

INFORMASI ARTIKEL

Received: March, 01 2026

Revised: March, 06, 2026

Available online: March, 09, 2026

at: <https://e-jurnal.iphorr.com/index.php/mchc>

The effect of early detection of breast cancer education on the knowledge and practice of doing awareness in female students

Mei Anna Ekha Wahyuning , Yuni Purwati*

Aisyiyah University Yogyakarta

Corresponding author: *Email: meiekha249@gmail.com

Abstract

Background: Breast cancer is one of the highest causes of death in women in Indonesia with a prevalence of 41.8% in 2022. However, most women in Indonesia still minimally do their own breast examination (BSE), so their knowledge and practice are still low. Early detection through breast self-examination (BSE) is important to reduce the incidence of breast cancer. Health education is needed to increase the knowledge and practice of BSE in adolescent girls.

Purpose: To determine the effect of early detection of breast cancer education on the knowledge and practice of conducting BSE on female students.

Method: Quasi-experimental research with pretest and posttest non-equivalent control group designs on 50 respondents selected by purposive sampling. The research instruments are in the form of a knowledge questionnaire and a checklist of breast examination practices. Data analysis used the Wilcoxon and Mann Whitney tests.

Results: Posttest showed that most of the knowledge of the intervention group was in the category of sufficient (96%) and less than 1 (4%), and the control group was in the category of sufficient 19 (76%) and less than 6 (24%). While the intervention practice was in the category of good 25 (100%) and the control group was less than 24 (96%), sufficient 1 (4%). The results of the Mann Whitney Test showed a p value of 0.476 (>0.05) in knowledge and 0.000 (<0.05) in practice.

Conclusion: Early detection of breast cancer education has no effect on the knowledge and practice of conducting BSE in female students.

Keywords: Breast Self-Examination; Early Detection of Breast Cancer; Education; Knowledge; Practice.

INTRODUCTION

Breast cancer, also known as Carcinoma Mammariae, is a health problem that grows very quickly (Sari & Setianingsih, 2023). Breast cancer used to be thought to only affect women over the age of 30, but now it has also been found in adolescents. Therefore, it is very important for women to detect breast cancer, by doing their own breast examinations regularly (Jaya, Rosnani, Athiutama, Dwi, Kumalasari, Afdal, & Rahayu, 2025). Breast self-examination is an early detection method that is carried out independently by women, including adolescents, to recognize any

changes or abnormalities in the breasts (Mardiana & Kurniasari, 2021). The increase in the number of breast cancer cases is related to the low knowledge and understanding of adolescents on how to do their own breast examination (Naimah & Mukhoirotin, 2021).

Other research shows that most respondents have low knowledge, so early detection becomes difficult and the chances of optimal treatment are reduced. In addition to knowledge, the practice of SADARI is also important in the early detection of breast cancer

The effect of early detection of breast cancer education on the knowledge and practice of doing awareness in female students

(Yazew, Alemu, & Walle, 2024). The lack of SADARI practice increases the risk of delayed detection of breast cancer, and it will be an advanced stage, associated with poor outcomes (Geremew, Golla, Simegn, Abate, Ali, Kumbi, & Tilahun, 2024).

Based on data from the Global Cancer Observatory (2022), the prevalence of cancer in the world reached a very high mortality rate, namely in Asia 39.1%, Europa 28.1%, North America 16.3%, Latin America and the Caribbean 8.9%, Africa 6.2%, and Oceania 1.5% of deaths due to breast cancer, and ranked 2nd in the world. According to the World Health Organization (WHO) in 2022 in Indonesia itself, the number of breast cancer cases was recorded as 66,271 (41.8%) of the total cases suffering from breast cancer (World Health Organization, 2024). The prevalence of breast cancer in Yogyakarta reached 0.23%, as many as 238 cases. According to the Sleman Regency Health Office, in 2020 there were 1,472 cases (Ministry of Health, Sleman Regency, 2020).

The government, through the Indonesian Minister of Health Regulation in 2021, stipulated legislation Number 34 of 2015 concerning the treatment of breast cancer and cervical cancer. The community and health workers have tried to improve the early detection of breast cancer through breast self-examination (BSE) in the form of counseling activities, training, and demonstrations carried out in schools, health centers, and community service programs (Sari & Setianingsih, 2023).

However, various studies show that these efforts have not been fully successful due to barriers of shame, taboo culture, limited access, and ongoing programs, so the problem of low knowledge and practice of BSE still raises concerns in the community about the delay in breast cancer detection (Lubis, Marpaung, Sari, Ritonga, Hasibuan, Sikumbang, & Hasanah, 2025). Knowledge about SADARI is greatly influenced by several factors, namely education level and health information. Research (Yazew et al., 2024). In addition, demographic characteristics and family history are also related to AWARE knowledge (Manisha & Kaphle, 2023).

The practice of doing BSE is influenced by several factors even though it is related to knowledge, such as attitudes, and cultural norms (Yazew et al., 2024). Early detection education has an important role

because it can increase the knowledge and practice of BSE, Research shows that after getting education, there is a significant increase in Breast self-examination knowledge, attitudes, and practices (Sadoh, Osime, Nwaneri, Ogboghodo, Eregie, & Oviawe, 2021).

Early detection of breast cancer education is to increase the understanding and awareness of young women about the importance of detecting breast cancer early on (Warlinda & samsiar, 2025). In addition, education to detect breast cancer early is a program that provides explanations and exercises to individuals and groups to recognize the early signs of breast cancer (Samiun, Hasanuddin, Bachtiar, Wulandari, Putri, & Mustary, 2024).

Previous research shows that teaching interventions are able to significantly increase BSE knowledge and practice, with the results of the Dependent t-test statistical test obtaining a p-value: 0.000 in knowledge and a p value: 0.016 in this examination practice. These findings show that there is a difference in knowledge about breast self-examination and conscious practice before and after planned teaching interventions in D3 Midwifery students of Tk I Stikes Abdi Nusantara (Marpaung & Anggraini, 2023).

Other research shows that there is a significant increase in the knowledge and practice of doing breast examinations themselves with a value of $p=0.000$, the study shows that there is a difference in knowledge and practice of breast self-examination (BSE) in ITEKES Muhammadiyah students in West Kalimantan (Fauziah, Maesaroh, & Suparti, 2022).

RESEARCH METHOD

This study uses a quasi-experimental design with a Non-equivalent control group research design, pre-test post-test design. The research was conducted on adolescent students at MA Negeri 3 Sleman, in this study the sample size used the mean difference formula. Sampling technique using purposive sampling based on inclusion and exclusion criteria. The number of samples in this study was 25 intervention groups and 25 control groups.

In this study, a knowledge questionnaire was used with the categories of Good (score 76%-100%), fair (score 56%-75%), and poor (score <55%), and a AWARE practice checklist sheet. The intervention

Mei Anna Ekha Wahyuning , Yuni Purwati *

Aisiyiah University Yogyakarta
Corresponding author: *Email: meiekha249@gmail.com

DOI: 10.56922/ mchc.v 4i11.2674

The effect of early detection of breast cancer education on the knowledge and practice of doing awareness in female students

group was given early detection of breast cancer education, while the control group did not receive education. The data obtained were analyzed univariate and bivariate. The normality test in this study used shapiro-wilk, and the statistical test if the

data was not normally distributed using the wilcoxon test and mann whitney test.

This research has received ethical approval from the ethics commission of the Faculty of Health Sciences, 'Aisyiyah University of Yogyakarta (No.5054/KEP-UNISA/XII/2025).

RESEARCH RESULTS

Table 1. Characteristics of Respondents (N=50)

Variable	Intervention (n=25)	Control (n=25)
Age (Mean±SD) (Years)	(16.88±0.33) (16-19)	(16.92±0.88) (16-19)
16	3/12.0	2/8.0
17	22/88.0	23/92.0
18	0/0	0/0
19	0/0	0/0
Skills (n%)		
Yes	3/12.0	0/0
No	22/88.0	25/100

Table 1. show 3 (12.0%) respondents were involved in the intervention group based on the age of 16 years, and 22 (88.0%) respondents were 17 years old. The skills of some respondents have practiced BSE as much as 3 (12%), never 22 (88%). The 16-year-old control group was 2 (8.0%) respondents, and 23 (92.0%) respondents were 17-year-olds. skills as many as 25 (100%) respondents have never done BSE.

Table 2. Based on The Results of the Wilcoxon Test, Knowledge and Practice in the Intervention Group and Control Group

Intervention Groups				Control Group			
Knowledge		Practice		Knowledge		Practice	
Pretest	post-test	Pretest	post-test	Pretest	post-test	Pretest	post-test
Z	P-value	z	P-value	Z	P-value	z	P-value
-2,761	0,006	-4,385	0,000	-2,761	0,006	-4,385	0,000

In table 2, the results of the Wilcoxon test show that the knowledge of the intervention group with a p value of $0.000 < \alpha$ a significance level of 0.05, that there is a difference in knowledge before and after being given early detection of breast cancer education in the intervention group. While the knowledge of the control group showed that the p value of $1,000 > \alpha$ a significance level of 0.05, there was no difference in pretest and posttest knowledge without being given early detection education of breast cancer.

In practice, the intervention group showed that the p value of $0.000 < \alpha$ a significance level of 0.05 that there was a difference in knowledge before and after being given education about early detection of breast cancer in the intervention group. In the practice control group, it was shown that the p value of $0.708 > \alpha$ a significance level of 0.05, there was no difference in pretest and posttest knowledge after being given education about early detection of breast cancer in the intervention group.

Mei Anna Ekha Wahyuning , Yuni Purwati *

Aisyiyah University Yogyakarta
Corresponding author: *Email: meiekha249@gmail.com

DOI: 10.56922/ mchc.v 4i11.2674

Table 3. Based on the Results Of The Mann Whitney Test, Knowledge and Practice In The Intervention Group and Control Group

Intervention Groups				Control Group			
Knowledge		Practice		Knowledge		Practice	
Pretest	post-test	Pretest	post-test	Pretest	post-test	Pretest	post-test
Mean	Z	P-value	Mean	Mean	Z	P-value	Red
26,90	-714	0,476	38,00	26,90	-714	0,476	38,00

In table 3, the results of the Mann Whitney test show that the p value is 0.476 > significance level 0.05. This suggests that there was no significant difference in the level of SADARI knowledge between the intervention group and the control group. Based on the results of the Mann Whitney test, practice shows that the p value is 0.000 < significance level 0.05. This suggests that there are significant differences in BSE practices between the intervention group and the control group.

DISCUSSION

This study showed that there was a significant difference in knowledge in the intervention group before the intervention was given and after the intervention with a p value of 0.000 < a significance level of 0.05. Meanwhile, in the control group, there was no significant difference in the pretest and posttest without intervention with a p value of 1,000 > a significance level of 0.05. previous research which showed that the group that received health education interventions showed a significant increase in knowledge about breast self-examination compared to the group that did not receive health counseling (Philip, Aziz, Larince, & Nabila, 2023).

Early detection education is a communication and information effort that is planned to improve individual knowledge and skills to be able to carry out preventive and detection measures independently, Notoatmodjo (2021). The practice in the intervention group showed a p value of 0.000 < a significance level of 0.05. These results showed that there was a significant difference in the practice of BSE between before and after being given early detection education for breast cancer and breast self-examination (BSE) in the intervention group. Meanwhile, the practice in the control group showed a p value of 0.708 > a significance level of 0.05. This shows that there was no significant difference in the practice of BSE between pretetst and posttest in the control group without receiving early detection education for breast cancer. Other research

which states that the group provided with BSE education and training showed a significant improvement in practice compared to the control group that was not given education (Indargairi, 2024),

In the results of the Mann Whitney test, the knowledge in the intervention group was 26.90 while in the control group it was 24.10 with a p value of 0.476 > a significance level of 0.05 that there was no significant effect of early detection of breast cancer education on the knowledge of the intervention group and the control group. Previous research which states that BSE education in adolescent girls is able to increase knowledge, but the differences between groups are not always significant if the characteristics are relatively homogeneous and the intervention is carried out in a short time (Nugrahmi, Mariyona, & Rusdi, 2022).

The practice in the intervention group was 38.00 while in the control group it was 13.00 with a p value of 0.000 < a significance level of 0.05, that there was a significant influence of early detection of breast cancer education on the practice of doing BSE. Other research which states that BSE education with the demonstration method is more effective in improving practical skills compared to theoretical education (Rachmah, Sari, & Fatmawati, 2025).

Mei Anna Ekha Wahyuning , Yuni Purwati *

Aisyyiah University Yogyakarta

Corresponding author: *Email: meiekha249@gmail.com

DOI: 10.56922/ mchc.v 4i11.2674

The effect of early detection of breast cancer education on the knowledge and practice of doing awareness in female students

CONCLUSION

The results of this study show that the knowledge and practice of doing breast self-examination (BSE) did not have a significant effect on the intervention group and the control group, because the results obtained showed that the knowledge did not increase while the practice increased.

REFERENCES

- Fauziah, A. N., Maesaroh, S., & Suparti, S. (2022). Efektivitas Penyuluhan Berbasis Whatsapp Terhadap Pengetahuan dan Praktek SADARI Saat Pandemi Corona. In Jurnal Formil (Forum Ilmiah) Kesmas Respati (Vol. 7, No. 1, pp. 25-32).
- Geremew, H., Golla, E. B., Simegn, M. B., Abate, A., Ali, M. A., Kumbi, H., & Tilahun, W. M. (2024). Late-stage diagnosis: The driving force behind high breast cancer mortality in Ethiopia: A systematic review and meta-analysis. *PLoS One*, 19(7), e0307283.
- Jaya, H., Rosnani, R., Athiutama, A., Dwi, W., Kumalasari, I., Afdal, A., & Rahayu, M. (2025). Faktor-Faktor Yang Menentukan Perilaku Pemeriksaan Payudara Sendiri (Sadari) Pada Remaja Perempuan. *Media Penelitian Dan Pengembangan Kesehatan*, 35(1), 132-142.
- Lubis, I., Marpaung, A. D., Sari, W. D. C., Ritonga, F. R., Hasibuan, N., Sikumbang, E. S., & Hasanah, N. (2025). Peran Puskesmas Titi Papan Dalam Meningkatkan Kesadaran dan Pelaksanaan Deteksi Dini Kanker Payudara Melalui Program SADARI. *JUKEJ: Jurnal Kesehatan Jompa*, 4(1), 53-62.
- Manisha, B. K., & Kaphle, H. P. (2023). Breast Self-Examination: Knowledge, Practice And Associated Factors Among 20 To 49 Years Aged Women In Butwal Sub-Metropolitan, Rupandehi, Nepal.
- Mardiana, A., & Kurniasari, L. (2021). Hubungan pengetahuan pemeriksaan payudara sendiri (SADARI) dengan kejadian kanker payudara di Kalimantan Timur. *Borneo Studies and Research*, 2(2), 1052-1059.
- Marpaung, N., & Anggraini, N. (2023). Efektivitas Intervensi Pengajaran Terencana terhadap Pengetahuan dan Praktik Pemeriksaan Payudara Sendiri pada Mahasiswa D3 Kebidanan Tingkat I Stikes Abdi Nusantara Jakarta 2022. *Malahayati Nursing Journal*, 5(1), 290-305.
- Ministry of Health, Sleman Regency. (2020). Profil Kesehatan Kabupaten Sleman. Retrieved from: <https://dinkes.slemankab.go.id/wp-content/uploads/2020/09/Profil-Kesehatan-Sleman-2020.pdf>
- Naimah, N., & Mukhoirotn, M. (2021). Pendidikan Kesehatan untuk Meningkatkan Pengetahuan, Sikap dan Kemampuan Praktik Remaja Tentang Pemeriksaan Payudara Sendiri. *Jurnal Insan Cendekia*, 8(2), 80-89.
- Notoatmodjo, S. (2007). Promosi kesehatan dan ilmu perilaku. Jakarta: rineka cipta, 20.
- Nugrahmi, M. A., Mariyona, K., & Rusdi, P. H. N. (2022). Pengaruh Edukasi Kesehatan Terhadap Pengetahuan Remaja Putri Tentang Pemeriksaan Payudara Sendiri (SADARI). *Menara Medika*, 5(1), 40-45.
- Philip, R. L., Aziz, H., Larince, L., & Nabila, U. (2023). Efektivitas penyuluhan sadari menggunakan media video terhadap peningkatan pengetahuan dan sikap remaja putri di wilayah kerja Puskesmas Tanjung Buntung. *Termometer: Jurnal Ilmiah Ilmu Kesehatan Dan Kedokteran*, 1(1), 169-179.

Mei Anna Ekha Wahyuning , Yuni Purwati *

Aisyiyah University Yogyakarta
Corresponding author: *Email: meiekha249@gmail.com

DOI: 10.56922/ mchc.v 4i11.2674

The effect of early detection of breast cancer education on the knowledge and practice of doing awareness in female students

- Rachmah, S., Sari, I. P., & Fatmawati, A. (2025). Gerakan SADARI: Upaya Edukasi Berbasis Komunitas Untuk Meningkatkan Kesadaran Deteksi Dini Kanker Payudara. *Jurnal Pengabdian Masyarakat Bangsa*, 3(8), 4117-4124.
- Sadoh, A. E., Osime, C., Nwaneri, D. U., Ogboghodo, B. C., Eregie, C. O., & Oviawe, O. (2021). Improving knowledge about breast cancer and breast self examination in female Nigerian adolescents using peer education: a pre-post interventional study. *BMC women's health*, 21(1), 328.
- Samiun, Z., Hasanuddin, F., Bachtiar, S. M., Wulandari, R., Putri, S. Z., & Mustary, M. (2024). Edukasi Sadari Sebagai Upaya Deteksi Dini Kanker Payudara Pada Guru dan Siswi. Retrieved from: <https://journal.ummat.ac.id/index.php/jmm/article/view/23415>
- Sari, A. K., & Setianingsih, S. (2023). Upaya Peningkatan Sadari Untuk Deteksi Dini Kanker Payudara Pada Remaja Putri. *Jurnal Lentera*, 3(2), 31-41.
- Warlinda, W., & Samsiar, S. (2025). Peningkatan Edukasi Pemeriksaan Sadari dengan Menggunakan Leaflet untuk Deteksi Dini Kanker Payudara pada Wanita. Retrieved from: <https://jurnal.globalhealthsciencegroup.com/index.php/JPM/article/view/5943#:~:text=Warlinda%2C%20W.%2C%20%26%20Samsinar%2C%20S.%20%282025%29.%20Peningkatan%20Edukasi,Wanita.%20Jurnal%20Peduli%20Masyarakat%2C%207%20%281%29%2C%20197-202.%20https%3A%2F%2Fdoi.org%2F10.37287%2Fjpm.v7i1.5943>
- World Health Organization. (2024). New report on global cancer burden in 2022 by world region and human development level. Retrieved from: <https://www.iarc.who.int/news-events/new-report-on-global-cancer-burden-in-2022-by-world-region-and-human-development-level/>
- Yazew, B. G., Alemu, B. W., & Walle, T. A. (2024). Factors associated with knowledge and practice of breast self-examination among female governmental school teachers in Gondar Town, Northwest Ethiopia, 2019. *Frontiers in Oncology*, 14, 1481714.

Mei Anna Ekha Wahyuning , Yuni Purwati *

Aisyiyah University Yogyakarta
Corresponding author: *Email: meiekha249@gmail.com

DOI: 10.56922/ mchc.v 4i11.2674