are diagnosed at a late stage which may explain why Indonesia has a higher mortality rate (16.6/100,000) compared with the global rate (12.9/ 100,000) (Wahidin et al., 2022). A generally apprehensive attitude towards cancer treatment in Indonesia, including alternative medicine seeking behavior, has also led to unfavorable clinical outcomes for cancer patients (Choridah et al., 2021; Ng et al., 2011; Nindrea et al., 2019).

In Indonesia, a significant number of women are diagnosed for breast cancer in the advanced stage of the disease due to lack of knowledge and awareness, insufficient social support, numerous psychosocial factors, and, often times, the socio-characteristics of breast cancer patients (Dewi et al., 2019; Kardinah et al., 2014). A large-scale study in Ghana found that the educational background of a breast cancer patient is significantly associated with breast cancer screening (Kardinah et al., 2014).

Although no longer recommended by the WHO, breast self-examination (BSE) is still perceived as breast cancer screening and widely promoted by the Indonesian government up to now. Besides,

clinical breast examination (CBE) has also currently been added in the Indonesia national guideline as a recommended breast cancer screening program (Choridah et al., 2021; Nindrea et al., 2019). Breast cancer is affected by multiple risk factors, including family history/genetic background, which accounts for approximately 15 % of all breast cancer cases, hormonal exposures, such as an early age at menarche, late age at menopause, fewer number of children and nulliparity, late age at first birth, little or no breastfeeding, and long-term use of hormone replacement therapy (Al-Zalabani et al., 2018; Fiorica, 2016; Nindrea et al., 2019; Solikhah et al., 2021).

The diagnosis of breast diseases can be achieved like in other clinical conditions using: history, physical examination, and investigation which include cytological or histological confirmation (Dewi et al., 2022; Rahman et al., 2019; Thaineua et al., 2020). Patients with breast lesions may complain of breast pain, breast lump, nipple discharge, nipple retraction, eczema or dermatitis of the areolar area (in Paget's disease), lymphedema of the breast and/or arm and features of metastasis in cases of advanced malignant breast diseases with pulmonary symptoms of cough or dyspnea, axillary lymphadenopathy, osseous deposits with bone pain and swellingm hepatomegaly and ascites (Dibisa et al., 2019; Thaineua et al., 2020; Wahidin et al., 2022). Breast lump which is one of the most common presentation of breast lesion can be detected by means of: breast self-examination (BSE), clinical breast examination (CBE), and mammography. Early detection and prompt treatment offer the greatest chance of long-term survival in patients with breast cancer (Madubogwu et al., 2017; Reményi Kissné et al., 2021).

Breast lump which is one of the most common presentation of breast lesion can be detected by means of: breast self-examination (BSE), clinical breast examination (CBE), and mammography (Kardinah et al., 2014; Ng et al., 2011; Wahidin et al., 2022). Early detection and prompt treatment offer the greatest chance of long-term survival in patients with breast cancer. Mammography, CBE, and BSE are the secondary preventive methods used for screening in the early detection of breast cancer (Reményi Kissné et al., 2021). Cancer screening tests play a pivotal role in reducing breast cancer-related mortalities. The American Cancer Society (ACS) recommends CBE and mammography in the early detection of breast cancer (Madubogwu et al., 2017; Reményi Kissné et al., 2021). According to ACS recommendations, women should know how their breasts normally feel and report any breast changes promptly to their health care providers. BSE is an option for women starting from the early 20s. Beginning in their 20s, women should be told about the benefits and limitations of BSE. The importance of prompt reporting of any new breast symptom to a health professional should be emphasized (Dibisa et al., 2019). Women who choose to do BSE should receive instruction and have their technique reviewed on the occasion of a periodic health examination (Ng et al., 2011; Rahman et al., 2019).

Beginning at age of 40 years, discussion during CBE should include information about screening mammography. For average-risk women, aged 40 and younger, earlier detection of palpable tumors identified by CBE can lead to earlier therapy (Thaineua et al., 2020). After age 40, when mammography is recommended, CBE is regarded as an adjunct to mammography (Dewi et al., 2019). There may be some benefit to performing the CBE shortly before the mammogram (Dibisa et al., 2019; Madubogwu et al., 2017; Reményi Kissné et al., 2021). Therefore, this study aims at accessing the knowledge, attitude, and practice of breast cancer screening among female in Bandung City, West Java, Indonesia.

**METHOD**

This is a descriptive cross sectional study carried out among female health workers at a Tertiary level University Teaching Hospital. The study population is made up of all the female aged 16 and above in Bandung city of West Java. A nonprobability (convenience) sampling procedure was used to obtain the requisite sample size. Total sampling of all the female workers who gave their consent for the study was done. A structured, pretested, self administered questionnaire was the tool for data collection. A verbal informed consent was obtained from all respondents. Information was collected on sociodemographic characteristics, knowledge of breast cancer, knowledge and practice of BSE, CBE, and mammography

The questionnaires were sorted out for completeness and data cleaning after which data were entered into and analyzed using Statistical Package for Social Sciences (SPSS) version 25. There was cross tabulation of variables with level of statistical significance set at 95% confidence interval. Statistical analysis for the correlation coefficient in this study was obtained by using Spearman test as this study conducted a non – parametric method.

**RESULT AND DISCUSSION**

This study used a questionnaire as the basis for data retrieval, as for the total population included in this study were 101 participants. Out of 101 participants involved in this study, younger demographic makes up the biggest proportion of the respondents, with a mean age of 37,87 + 12,08 years, 54.45% of the population is under 40 (Table 1). Almost all of the participants are married (81.2%).

**Table 1 : Sociodemographic data of respondents**

| Variables | N (%) |
|---|---|
| **Age (years)** | |
| 20-29 | 28 (27,72%) |
| 30-39 | 27 (26,73%) |
| 40-49 | 27 (26,73%) |
| 50-59 | 15 (14,85%) |
| 60-69 | 4  (3,96%) |
| Mean + SD | (37,87 + 12,08) |
| **Marital status** | |
| Single/never married | 16 (15,8%) |
| Married | 82 (81,2%) |
| Widowed | 3 (3,0%) |
| **Highest educational level** | |
| Primary school completed | 8 (7,9%) |
| JSS completed | 14 (13,9%) |
| SSS completed | 58 (57,4%) |
| Tertiary school completed | 17 (16,8%) |
| Others | 4 (4,0%) |
| **Occupation** | |
| Ward maid | 72 (71,3%) |
| Labour | 1 (1,0%) |
| Civil Servant | 3 (3,0%) |
| Others | 25 (24,7%) |

The nearest healthcare facility on most of the participatns is the primary healthcare (86.1%), followed by the general physician practice, specialists, and rarely hospital. Nearly half of the patients do not use any transportation modalities, followed by motorcycle (Table 2).

**Table 2 Accessibility to health care fascilities**

| Variable | N (%) |
|---|---|
| **What's kind of the nearest health care facility?** | |
| Primary health care | 87 (86,1%) |
| General Physician practice | 9 (8,9%) |
| Specialist doctor practice | 2 (2,0%) |
| Hospital | 2 (2,0)% |
| Others | 1 (1,0%) |
| **Transportation** | |
| Walking | 53 (52,5%) |
| Motorcycle | 41 (40,6) |
| Car | 3 (3%) |
| Public transportation | 4 (4%) |
| **Travelling time (minute)** | |
| Less than 30 minute | 88 (87,1%) |
| More than 30 minute | 13 (12,9%) |

Almost all of the participants ever heard or aware of about breast cancer (99%), and out of 101 participants, 50 of them obtained the knowledge from books (49.5%), social media, and hospital – based educational information. Most of the participants also did not have relatives that were diagnosed with breast cancer (Table 3).

**Table 3. Respondents'knowledge of breast cancer**

| Variable | N(%) |
|---|---|
| Ever heard of breast cancer | |
| Yes | 100 (99%) |
| No | 1 (1,0%) |
| Sources of information about breast cancer | |
| Book | 50 (49,50%) |
| Media | 32 (31,68%) |
| Hospital | 4 (3,96%) |
| Lecture | 5 (4,95%) |
| Conference/seminar | 4 (3,96%) |
| Friends | 6 (5,94%) |
| Have any of your relatives been diagnosed of breast ? | |
| Yes | 3 (3,0%) |
| No | 98 (97,0%) |
| If yes, which relative | |
| Mother | 1 (1,0%) |
| Aunt | |
| Sister | |
| Cousin | |

|                          |            |
|--------------------------|------------|
| Grandmother              | 1 (1,0%)   |

The majority of responders, 75 (74,3%), are not aware of BSE ; however the information about in most circumstances was delivered by doctors 73(72,3%). Regarding when to start , most of the participants aware that  should be conducted as early as in puberty period 96 (95,0%), while the other 5 (5%) had no idea whether to start .

Additionally, only 25 instances (24,8%) knew the ideal time to perform BSE, with 33 instances (32,7%) unsure of the ideal time and 40 instances (39,6%) responding that it is best during menstrual flow (Table 4). A respectable number of respondents, 20 respondents (19,8%) say they practice BSE, but nobody report doing it on a regular basis (0 (0%)), and more respondents, 80 (79,2%) report doing it monthly, while the rest doing it rarely/infrequently (Table 4) ; in distinct with their habit, however, most of the respondents know that  should be done weekly 41 (40,6%).

As for the  procedure, almost all of the respondents know that it should be done by theirselves (the individuals ; 93 (92,1%)), while the other respondents believed it must be conducted by healthcare proffesionals such as doctor. If  showed abnormality of the breast, 70 participants (69.3%) will see the doctor, meanwhile the rest, 21 (20,8%), answered they should not do anything regarding the results. The last component of the assessment is the overall perspective of  (BSE), 32 participants (31,7%) had bad perspective of  and 69 participants (68,3%) believed that  is a good / useful thing.

**Table 4. Respondents' knowledge of breast self-examination (BSE)**

| Variable | N(%) |
|----------|------|
| **Ever heard of  (Periksa Payudara Sendiri)?** | |
| Yes | 26 (25,7%) |
| No | 75 (74,3%) |
| **Who taught you ?** | |
| Parents | 1 (1,0%) |
| Teacher | 1 (1,0%) |
| Doctor | 73 ( 72,3%) |
| Nurse | 1 (1,0%) |
| Others | 25 (24,8%) |
| **At what age should  be started?** | |
| From birth | 0 |
| From puberty | 96 (95,0%) |
| From 20 years | 0 |
| From 30 years | 0 |
| After menopause | 0 |
| No idea | 5 (5,0%) |
| **How often should BSE be done?** | |
| Daily | 22 (21,8%) |
| Weekly | 41 (40,6%) |
| Monthly | 29 (28,7%) |
| Yearly | 6 (5,9%) |
| No idea | 3 (3,0%) |
| **What is the best time to do ?** | |

| Variable | N(%) |
|---|---|
| During menstrual flow | 40 (39,6%) |
| A week after period | 25 (24,8%) |
| Pregnant | 0 (0%) |
| Breastfeeding | 3 (3,0%) |
| No idea | 33 (32,7%) |
| **should be done by?** | |
| Doctor | 6 (5,9%) |
| Trained nurse | 0 (0%) |
| The individual | 93 (92,1%) |
| Others | 2 (2,0%) |
| **If you discover any abnormality during , what will you do?** | |
| Pray over it | 0 |
| Do some lab tests | 0 |
| See a doctor | 70 (69.3%) |
| Do nothing | 0 |
| Others | 31 (30,7%) |
| **Benefits of** | |
| Familiar with breast texture | 0 (0%) |
| Early detection of breast cancer | 70 (69,3%) |
| Detection of abnormal changes | 31(30,7%) |
| A good breast exercise | 0 (0%) |
| **Do you practice ?** | |
| Yes | 20 (19,8%) |
| No | 91 (90,1%) |
| **If yes, how often?** | |
| Weekly | 0 (0%) |
| Monthly | 70 (69,3%) |
| Occasionally | 6 (5,9%) |
| Rarely | 25 (24,8%) |
| **If you have been practicing , have you ever discovered any abnormality in your breast?** | |
| Yes | 11 (10,9%) |
| No | 29 (28,7%) |
| Never do it | 61 (60,4%) |
| **If yes, what did you do?** | |
| Pray over it | 0 (0%) |
| MeDo some lab tests | 0 (0%) |
| See a doctor | 80 (79,2%) |
| Do nothing | 21 (20,8%) |
| Others | 0 (0%) |
| **Do you think  is a good practice?** | |
| Yes | 69 (68,3%) |
| No | 32  (31,7%) |

Or CBE is familiar in only 25 (24.8%) of the participants. Approximately half of the patients believed that / CBE is useful to detect breast cancer (58 (57,4%)). Most of the participants in our study agreed that CBE must be conducted by healthcare professionals such as doctors (80 ; 79.2%), followed by trained nurse (20 ; 19.8%) and by the individual (1 ; 1%) ; for the instrument used during , 41 participants (40.6%) knew mammography, followed by using hand (37 ; 36.6%) and ultrasound (23 ; 22.8%), this indicate that nearly half of the participants know  used the mammography. In addition, as for the starting time for , most of the patients had no idea (40 (39,6%)), while 36 patients (35,6%) answered that  must be done weekly.

**Table 5. Respondents' Knowledge And Practice Of Clinical Breast Examination (CBE)**

| Variable | N(%) |
|---|---|
| **Ever heard of ?** | |
| Yes | 25 (24,8%) |
| No | 76 (75,2%) |
| **Is  a useful tool for detection of breast Cancer?** | |
| Yes | 58 (57,4%) |
| No | 43 (42,6%) |
| **should be done by** | |
| Doctor | 80 (79,2%) |
| Trained nurse | 20 (19,8%) |
| The individual | 1 (1,0%) |
| Others | 0 (0%) |
| **should be done using** | |
| USG | 23 (22,8%) |
| Mammography | 41 (40,6%) |
| Hand | 37 (36,6%) |
| Others | 0 (0%) |
| **How often should  be done?** | |
| Daily | 0 (0%) |
| Weekly | 36 (35,6%) |
| Monthly | 14 (13,9%) |
| Yearly | 6 (5,9%) |
| When abnormality is found on | 5 (5,0%) |
| No idea | 40 (39,6%) |

Mammography awareness was typically high among respondents 82, (81.2 percent ), with 76 patients (75.2%) were aware that mammography may be utilized as a technique for breast cancer early detection. Additionally, 49 (48,5%) of the respondents mentioned that mammography should start at pubertal age, while the remaining respondents gave unsuitable answers (Table 5).

The timing to use mammography was when a lump or mass identified upon , according to 58 patients (57,4%), while only 18 patients (18.8%) participants answered every 3 years, followed by yearly (16 (15,8%)), and the rest were weekly and monthly (4 patients (4%) each) (Table 5).

Among the high awareness regarding mammography, in reality only 28 participants (27,7%) attended the procedure, with the majority did not attend mammomgraphy 73 (72,3%) ; and inadditon, the reasons of the non-attenders were others 54 (53,5%) and not mammography was not available 35 (34,7%).

**Table 6. Knowledge of Mammography**

| Variable | N (%) |
|---|---|
| **Ever heard of mammography?** | |
| Yes | 82 (81,2%) |
| No | 19 (18,8%) |
| **Is mammography a useful tool for early detection of breast cancer?** | |
| Yes | 76 (75,2%) |
| No | 9 (8,9%) |
| No idea | 16 (15,8%) |
| **At what age should mammography be started?** | |
| From birth | 0 (%) |
| From puberty | 49 (48,5%) |
| Sejak Age (years) 20 years old | 12 (11,9%) |
| Sejak Age (years) 40 years old | 9 (8,9%) |
| After menopause | 1 (1,0%) |
| No idea | 30 (29,7%) |
| **At what age should mammography be started?** | |
| Weekly | 4 (4,0%) |
| Monthly | 4 (4,0%) |
| Yearly | 16 (15,8%) |
| Every 3 years | 19 (18,8%) |
| When a lump is found on  or | 58 (57,4%) |
| **Have you ever done mammography?** | |
| Yes | 28 (27,7%) |
| No | 73 (72,3%) |
| **If no, why not?** | |
| Not old enough | 1 (1,0%) |
| Financial constrain | 11 (10,9%) |
| Mammography not available | 35 (34,7%) |
| Others | 54 (53,5%) |

Statistical test was conducted to measure the correlation between the baseline factors towards the measure paramaters about the knowledge of breast cancer and screening practices among female in Bandung city. Overall, no remarkable correlation between participant's baseline characteristics (comprised of age, marital status, highest educational level, occupation, and relatives ever diagnosed with breast cancer), except for the age, marital status, and occupations with the mammography utilization (P = 0,004 ; P = 0,001 ; and P = 0,008), with p value of < 0.05 is defines as significant (Table 9).

Mortality due to breast cancer has been shown to be decreased with screening. However, given Indonesia's poor access to healthcare, mass screening using clinical breast examination (CBE) and mammography is not

feasible as it is in other nations (Lauby-Secretan et al., 2015),(Li & Shao, 2015). As far as we concern, this is the first questionnaire-based study ever conducted in Bandung city, West Java, Indonesia regarding the knowledge of breast cancer and screening among female (comprised of BSE, CBE, and mammography.

According to the results we obtained, most of the participants included in this study are on their third decade (37,87 + 12,08 years old), similar participants characteristic is reported by Solikhah et al (Solikhah et al., 2018) by which the mean age of their participants are 30.01±11.01 years. Similar study conducted by (Al-Zalabani et al., 2018). also involved participants at the similar age range (34.9 ± 12.2). Awareness of females living in Bandung city towards the breast cancer existence is high, but it is not accompanied by the good knowledge regarding its prevention (BSE and CBE).

This study revealed only a quarter of the total respondents that know what BSE is ; in addition, nearly all of the respondents assume BSE is conducted by healthcare professionals, which it must be by theirself (Mekonnen, 2020). Similar low knowledge towards BSE also published by a systematic review based in Ethiopia (Kristina & Salsabila, 2020).

Despite of the knowledge that BSE must be performed weekly, most of our respondents done it monthly, and only 19.8% patients performed BSE, this contradictary results are reported by several similar studies from China, Malaysia, Iran, Cameroon, and United Arab Emirates (Elobaid et al., 2014; Lee et al., 2019; Liu et al., 2014; Suh et al., 2012; Tazhibi & Feizi, 2014). Statistical test conducted by us showing no significant correlation, however, between the baseline characteristics of the participants involved with the knowledge of BSE (Table 7).

Table 7. Association between some characteristics of respondents and their practice of BSE

| Variable | Yes | No | Correlation Coefficient | P Value |
|---|---|---|---|---|
| **Age (years)** | | | | |
| 20-29 | 20 | 5 | | |
| 30-39 | 25 | 6 | 0,017 | 0,863 |
| 40-49 | 18 | 8 | | |
| ≥ 50 | 17 | 2 | | |
| **Marital status** | | | | |
| Single/never married | 15 | 1 | | |
| Married | 63 | 19 | -0,160 | 0,109 |
| Widowed | 2 | 1 | | |
| **Highest educational level** | | | | |
| Primary school completed | 5 | 3 | | |
| JSS completed | 6 | 8 | 0,048 | 0,632 |
| SSS completed | 33 | 25 | | |
| Tertiary school completed | 15 | 6 | | |
| **Occupation** | | | | |
| Ward maid | 55 | 17 | | |
| Labour | 1 | 0 | 0,113 | 0,261 |
| Civil servant | 3 | 1 | | |
| Others | 21 | 3 | | |
| **Have any of your relatives been diagnosed of breast ?** | | | | |
| Yes | 2 | 1 | -0,054 | 0,591 |
| No | 78 | 20 | | |

Regarding CBE, the knowledge level is also similar as in BSE, with only a quarter know what CBE is ; although 57.4% respondents found to be useful, they did not, however, perfomr routine visit or attendant to healthcare

professional to be having CBE. This mismatch somehow resembles with the results reported by some other similar studies (Suh et al., 2012),(Tazhibi & Feizi, 2014). CBE is conducted by the clinical workers using mammograph, a tool that could diagnose breast cancer early in its phase since it has sensitivity of 54% and specificity of 94% (Jatoi, 2003).

Our statistical test as conducted in CBE also did not reveal any significant correlation between respondents' characteristics and the performance of CBE, our finding is in contrary with the study conducted by Chowdhury et al (Rabiei et al., 2022) that several factors that significantly correlated with the knowledge and performance of CBE are : older age, higher education, married status, high breast health literacy, high socieconomic condition, and history of breast problems (Rabiei et al., 2022).

**Table 8. Association between some characteristic of respondents and practice of CBE**

| Variable | Yes | No | Correlation Coefficient | P Value |
|---|---|---|---|---|
| **Age (years)** | | | | |
| 20-29 | 16 | 9 | | |
| 30-39 | 14 | 17 | 0,090 | 0,371 |
| 40-49 | 14 | 12 | | |
| ≥ 50 | 15 | 4 | | |
| **Marital status** | | | | |
| Single/never married | 9 | 7 | | |
| Married | 47 | 35 | 0,071 | 0,480 |
| Widowed | 3 | 0 | | |
| **Highest educational level** | | | | |
| Primary school completed | 5 | 3 | | |
| JSS completed | 6 | 8 | 0,132 | 0,189 |
| SSS completed | 33 | 25 | | |
| Tertiary school completed | 15 | 6 | | |
| **Occupation** | | | | |
| Ward maid | 55 | 17 | | |
| Labour | 1 | 0 | 0,001 | 0,993 |
| Civil servant | 3 | 1 | | |
| Others | 21 | 3 | | |
| **Have any of your relatives been diagnosed of breast ?** | | | | |
| Yes | 2 | 1 | 0,029 | 0,771 |
| No | 57 | 41 | | |

Similar to this, only 64 (40.0%) of the respondents were aware that mammograms should be performed annually. P: 0.020 and 0.000, respectively, demonstrated a statistically significant connection between education level and occupation and mammography awareness (Table 10).

**Table 9. Association between some characteristics of respondents if they ever heard of mamography**

| Variable | Yes | No | Correlation Coefficient | P Value |
|---|---|---|---|---|
| **Age (years)** | | | | |
| 20-29 | 21 | 4 | | |
| 30-39 | 27 | 4 | -0,039 | 0,695 |
| 40-49 | 20 | 6 | | |
| ≥ 50 | 16 | 3 | | |
| **Marital status** | | | | |

| Variable | Yes | No | Correlation Coefficient | P Value |
|---|---|---|---|---|
| Single/never married | 12 | 4 | 0,057 | 0,568 |
| Married | 70 | 12 | | |
| Widowed | 2 | 1 | | |
| **Highest educational level** | | | | |
| Primary school completed | 4 | 4 | 0,142 | 0,156 |
| JSS completed | 14 | 0 | | |
| SSS completed | 46 | 12 | | |
| Tertiary school completed | 20 | 1 | | |
| **Occupation** | | | | |
| Ward maid | 62 | 10 | -0,127 | 0,206 |
| Labour | 1 | 0 | | |
| Civil servant | 3 | 1 | | |
| Others | 18 | 6 | | |
| **Have any of your relatives been diagnosed of breast ?** | | | | |
| Yes | 2 | 1 | -0,077 | 0,443 |
| No | 82 | 16 | | |

**Table 10**. Association Between Some Characteristics Of Respondents And If They Have Ever Done Mammography

| Variable | Yes | No | Correlation Coefficient | P Value |
|---|---|---|---|---|
| **Age (years)** | | | | |
| 20-29 | 6 | 19 | **0,283** | **0,004** |
| 30-39 | 18 | 13 | | |
| 40-49 | 15 | 11 | | |
| ≥ 50 | 13 | 6 | | |
| **Marital status** | | | | |
| Single/never married | 3 | 13 | **0,319** | **0,001** |
| Married | 46 | 36 | | |
| Widowed | 3 | 0 | | |
| **Highest educational level** | | | | |
| Primary school completed | 8 | 0 | -0,125 | 0,214 |
| JSS completed | 8 | 6 | | |
| SSS completed | 24 | 34 | | |
| Tertiary school completed | 12 | 9 | | |
| **Occupation** | | | | |
| Ward maid | 43 | 29 | **-0,264** | **0,008** |
| Labour | 1 | 0 | | |
| Civil servant | 1 | 3 | | |
| Others | 7 | 17 | | |
| **Have any of your relatives been diagnosed of breast ?** | | | | |
| Yes | 2 | 1 | 0,053 | 0,598 |
| No | 50 | 48 | | |

The strengths of study included the fact that the study questionnaire was thorough and included almost all knowledge topics in addition to a wide range of personal and belief barrier factors. A radiologist, an oncologist, oncology surgeon and an epidemiologist are among the experts who have verified the study questionnaire. To the

best of our knowledge, this study is the first to look into breast cancer screening knowledge, practice, and obstacles in the Bandung city, West Java, Indonesia. Additionally, a predictive regression model was employed to evaluate and quantify the most significant barriers related to the study women who did not participate in mammography.

However, the limitations for this study are as follows ; all of the women were chosen from primary health facilities, which shouldn't draw women from different educational and socioeconomic sectors to attend, self-selection bias may have been a limiting factor in this study. However, the sample looked to be representative given the sociodemographic distributions seen in this study, and this feature did not appear to have an impact on the study's conclusions.

## CONCLUSION

As summary, the overall knowledge towards breast cancer is low except for the mammography; however, among participants that know BSE and CBE, they do have good knowledge score about breast cancer screening and related procedures. Mammography is also significantly correlated with marital status, by which married women tend to do and exposed to mammography than unmarried women. The findings above indicate that information regarding BSE and CBE are still needed to be delivered among citizens in Bandung city.

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