Napande: Jurnal Bidan
e-ISSN 2829-8365
Volume 4 Issue 2, 2025, page 51-58
DOI: 10.33860/njb.v4i2.4194
Website: http://jurnal.poltekkespalu.ac.id/index.php/njb
Publisher: Poltekkes Kemenkes Palu

Original Article

The Effect of Peer Education on Knowledge and Attitudes Regarding Breast Self-Examination among Adolescent Girls

Dinar Indri Bakti Salsabila, Triana Sri Hardjanti, Runjati
Departement of Midwifery, Poltekkes Kemenkes Semarang, Central Java, Indonesia
Corresponding author: dinarindribakti@gmail.com

ARTICLE INFO

Article History:
Received: 2025-08-24
Accepted: 2025-15-09
Published: 2025-10-14

Keywords:

Peer Education;
Breast Self-Examination;
Knowledge;
Attitude;
Adolescent Girl;

ABSTRACT

Background: Early detection through Breast Self-Examination (BSE) is an easy and affordable preventive effort. Since peers strongly influence adolescents' health behaviors, peer education is considered an effective way to increase their knowledge and attitudes toward BSE.
Method: This research design is a quasi-experimental study with a pretest-posttest control group. The number of respondents was 42 female adolescents, divided into 21 people each in the intervention and control groups. The intervention group was given peer education and the control group was only given a leaflet, then the group's knowledge and attitudes were measured before and after the intervention, and data were collected using a questionnaire. Sampling used simple random sampling based on inclusion criteria, namely 10th grade students, students who were present during the study, and willing to be respondents.
Result: There were differences in intervention group after being compared with the control group. The results showed that the average increase in knowledge in the intervention group was 5.05, while in the control group it was 3.52, with a p-value of 0.004 (<0.05). The average increase in attitude scores in the intervention group was 6.71 compared to 2.86 in the control group, with a p-value of 0.001 (<0.05).
Conclusion: The health education intervention was effective in improving respondents' knowledge and attitudes compared to the non-intervention group. Therefore, it is recommended that similar health education programs be implemented more widely in the community and that further research be conducted to assess their long-term effectiveness.

©2025 by the authors. Submitted for possible open-access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (https://creativecommons.org/licenses/by-sa/4.0/)

INTRODUCTION

Cancer is the third leading cause of death in Indonesia. According to data from the Global Observation Center (Globocan), there were more than 408.661 new cases and nearly 242.099 deaths in Indonesia in 2022, with breast cancer being the leading cause of death (Kementerian Kesehatan, 2024). Research conducted by Rahmatia Alimun et al. (2024) found that the most dominant risk factors for breast cancer are family history, age at menarche, duration of hormonal contraceptive use, and age at menopause. Women who experience menarche before the age of 12 have a 6.165 times

higher risk of developing breast cancer compared to those who experience menarche after the age of 12. Similarly, women with a family history of breast cancer are also at a 6.165 times greater risk compared to those without such history. In addition to early menarche, benign breast tumors such as fibroadenoma mammae are also risk factors. Patients with fibroadenoma mammae have twice the risk of developing breast cancer in the future compared to women without fibroadenoma. Most fibroadenoma sufferers are aged 18-24. Previous research found that 77.7% of fibroadenoma sufferers were aged 18-24, or in their late teens(Wahyuni and Safutri 2021). This indicates that young age does not eliminate the risk of breast cancer.

Breast cancer can be prevented through Breast Self-Examination (BSE). In an effort to promote prevention, the Indonesian government supports early detection programs, as stated in the Minister of Health Regulation No. 34 of 2015 on the Prevention of Breast and Cervical Cancer. The regulation recommends that BSE be performed monthly, starting from the onset of menstruation, preferably on days 7–10 after menstruation ends. If abnormalities are detected, a clinical breast examination (CBE) should follow(Menteri Kesehatan Republik Indonesia 2015). Public awareness of breast cancer is still lacking. It is proven that 70 percent of patients go to the doctor when they are at an advanced stage and the technique of awareness is still common (Kurniasi 2021). Efforts to detect breast cancer early is very important, because if breast cancer can be found as early as possible and promptly treated appropriately, it will increase the cure which is quite high, namely around 80% - 90% (Sibero, Siregar, and Fitria 2021).

Research conducted by Ernawati et al. (2022) found that 83.3% of adolescent girls have insufficient knowledge about breast self-examination and as many as 69% of adolescent girls have an attitude of disapproval of breast self-examination. This lack of practice is attributed to limited knowledge, low perceived risk, and the fact that most breast cancer information targets adult women. During adolescence, individuals' emotional needs may gradually shift from parents to peers, suggesting that peer-based education could serve as an effective approach to enhance adolescents' participation in health education programs. Adolescents also tend to be more open and trusting when discussing sensitive issues with their peers rather than with adults (Putti Utari, Kostania, and Suroso 2019).Peer support can significantly influence BSE practices among adolescent girls. Those without peer support are 94.451 times more likely not to perform BSE compared to those who receive encouragement from peers (Nuryatma 2024).

Adolescent girls aged 15–19 years frequently discuss reproductive health with peers and peers are among their preferred sources of reproductive health information(Labego, Maramis, and Tucunan 2020). Therefore, trained peer counselors are needed to motivate adolescents to develop healthier attitudes and behaviors. A preliminary study among students at SMK Negeri 11 Semarang showed that 9 out of 10 students did not perform BSE properly, and 6 of them had breast cancer risk factors. These included 5 students who experienced menarche before the age of 12 and 1 student with a family history of breast cancer.

METHODS

This type of research is a quasi-experimental and research design is a pretest-posttest control group design and the sampling in this study using simple random sampling technique. The number of samples from the two groups in this study were 42 adolescent girls with a treatment group of 21 adolescent girl and a control group of 21 adolescent girl. In the intervention group, peer education was delivered by selected peer educators. Prior to delivering the intervention, the peer educators were trained by the researchers three times within one week. Each training session lasted 45 minutes and included evaluation of the material covered. After training, the researchers formed small groups

consisting of 2 peer educators responsible for 7 participants each. Peer education sessions were conducted for 45 minutes. In the control group, participants received only leaflets about BSE. They were instructed to read and understand the contents of the leaflet within 30 minutes.

In this study, the research instrument used was a questionnaire consisting of 15 questions regarding knowledge of breast self-examination and 20 questions regarding attitudes toward breast self-examination. The questionnaire was subjected to validity and reliability testing, which demonstrated satisfactory internal consistency. The Cronbach's alpha values were 0.915 (>0.6) for the knowledge items and 0.900 (>0.6) for the attitude items. These results indicate that both the knowledge and attitude scales of the questionnaire are reliable for measuring breast self-examination-related constructs.

Data were analyzed using univariate, bivariate, and multivariate analyses. The Shapiro-Wilk test was employed to assess data normality, and the Levene test was used to examine homogeneity. The Wilcoxon Matched Pairs test was applied to determine differences in knowledge before and after peer group education within each group, as well as differences in attitudes before and after the provision of leaflet-only media in the control group. For differences in attitudes before and after peer group education, the Related Samples T-Test was used because the data were normally distributed. Furthermore, the Mann-Whitney test was applied to assess the effect of peer group education on adolescent girls' knowledge of breast self-examination, while the Independent Samples T-Test was used to examine the effect of peer group education on their attitudes toward breast self-examination.

The ethical clearance of this research has been study permission form Health Commite of Health Ministry Polytechnic Semarang with number 19/EA/KEPK/2019

RESULTS

The findings are presented in the following tables.

Table 1. Knowledge And Attitudes of Adolescent Girl about Breast Self-Examination Before and After Intervention Peer Education

Variabel	Intervention Peer Education	n	Mean±SD	*p-value*
Knowledge	Before	21	13.24±1.998	<0.001
	After	21	18.29±1.454	
Attitude	Before	21	48.48 ± 3.673	<0.001
	After	21	55.19 ± 4.141	

Table 1 shows in the intervention group, the mean knowledge score increased from 13.24 to 18.29 after peer education. Since the data were not normally distributed, the Wilcoxon Matched Pairs Test was used, yielding a p-value of 0.001 (<0.05). This indicates a significant ($p < 0.001$) difference in knowledge before and after peer education. A similar result was found for attitudes, with a significant improvement ($p < 0.001$).

Table 2. Knowledge and Attitudes of Adolescent Girls About Breast Self-Examination Before and After Leaflet Intervention (Control Group)

Variabel	Intervention Leaflet	n	Mean± SD	*p-value*
Knowledge	Before	21	13.67±1.653	<0.001
	After	21	17.19±1.250	
Attitude	Before	21	48.76 ± 3.060	<0.001
	After	21	51.62 ± 4.141	

Table 2 shows in the control group, the mean knowledge score increased from 13.67 to 17.19 after receiving leaflets. The Wilcoxon Matched Pairs Test showed a p-value of 0.001 (<0.05), indicating a significant improvement in knowledge. Attitudes also showed a statistically significant increase ($p < 0.001$).

Table 3. Differences in the Effect of Intervention in the Treatment Group and The Control Group on the Knowledge and Attitudes of Adolescent Girl About Self-Breast Examination

Variabel	Group	n	Mean± SD	*p-value*
Knowledge	Intervention	21	5.05± 1.596	0.004
	Control	21	3.52± 1.327	
Attitude	Intervention	21	6.71± 1.327	<0.001
	Control	21	2.86± 2.128	

Based on table 3, it can be seen that the average difference in increasing knowledge in the treatment group is 5.05, while in the control group the average increase in knowledge is 3.52. Based on the Mann Whitney test, the p-value was 0.004 (<0.05), this data shows that there is an effect of peer group education on the level of knowledge of adolescent girl about breast self-examination.

DISCUSSION

Knowledge and Attitudes Toward Breast Self-Examination Before and After the Intervention in the Intervention Group

In intervention group, before receiving peer education, 90.5% of respondents in the intervention group already knew that Breast Self-Examination (BSE) can help detect abnormalities in the breast, and 85.7% knew that breast cancer can be detected early through BSE. However, most respondents did not know the correct timing of BSE, with 52.4% answering that it should be performed on the second day of menstruation. After receiving peer education, the majority of respondents knew the correct timing and proper technique for performing BSE. Peer group education was shown to significantly improve knowledge. Previous research conducted by Nursya, Mintarsih Purnamasari, and Wulandara (2024)on anemia reported that peer education can enhance adolescent girls' knowledge about anemia This is because information delivered by peer educators is conveyed in a language style familiar to adolescents, making it easier to understand (Sari, Lajuna, and

Ramli 2021). Peer group education not only provides information but also fosters social bonds and mutual support within the group, which can encourage positive changes in attitudes (Yati 2024).

Knowledge and Attitudes Toward Breast Self-Examination Before and After the Intervention in the Control Group

In the control group, which received only leaflet media, 95.2% of respondents knew that breast cancer could be detected early through BSE. However, most respondents did not know the correct steps of BSE. Questionnaire responses showed that more than 50% were unaware of how to use four fingers during palpation and what to observe, such as abnormal nipple discharge, lumps in the armpit area, or suspicious masses in the breast. After receiving the leaflet, 61.9% of respondents understood that nipple examination should be part of BSE to detect abnormal discharge.

This finding is consistent with research by (Lestari, Haryanti, and Igiany 2021), who reported that leaflets effectively increase knowledge due to their visual format, which encourages active reading and facilitates memory retention. Before the leaflet intervention, 81% of respondents acknowledged the need for vigilance against breast cancer and 95.2% stated they would seek treatment early if abnormalities were found. However, 71.4% still believed they did not need to perform BSE because they had no risk factors and felt healthy. After the leaflet was provided, 76.2% recognized that BSE should be performed even without risk factors. However, 54.2% reported they would only perform BSE if someone close to them also practiced it.

This result aligns with Gilang, Pratiwi, and Lucya (2022), who found that leaflets influenced attitudes toward tuberculosis prevention. Attitudes are internal responses to stimuli or objects, influenced by knowledge and the availability of information. Thus, better knowledge can lead to more positive attitudes (Halmawati, 2023).

The Differences Between the Intervention and Control Groups in Knowledge About Breast Self-Examination

Both intervention and control groups showed good knowledge of BSE after the interventions. However, statistical tests indicated that peer education had a greater impact on improving knowledge than leaflets only.

Peer education is considered an effective strategy for increasing knowledge. This finding is consistent with who reported that peer education effectively improved knowledge of balanced nutrition. Peer education is more effective because it is delivered by peers from similar social backgrounds, making messages easier to understand Sab'ngatun, Rohmi, and Rahma Widyaningrum (2025). Similarly, Sari et al., (2021) found that peer education improved knowledge of reproductive health, as adolescents felt more open and confident in asking questions to their peers. Peer education also encourages active participation, which enhances comprehension (Suryani, Lundy, and Wandi 2022).

The Differences Between the Intervention and Control Groups in Attitudes Toward Breast Self-Examination

The results showed that both groups had generally positive attitudes toward BSE before and after the interventions. However, peer education was statistically more effective in improving attitudes compared to leaflets.

Peer education promotes more significant changes in adolescent girls' attitudes toward BSE. This finding is consistent with Purba et al (2021) who found that peer education effectively changed adolescents' attitudes toward HIV/AIDS prevention. Through discussions and shared learning, peer education builds knowledge-based attitudes that encourage positive behaviors. Since adolescents spend most of their time with peers, they are more influenced by peer norms, behaviors, and daily habits (Sulaeman, Purnamawati, and Purwana 2022).

However, this study also has several limitations. The researcher acknowledges that the sample size was relatively small and limited to a single school, which may affect the generalizability of the findings. In addition, the duration of the study was relatively short between the pre-test and post-test assessments, and the practice of breast self-examination (BSE) was not measured. Therefore, future research is recommended to involve a larger sample size across multiple schools, to conduct pre-test and post-test assessments with a longer time interval, and to include the measurement of breast self-examination practices among adolescent girls.

CONCLUSION

Peer education has a positive and significant impact on adolescents' knowledge and attitudes toward breast self-examination. Adolescents tend to be more open and confident when learning from their peers, and this approach encourages greater active participation in understanding and practicing breast self-examination. Therefore, it is recommended that schools and community health programs implement peer education as a regular strategy to promote awareness and healthy practices among adolescents, and that training be provided for peer educators to enhance the effectiveness and sustainability of this intervention.

Author's Contribution Statement: Dinar Indri Bakti Salsabila was instrumental in conceptualizing the research idea and designing the methodology. Triana Sri Hardjanti was responsible for data collection and analysis, as well as drafting the article. Runjati contributed to the final editing of the manuscript, interpretation of the results, and preparation of the article for journal submission.

Conflict of Interest: This research has no conflict of interest with anyone or any party.

Acknowledgments: This research was made possible thanks to the support and cooperation of various parties. The authors express their deepest gratitude to SMK Negeri 11 Semarang for providing permission and facilities for this research. We also extend our gratitude to all parties at the Poltekkes Kemenkes Semarang, especially the researchers who contributed to the planning, implementation, and analysis of the research. The support, guidance, and cooperation of all parties were instrumental in ensuring the successful completion of this research.

REFERENCES

Ernawati, Ernawati, Sumarmi Sumarmi, Mantasia Mantasia, and Riska Nuryana. 2022. "Gambaran Pengetahuan Dan Sikap Remaja Putri Sebelum Dan Sesudah Penyuluhan Tentang Periksa Payudara Sendiri (SADARI)." Borobudur Nursing Review 2(2):127–34. doi:10.31603/bnur.7811.

Gilang, Dwi, Vita Pratiwi, and Paramitha Lucya. 2022. "Efektifitas Penggunaan Media Leaflet Dalam Peningkatan Pengetahuan Dan Sikap Terhadap Pencegahan Tuberkulosis." Jurnal Ilmiah Keperawatan 8(3). https://doi.org/10.33023/jikep.v8i3.1153.

Halmawati, Leni. 2023. “Pengaruh Media Leaflet Terhadap Pengetahuan Dan Sikap Siswa Tentang Kekerasan Dalam Pacaran Pada Siswa SMK Satya Bhakti Tahun 2023.” Journal of Midwifery and Public Health 5(2):36. doi:10.25157/jmph.v5i2.12711.

Kementerian Kesehatan. 2024. Rencana Kanker Nasional 2024-2034.

Kurniasi, Hesti. 2021. Buku Saku Deteksi Dini Kanker Payudara. I. Politeknik Kesehatan Kemenkes Semarang.

Labego, Yulianti, Franckie R. R. Maramis, and Ardiansa A. T. Tucunan. 2020. “Hubungan Antara Peran Teman Sebaya Dan Sikap Peserta Didik Tentang Kesehatan Reproduksi Terhadap Perilaku Seksual Pranikah Di SMA Negeri 1 Tagulandang.” Jurnal KESMAS 9(6). https://ejournal.unsrat.ac.id/index.php/kesmas/article/view/30933.

Lestari, Diana Eka, Titik Haryanti, and Prita Devy Igiany. 2021. “Efektivitas Media Leaflet Untuk Meningkatkan Pengetahuan Siswi Tentang Sadari.” JPPKMI 2(2). https://journal.unnes.ac.id/sju/index.php/jppkmiURL:https://journal.unnes.ac.id/sju/index.php/jppkmi/article/view/52431.

Menteri Kesehatan Republik Indonesia. 2015. Peraturan Menteri Kesehatan Republik Indonesia No. 34 Tahun 2015.

Nursya, Ulfah, Wiwin Mintarsih Purnamasari, and Qanita Wulandara. 2024. “Permodelan Peer Educator Dalam Meningkatkan Pengetahuan Remaja Putri Mengenai Anemia Di MTS BPI Baturompe Kota Tasikmalaya Tahun 2023.” Asian Research Midwifery and Basic Science Journal 1(1). https://doi.org/10.37160/arimbi.v1i2.644.

Nuryatma, Dedih. 2024. “Factors Associated with SADARI Behavior Among Female Adolescents at SMAN 1 Ciruas Serang Regency.” Journal of Nursing Studies 1(1). https://journal.edukalia.id/index.php/JNS/article/view/22/21.

Purba, Sri Dearmaita, Frida Liharris Saragih, and Yunida Turisna Octavia. 2021. “Pengaruh Peer Education Terhadap Pengetahuan Dan Sikap Remaja Dalam Pencegahan Hiv/Aids.” Jurnal Online Keperawatan Indonesia 4(2):89–95. doi:10.51544/keperawatan.v4i2.2343.

Putti Utari, Aulia, Gita Kostania, and Suroso. 2019. “Pengaruh Pendidikan Sebaya (Peer Education) Terhadap Sikap Dalam Pencegahan Anemia Pada Remaja Putri Di Posyandu Remaja Desa Pandes Klaten.” 4(1). https://doi.org/10.37341/jkkt.v4i1.102.

Rahmatia Alimun, Sity, K. Syamsu Rijal, Inna Mutmainnah Musa, Reeny Purnamasari, and Febie Irsandy. 2024. “Analisis Faktor Risiko Kanker Payudara.” Fakumi Medical Journal 04(06). https://fmj.fk.umi.ac.id/index.php/fmj.

Sabngatun, Sab’ngatun, Rohmi Rohmi, and Nova Rahma Widyaningrum. 2025. “Pengaruh Edukasi Peer Group Terhadap Peningkatan Pengetahuan Dalam Upaya Pencegahan Seks Pra Nikah Pada Remaja.” Avicenna : Journal of Health Research 8(1). doi:10.36419/avicenna.v8i1.1367.

Sari, Yuni, Lia Lajuna, and Nurlaili Ramli. 2021a. Efektifitas Peer Group Education Dan Penyuluhan Terhadap Peningkatan Pengetahuan Kesehatan Reproduksi Remaja Putri. Vol. 7. https://doi.org/10.33143/JHTM.V7I2.1565

Sibero, Jitasari Tarigan, Afrahul Padilah Siregar, and Aida Fitria. 2021. “Peningkatan Pengetahuan Remaja Untuk Deteksi Dini Kanker Payudara Dengan Edukasi Dan Pelaksanaan Pemeriksaan Payudara Sendiri (Sadari) Di Yayasan Perguruan Budi Agung Medan Tahun 2021.” Jurnal Abdidas 2(3):705–12. doi:10.31004/abdidas.v2i3.351.

Sulaeman, Ridawati, Dewi Purnamawati, and Eka Rudy Purwana. 2022. Remaja Dan Kesehatan Reproduksi. Yogyakarta: CV. Bintang Semesta Media.

Suryani, Pudji, Fiashriel Lundy, and Wandi. 2022. “Pengetahuan Metode Edukasi Teman Sebaya Terhadap Peningkatan Pengetahuan Gizi Remaja SMA Di Wilayah Kota Malang.” Jurnal Informasi Kesehatan Indonesia 8(1):11–18.

Wahyuni, Leni Tri, and Herna Yulita Safutri. 2021. “Hubungan Pola Makan Dengan Kejadian Fibroadenoma Mammae Pada Remaja.” Jurnal Citra Ranah Medika (CRM) 1(1):33–36. https://ejournal.stikes-ranahminang.ac.id/index.php/crm/article/download/13/6/32

Yati, Dwi. 2024. Strategi Efektif Edukasi Kesehatan Reproduksi Remaja. Pertama. Bantul: CV. Mitra Edukasi Negeri.