

Effectiveness of the breast self-examination demonstration in improving knowledge, attitudes, and behavior of adolescent girls in senior high school in Samarinda

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Abstract

Purpose: This research aims to assess the effectiveness of the BSE demonstrations in enhancing the knowledge, attitudes, and behaviors of adolescent girls at SMA 1 Samarinda. **Methods:** This research employed a pre-experimental design with the One Group pre-post test. There was a population of 208 adolescent girls, with Slovin getting 94 samples. The students were selected by simple random sampling. **Results:** Knowledge p -value showed value $(0,000) < \alpha (0,05)$ while both attitudes and behavior values showed p -value $(0,000) < \alpha (0,05)$. There is an increase in knowledge, attitudes, and behavior before and after the BSE demonstration. **Conclusion:** The study concludes that BSE demonstrations effectively enhance adolescent girls' knowledge, attitudes, and behaviors.

Keywords: adolescent girls; behavior; BSE demonstration; effectiveness

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INTRODUCTION

Breast cancer is the type of cancer that has the highest contribution to the prevalence of cancer in women in Indonesia. This type of cancer has a high mortality rate due to late early detection. Breast cancer survivors are generally detected at stage carry-on. Breast cancer is the most common cancer in women. Early detection of breast cancer plays a significant role in reducing mortality and improving patient prognosis [1].

Breast cancer mortality rates are higher in developing countries compared to developed countries. The leading cause of increasing cancer mortality in developing countries is the lack of effective screening programs that can detect conditions before cancer or

detect cancer in an early stage so that treatment is carried out before cancer occurs at an advanced stage. Regrettably, in developing countries, awareness and understanding of breast cancer preventative practices among the general population and healthcare workers remains poor, which requires appropriate awareness programs [2].

Global Burden of Cancer Study (Globocan) from WHO in 2020 showed 2.3 million women diagnosed with breast cancer and 685,000 deaths globally. Until the end of the year 2020, there were 7.8 million living women diagnosed with breast cancer in the last five years, making it the most common cancer in the world [3].

In Indonesia, the number of new cases of breast cancer reached 68.858 cases (16.6%) of the total

396—914 new cases of cancer. Meanwhile, the number of deaths reached more than 22,000 cases [3].

Based on the data above, there is a high possibility of breast cancer caused by a late cancer diagnosis. So, to prevent the increasing number of deaths due to breast cancer is urgently needed for early detection of cancer, namely Breast Self-Examination (BSE). By practicing BSE, a woman can recognize and evaluate any changes to her body and receive the necessary treatment and care early [4].

Mammography is the golden standard for breast cancer screening. However, there is limited access to it in Indonesia, which is why Breast Self-Examination (BSE) is a breast cancer screening modality widely promoted by the government. As in Indonesia, the benefits of BSE include promoting breast awareness by increasing knowledge about what is regular and recognizing changes, increasing medical advice-seeking behavior, and undergoing biopsies [5].

Secondary prevention of breast cancer is breast cancer screening. Breast cancer screening is an examination or attempt to find abnormalities that lead to breast cancer in a person or group with no complaints. The purpose of screening is to reduce morbidity rates due to breast cancer. Breast Self-Examination (BSE) can be applied to adolescent girls who experience physical changes and secondary sexual development, namely at puberty [6].

Previous research on the relationship between the degree of knowledge, attitude, degree of education, and support of professional health officers stated that there were significant connections between those with Breast Self Examination (BSE) behavior [7]. Another research stated that video as a media demonstration increases teenagers' knowledge about Breast Self Examination (BSE) before and after intervention [8]. This is also in line with research that shows that the level of knowledge of young women after intervention in the form of health education about BSE examinations using video media showed an increase in value [9].

Based on the preliminary study results, SMA 1 Samarinda has 208 female students in 10th grade who have not implemented comprehensive health education, especially BSE behavior for female students at school. The urgency of health education related to breast cancer prevention is increasingly needed, considering the increasing incidence of breast cancer cases in teenage girls. By giving teaching to young girls, they can teach their mothers and siblings so that the incidence of breast cancer may be reduced [4]. This study examines the effectiveness of the BSE demonstration in improving the knowledge, attitude, and behavior of adolescent girls as an early detection of breast cancer.

METHODS

The type of research used was quantitative research with quasi-experimental research. The research design was a group pre-test-post-test design. The data interpreted in this research was quantitative research obtained through primary and secondary sources. Primary data is data obtained directly from the field, namely questionnaires. The validity and reliability of these questionnaires were taken in SMA Negeri 3 Samarinda, which had the same geographical proximity and homogeneity of characteristics as the selected schools as a research site. Secondary data is obtained from library reviews, books, or literature related to the research theme.

The population in this research was 208 female 10th-grade students. Based on preliminary studies, 10th-grade students must implement comprehensive health education, especially BSE behavior. The sampling technique in this research was simple random sampling, where the population sample is taken randomly without paying attention to the population's strata. The number of samples was calculated using the Slovin formula [10] and had 94 respondents.

The frequency distribution table displayed univariate analysis, describing each variable studied's characteristics. Bivariate analysis used the Wilcoxon Test for knowledge, attitude, and behavior variables.

RESULTS

Table 1. Characteristics of respondents

Variable		n (%)
Menstrual age (years old)	9	1 (1,1)
	10	4 (4,3)
	11	17 (18,1)
	12	41 (43,6)
	13	19 (20,2)
	14	10 (10,6)
Family history of breast cancer	15	2 (2,1)
	Yes	12 (12,8)
	No	82 (87,2)
Exposure to BSE information	Yes	19 (20,2)
	No	75 (79,8)

Table 1 shows the demographic characteristics of the respondents. The highest percentage of menstrual age is at 12 (43,6%), and the lowest is at 9 (1,1%).

Table 2 shows the respondents' univariate variables. The pre-test results on the knowledge variable were mainly in the good category, with 74 respondents (78,7%), and the least were in the poor category with 0 respondents (0%). Apart from that, the-

Table 2. Univariate Variables

Variables		Test (n,%)	
		Pre	Post
Knowledge	Good	74 (78,7)	83 (88,3)
	Enough	20 (21,3)	9 (9,6)
	Poor	0 (0)	2 (2,1)
Attitude	Positive	94 (100)	90 (95,7)
	Negative	0 (0)	4 (4,3)
Behavior	Good	16 (17)	41 (43,6)
	Poor	78 (83)	53 (56,4)

-most post-test results on the knowledge variable were in the good category, with 83 respondents (88,3%), and the least were in the poor category, with 2 respondents (2,1%).

The pre-test results on the attitude variable were primarily positive, with 94 respondents (100%). Apart from that, the post-test results on positive attitudes were 90 respondents (95,7%), and the least on negative attitudes were 4 respondents (4,3%). The pre-test results on poor behavior variables were 78 respondents (83%) and 16 respondents (17%) for good behavior. Apart from that, the post-test results on poor behavior variables were 53 respondents (56,4%), and for good behavior were 41 respondents (43,6%).

Table 3. Bivariate variables

Variables	Pre-test	Post-test	Z	ρ value
Knowledge	33,86	34,07	-2,518	0,012
Attitude	34,65	41,81	-4,357	0,000
Behavior	12,25	32,26	-5,889	0,000

Table 3 shows the effectiveness of the BSE demonstration on knowledge, attitude, and behavior with ρ value (0,012) < α (0,05), which means there is an increase in respondent's knowledge before and after the BSE demonstration. On another variable, it shows that ρ value (0,000) < α (0,05), which means there is an increase in respondent's both attitude and behavior before and after the BSE demonstration.

DISCUSSIONS

Knowledge

Breast cancer can be recognized early by women of childbearing age so that the benefits of BSE can be achieved immediately as early as possible to detect abnormalities in the breast [11]. Knowledge plays a vital role in changing a person's behavior. If teen girls already know the importance of carrying out BSE examinations, it will be more straightforward and more routine to carry out early detection of their breasts. Thereby reducing morbidity and mortality caused by breast cancer [12].

This study aligns with a study in Samarinda [13] that adolescent girls focused on the BSE demonstration with a phantom. By doing the demonstration, the students have been exposed to information so that they can be aware of and automatically memorize the steps in six steps to check our breasts properly and correctly. This is also in line with a study in Nigeria, which found that most respondents have good knowledge of BSE. In contrast, only a small number of respondents have poor knowledge, which may be due to the respondents' level of education, awareness, and exposure [14]. Providing knowledge at teenage is also very important to remember with adolescent students knowledge would be better at organizing their lives ahead[15]. Another study found that knowledge about BSE can be affected by many factors, such as year of education and university type (private or public), which were significant determinants of students' presence and level of knowledge [16]. In addition, Poor BSE literacy results in low self-awareness of self-examining breasts [17].

Attitude

Our study found an increase in attitudes before and after the BSE demonstration. This is stated by the results of the Wilcoxon tests, which show the ρ value (0,000) < α (0,05) means that there is an increase in respondents before and after the BSE demonstration.

This study aligns with a study in Saudi Arabia [18] in which respondents showed a positive attitude towards the BSE demonstration. Some participants agreed that early detection of breast cancer increases the chances of breast cancer recovery, and women over 20 years old should do the BSE demonstration and should be given education about it. It is also in line with a study in India [19] that it is essential for women who need to be medically trained to be educated about the importance of BSE demonstration and adopt a positive attitude towards regular exercise.BSE as awareness about breast cancer is necessary among women, especially those aged 15-49 years [20].

Behavior

Our findings found an increase in behavior before and after the BSE demonstration. This is stated by the results of the Wilcoxon tests, which show the ρ value (0,000) < α (0,05) means that there is an increase in respondents' behavior before and after the BSE demonstration.

This study aligns with a study in Balikpapan, Indonesia, that there is a difference in behavior before and after being given BSE counseling health education with Android media regarding breast cancer prevention behavior [21]. Teenage girls need monitoring from their parents, especially when

practicing BSE. Without a vital role and control from parents, it is worrisome that teenage girls will do negative things [22]. Another study found that people with good knowledge but poor attitudes tend to have bad behavior. It is caused by the need for more motivation to do the BSE [23].

Implementing Breast-Self Examination in adolescent girls can raise several social impact issues such as body image and awareness, cultural and social taboos, privacy and comfort, parental involvement and peer influence. Addressing these social impact issues requires a holistic approach considering cultural contexts, privacy concerns, educational strategies, and peer dynamics. Efforts should prioritize promoting positive health behaviors while respecting individual autonomy and cultural sensitivities to ensure effective and beneficial implementation of BSE among adolescent girls. A study in Surabaya, Indonesia, found six psychosocial determinants of performing BSE: knowledge, attitude and beliefs, risk perception, norms, perceived behavior control, and intention [5].

CONCLUSION

Based on this research, it can be concluded that BSE demonstration effectively improves adolescent girls' knowledge, attitude, and behavior in Senior High School in Samarinda. It is recommended to promote Breast Self-Examination (BSE) to adolescent girls to detect breast cancer at an early stage. Studying breast cancer awareness and prevention among adolescent populations can contribute significantly to advancing knowledge in several ways, such as early education and awareness, behavioral interventions, physical impact, and family and peer influence. Research on this topic can lead to targeted interventions that promote early detection, reduce risk factors, and ultimately improve long-term breast health outcomes. In addition, It is also to gain awareness about breast cancer, especially in Indonesia.

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