

**THE EFFECTIVENESS OF THE DEMONSTRATION METHOD AND AUDIO-VISUAL
METHOD ON ADOLESCENT KNOWLEDGE ABOUT BREAST SELF-EXAMINATION**

Titik Hindriati*, Nurmisih, Diniyati, Rosmaria

Department of Midwifery, Health Polytechnic of Jambi, Indonesia

* *Corresponding author: Titik Hindriati, Department of Midwifery, Health Polytechnic of Jambi, Indonesia, Jalan Prof DR GA Siwabessy No.42. Buluran Kenali, Kec. Telanaipura, Kota Jambi, 36122, Phone : +62 852-6970-1226, E-mail: titikpoltekkes@gmail.com*

Original article

DOI: [10.32549/OPI-NSC-58](https://doi.org/10.32549/OPI-NSC-58)

Submitted: 15 October 2021

Revised: 26 November 2021

Accepted: 29 November 2021

This article is licensed under the Creative Commons Attribution - Non Commercial - No Derivatives 4.0 (CC BY NC ND 4.0) international license.

Abstract

Introduction: Breast cancer is the most frequent type of cancer in women, and it is one of the major causes of mortality. Efforts should be made to prevent breast cancer by using the breast self-examination (BSE) method of early diagnosis. This study aims to determine the effectiveness of the demonstration and audio visual methods on adolescent knowledge about breast self-examination at SMA Pertiwi 1 Jambi City, Indonesia.

Methods. This study is a quasi-experimental study using a two-group pretest-posttest design at the private high school Pertiwi 1 Jambi City, involving 122 participants divided into two groups. Group 1 consisted of 61 participants given BSE material by demonstration, while group 2 consisted of 61 participants given material using audio-visual media. Data processing in this study used univariate and bivariate analysis, and the statistical test used was the Wilcoxon test.

Results. The results showed that there was an increase in students' knowledge about BSE after the demonstration with $p\text{-value} < 0.0001$, and displayed audio-visually with $p\text{-value} < 0.0001$.

Conclusion: demonstration and audiovisual methods proved effective in increasing adolescent knowledge about breast self-examination at at SMA Pertiwi 1 Jambi City, Indonesia.

Keywords: breast self-examination, knowledge, cancer, demonstration, audio visual

Introduction

The breast is one of the crucial organs for women because apart from being a tool for breastfeeding, it is also a symbol of beauty [1–3]. Because its vital existence makes a woman feel worried if the breast is abnormal; the most feared abnormality is malignancy or cancer [4]. Breast cancer is a condition in which cells have lost their usual control and mechanism, resulting in irregular, fast and uncontrolled growth in breast tissue [5,6].

According to the Breast Cancer Management Organization and the World Health Organization, by 2030, cancer in the world will increase 300%, and the majority occur in developing countries, including Indonesia [7].

Breast cancer is second cancer with the highest prevalence compared to other cancer in Indonesia in 2013, namely breast cancer, by 0.5% or around 61,682 patients in Indonesia. The prevalence of breast cancer incidence in Jambi Province was approximately 0.6% or about 977 cases in 2013 [8].

Based on data from the Jambi Provincial Health Office, in 2014, the number of patients who have breast cancer reached 38 (55%) people, and in 2015 the number of cases of breast cancer patients was 15 (22%) people. The age group in patients who have breast cancer starts from 14 years to 64 years. The data shows that the age at which breast cancer is susceptible is from the age of 24 years to the age of 64 years, and it occurs mainly in women. In 2016 it was found that breast cancer patients were only 14 years old; this could make it possible that all women can suffer breast cancer, both married and unmarried [9].

Only a tiny proportion of women perform the breast self-examination (BSE) [10]. It is estimated that only 25% to 30% of women perform regular monthly breast self-exams. Whereas, the level of sensitivity to detect breast cancer is about 20-30%. Almost 85% of lumps are found by sufferers independently through proper examination [11]. Breast self-examination is the first step. If breast cancer can be detected early and treated appropriately, the cure rate will be higher (80-90%). 85% of sufferers detect breast abnormalities [8]. If this examination becomes a routine and regular habit,

it can detect more breast cancer early. Although this method is cheap, safe, repeatable and straightforward, only about 15-30% of women use it [12–14].

Breast exam (BSE) can be applied to young women who experience change physical and secondary sexual development that is, puberty breast enlargement occurs between the ages of 12-13 years [15].

Benefits of breast examination alone on teenage girls for early detection of tumors or lump in the breast [16–18].

Better breast self-examination carried out during menstruation, i.e 7-10 days from the first day of menstruation with consideration at that time the influence of the hormones estrogen and Progesterone is very low and at the same time it's deep breast gland tissue no edema or not swell so much easier feel for tumors or abnormalities [19,20].

The results of the interviews in the initial survey at the Pertiwi 1 Private High School in Jambi City to 8 students stated that they did not know about BSE. Allegedly due to lack of information on reproductive health, especially BSE. One method of providing information is by delivering a demonstration using audio-visual.

This study aims to determine the effectiveness of the demonstration and audio visual methods on adolescent knowledge about BSE at SMA Pertiwi 1 Jambi City, Indonesia.

Methods

Design

This study is a quasi-experimental study using a two-group pretest-posttest design

Participants

The study was conducted at Pertiwi 1 Private High School Jambi City involving 122 female students with inclusion criteria ranging from 16-19 years of age, while adolescents under 16 years of age and not present at the time of the study were not included in the study.

Intervention

51 years old researcher, works as a lecturer at one of the universities in Indonesia, actively conducts research and writes a special book on midwifery. Group 1 consisted of 61 female participants (F) with an age range of 16-19 years, who were given BSE material by means of a demonstration, while group 2 consisted of 61 participants who were given material using audio-visual media. Before the BSE material, students' knowledge was first measured using a questionnaire, then after the material was given, it was continued with an evaluation of the students' level of knowledge about BSE (post-test).

The knowledge questionnaire consisted of 20 questions containing students' knowledge about breast self-examination. If students answer correctly, they are given a score of 1, while if students answer incorrectly, they are given a score of 0. The objective criteria for the knowledge variable are good and bad. Good, if the total score of student answers is 11-20, while the criteria is less, if the total score of student answers is 1-10. The questionnaire used has been validated and declared valid and reliable. Determine the validity of the questions using the product moment test. If the coefficient between the items and the total items is equal to or above 0.3 then the item is declared valid, but if the correlation value is below 0.3 then the item is declared invalid. While the correlation is 0.7, it is said that the item provides a sufficient level of reliability, on the contrary, if the correlation value is below 0.7, it is said that the item is less reliable. Determining reliable question items using the Spearman Rho test [21]. The instrument test was carried out on 15 adolescents with the results, of the 20 submitted there were 4 questions that had a validity index value <0.3 so they had to be corrected and 3 questions had a correlation below 0.7 so they had to be corrected again.

Questionnaires were distributed to students at Pertiwi 1 Private High School Jambi City, Indonesia. After the data collection was carried out by the researcher, the researcher then compiled the data, processing and analyzing the data.

Outcomes

To determine the effectiveness of learning using demonstration and audio visual methods

Sample size

This study involved 122 participants who were divided into two groups defined in random way, and namely group 1 and group 2 both composed of 61 female participants.

Ethical Consideration

No economic incentives were offered or provided for participation in this study. The study was performed in accordance with the ethical considerations of the Helsinki Declaration. This study obtained ethical feasibility under the Health Research Ethics Commission of the Ministry of Health, Jambi, and registration number: LB.03.02./3.5/130/2021.

Statistical analysis

Data are presented as numbers and percentages for categorical variables. Continuous data were expressed as mean \pm standard deviation (SD) or median with Inter Quartile Range (IQR). Then proceed with bivariate analysis using the Wilcoxon test. The Wilcoxon test was used to determine the effect of counselling using breastfeeding video on the knowledge of breast milk supporting group. All tests with p-value (p) <0.05 were considered significant. Statistical analysis was performed using the SPSS version 16.0 application.

Results

As for the characteristics of the respondents can be presented in the following table :

Characteristics of students	n	%
Age (years)		
16-17	74	60.7
18-19	48	39.3
Class		
10	40	32.8
11	34	27.9
12	48	39.3

Table 1. *Characteristics of research respondents in high school*

The highest respondent's age characteristic is the range of 16-17 years as much as 60.7%, then the most students occupy class 12

Students' knowledge about breast self-examination before and after giving the material using demonstration and audio-visual methods is presented in the following table:

Student knowledge about BSE	N	Demonstration		Audio visual	
		Pre test n(%)	Post test n(%)	Pre test n(%)	Post test n(%)
Good	61	13 (21.3)	44 (72)	20 (32.8)	30 (49.2)
Poor	61	48 (78.7)	17 (28)	41 (67.2)	31 (50.8)

Table 2. *Frequency distribution of students' knowledge about BSE*

Table 2, shows that students' knowledge about breast self-examination before giving the demonstration group was higher in the poor than in the excellent category. After the demonstration, students' learning was higher in the superb class than in the fewer categories. Meanwhile, students' knowledge before audio-visual material was higher in the lower category than the excellent category. After giving the material, the same changes occurred for both classes.

The effect of giving the method using demonstration and audio-visual techniques on students' knowledge about breast self-examination is presented in the following table:

Demonstration Method	N	Mean±SD	Median (IRQ)	p-value
Knowledge at pre test	61	6.03±1.46	6 (5 – 7)	< 0.0001
Knowledge at Post test	61	8.46±1.24	9 (8 - 9)	
Audio visual				
Knowledge at pre test	61	5.54±1.43	5 (5 - 7)	< 0.0001
Knowledge at Post test	61	7.61±1.60	8 (7 – 9)	

Table 3. *The effect of giving material using demonstration and audio-visual methods on students' knowledge*

Table 3 shows the increase in students' knowledge about breast self-examination after demonstration with p-value < 0.0001. as well as shown audio visually with a p-value < 0.0001.

Discussion

Prior to the application of the demonstration method and the audio-visual group, data was obtained that a small number of respondents had good knowledge of BSE. Meanwhile, more than half of the respondents have poor knowledge. This is because students have never received information about breast cancer and BSE examinations at school.

After giving the material using the demonstration method, there was an increase in students' knowledge about BSE. Most of the respondents had good knowledge about understanding, examination, standard nipple colour and the purpose of BSE, and only a small number of respondents had less knowledge about BSE.

After giving the material using audio-visual media, there was an increase in respondents' knowledge after the audio-visual about BSE; that is, most of the respondents had good knowledge. Using video media has a more significant impact on health education; it relies on hearing and vision from the target; it is interesting; the messages are delivered quickly and efficiently and can develop the mind and develop the imagination of young women. The video can clarify the pictures and the steps of the importance of the BSE examination. In the process of giving it, the respondent not only hears

the sound, but the respondent will see directly and the steps of the breast self-examination.

Based on the results of research by [22], the demonstration method through demonstration activities has proven to be more effective in increasing young women's knowledge to perform BSE techniques. It is also supported by research by [23] that there is a relationship between knowledge, attitudes and BSE actions through demonstrations to detect breast cancer early in female students at the Faculty of Public Health. This result is also supported by the research of [13], which suggests that the demonstration method is proven to be more effective in increasing knowledge through learning media on BSE skills. A similar thing was reported by [13], who researched SMA 1 Sumber, Indonesia students who found an increase in student's knowledge after being given information using demonstrations and media in the form of videos.

The counselling was carried out to increase the respondent's knowledge about BSE. There was material about BSE in the counselling, which was packaged in an attractive video format and demonstrated by conducting a demonstration to obtain information directly. In addition, in the counselling process, answers are also held so that respondents who do not understand the material about BSE can now ask questions, and the respondents can understand the information [18,24,25].

The current research is to improve health education about reproductive health, especially breast health of a young woman in the research location. Knowledge of breast self-examination (BSE) is essential to be known and understood by a young woman [26].

Conclusion

The use of demonstration methods and audio-visual media in learning is considered adequate to increase students' knowledge about breast self-examination for students of SMAN Pertiwi 1 Jambi city. It is hoped that the high school will provide information about BSE in adolescent girls to detect early symptoms of breast cancer.

Limitations of Study

The limitations of this study include, in addition to the relatively small number of participants, the type of quasi-experimental research does not do randomization

Acknowledgement

We would like to express our gratitude to the director of the Midwifery Department of Jambi health polytechnic who has supported this research.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not for profit sectors.

Competing interests statement

There are no competing interests for this study.

References

1. Sukartini T, Sari YIP. Women with breast cancer living with one breast after a mastectomy. *Central European Journal of Nursing and Midwifery*. 2021;12(2):366–75.
2. Guilford K, McKinley E, Turner L. Breast cancer knowledge, beliefs, and screening behaviors of college women: application of the health belief model. *American Journal of Health Education*. 2017;48(4):256–63.
3. Chee HL, Rashidah S, Shamsuddin K, Intan O. Factors related to the practice of breast self examination (BSE) and Pap smear screening among Malaysian women workers in selected electronics factories. *BMC women’s health*. 2003;3(1):1–11.
4. Filippi MK, Ndikum-Moffor F, Braiuca SL, Goodman T, Hammer TL, James AS, et al. Breast cancer screening perceptions among American Indian women under age 40. *Journal of Cancer Education*. 2013;28(3):535–40.
5. Yadav AR, Mohite SK. Cancer-A silent killer: An overview. *Asian Journal of Pharmaceutical Research*. 2020;10(3):213–6.
6. Madkhali NA, Santin O, Noble H, Reid J. Understanding breast health awareness in an Arabic culture: qualitative study protocol. *Journal of advanced nursing*. 2016;72(9):2226–37.
7. Setiyaningrum KD, Maliya A. Hubungan Dukungan Keluarga terhadap Kualitas Hidup Pasien Kanker Payudara yang Menjalani Kemoterapi di Rumah Sakit Umum Daerah dr. Moewardi Surakarta. Universitas Muhammadiyah Surakarta; 2018.
8. Kemenkes RI. Hasil utama RISKESDAS 2018 [Internet]. Kementerian Kesehatan Badan Penelitian dan Pengembangan Kesehatan. Jakarta; 2018. Available from: https://kesmas.kemkes.go.id/assets/upload/dir_519d41d8cd98f00/files/Hasil-riskesdas-2018_1274.pdf
9. Dinkes Kota Jambi. Profil Kesehatan Kota Jambi. Jambi; 2018.
10. Mahfouz AA, Hassanein MHA, Nahar S, Farheen A, Gaballah II, Mohamed A, et al. Breast cancer knowledge and related behaviors among women in Abha city, southwestern Saudi Arabia. *Journal of Cancer Education*. 2013;28(3):516–20.
11. Artanty NW. Lima Menit Kenali Payudara. CV Andi: Yogyakarta. 2011.
12. Olfah Y, Mendri NK, Badi’ah A. Kanker Payudara dan SADARI. Jakarta: Nuha Medika. 2013;
13. Aeni N, Yuhandini DS. Pengaruh Pendidikan Kesehatan dengan media video dan metode demonstrasi terhadap pengetahuan sadari. *Care: Jurnal Ilmiah Ilmu Kesehatan*. 2018;6(2):162–74.

14. Oliy N, Abdul NA. The Influence of Booklets and Videos on the Ability to Practice Breast Self Examination in Students of High School 4 Gorontalo. *Indian Journal of Forensic Medicine & Toxicology*. 2021;15(2).
15. Wulandari F, Ayu SM. Hubungan tingkat pengetahuan dan sikap dengan perilaku pemeriksaan payudara sendiri (sadari) mahasiswi. In: *Prosiding Seminar Nasional IKAKESMADA “Peran Tenaga Kesehatan dalam Pelaksanaan SDGs.”* Fakultas Kesehatan Masyarakat Universitas Ahmad Dahlan; 2017. p. 137–44.
16. Harford JB. Breast-cancer early detection in low-income and middle-income countries: do what you can versus one size fits all. *The lancet oncology*. 2011;12(3):306–12.
17. Weiss NS. Breast cancer mortality in relation to clinical breast examination and breast self-examination. *The Breast Journal*. 2003;9:S86–9.
18. Noer RM, Purba NH, Suryadartiwi W. Edukasi Sadari (Pemeriksaan Payudara Sendiri) Sebagai Deteksi Dini Pencegahan Kanker Payudara Pada Remaja Putri. *JMM (Jurnal Masyarakat Mandiri)*. 2021;5(2):651–62.
19. McPherson K, Steel C, Dixon JM. ABC of breast diseases: breast cancer—epidemiology, risk factors, and genetics. *BMJ: British Medical Journal*. 2000;321(7261):624.
20. Monticciolo DL, Newell MS, Moy L, Niell B, Monsees B, Sickles EA. Breast cancer screening in women at higher-than-average risk: recommendations from the ACR. *Journal of the American College of Radiology*. 2018;15(3):408–14.
21. Sugiyono. *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: PT Alfabet; 2016.
22. Handayani S, Sudarmiati S. Pengetahuan remaja putri tentang cara melakukan SADARI. *Jurnal Keperawatan Diponegoro*. 2012;1(1):93–100.
23. Amila A, Sinuraya E, Gulo ARB. Edukasi Sadari (Pemeriksaan Payudara Sendiri) Untuk Deteksi Dini Kanker Payudara Pada Siswi SMA Medan. *Jurnal Abdimas Mutiara*. 2020;1(2):29–40.
24. Sadoh AE, Osime C, Nwaneri DU, Ogboghodo BC, Eregie CO, Oviawe O. 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*. 2021;21(1):1–9.
25. Yuslikhah AM, Wijayanti Y, Rustiana ER. the Effectiveness of Health Education Method on Early Detection Carcinoma Mammae in Teenage Girls of Madrasah Aliyah in Mijen Sub-District. *Public Health Perspective Journal*. 2019;4(2).
26. Dadzi R, Adam A. Assessment of knowledge and practice of breast self-examination among reproductive age women in Akatsi South district of Volta region of Ghana. *PloS one*. 2019;14(12):e0226925.