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The Effect Of 'Sadari' Health Education On Early Breast Cancer Detection Knowledge Among Female Teenagers At Sman 1 Giri Taruna Bangsa Banyuwangi

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Abstract

Breast cancer is a prevalent malignancy characterized by tumor proliferation in breast tissue, with an annual incidence exceeding 185,000 cases in women and an increasing trend in developed countries. As the second highest cause of cancer death in women (around 43,500 fatalities per year) after lung cancer, early detection through Breast Self-Examination (SADARI) is crucial to improve knowledge and prognosis. This study used a quantitative method with a pre-experimental design and simple random sampling technique to involve 68 participants. The research instruments included a knowledge questionnaire and a skill observation checklist. Data analysis using the Wilcoxon signed-rank test showed a significant increase in respondents' knowledge about SADARI, with 62 individuals (91.2%) reaching a high level of knowledge and 6 individuals (8.8%) having adequate knowledge after the intervention. The results of the statistical test showed a p-value of 0.000 (p <0.05), which confirms that health education has a significant effect on the knowledge level of students at SMAN 1 Giri Taruna Bangsa regarding SADARI. This finding highlights the effectiveness of school-based interventions in promoting early breast cancer screening. It is recommended that educational institutions continue to organize reproductive health awareness programs through collaboration with healthcare professionals.

Keywords: breast cancer, early detection, health education, knowledge, SADARI

INTRODUCTION

As a leading contributor to the global burden of disease, breast cancer is a principal cause of death in the female population. Data from the World Health Organization identifies it as the most prevalent form of cancer among women, transcending economic boundaries to impact developed and developing countries (1). According to GLOBOCAN 2020 data, there were 2,261,242 new cases of breast cancer worldwide with 684,996 deaths (2). Global cancer statistics for 2022 reveal approximately 20 million new breast cancer diagnoses and 9.7 million fatalities, with a projected mortality risk of one in twelve women. In Indonesia, breast cancer accounted for 65,858 cases (16.6%) of the 396,914 total new cancer diagnoses, resulting in 22,000 deaths (3). National projections suggest that without intensified prevention and early screening, the cancer burden could escalate by over 70% by 2050. Present annual figures indicate roughly 400,000 new cases and 240,000 deaths across all cancer types. Without effective intervention, the burden of cancer will continue to grow, both in terms of public health and economics (4).

Breast cancer today not only affects older women but is also increasingly found in younger women, even adolescents. This disease stands as a primary cause of mortality, frequently exacerbated by delayed clinical

intervention. In the Indonesian context, early cancer screening remains a significant hurdle, as many patients present with advanced-stage disease. This late-stage diagnosis inevitably leads to diminished therapeutic outcomes and escalated medical expenditures. Notably, approximately 50% of cancer cases are preventable through lifestyle modifications, including a nutritionally balanced diet, physical activity, tobacco cessation, abstinence from alcohol, and routine medical screenings (5).

Currently, it is impossible to prevent the occurrence of breast cancer, but early diagnosis is very important to improve prognosis. The most effective way to carry out early diagnosis of breast cancer is through BSE. Adolescent girls are often less sensitive to changes in their breasts, so early detection is often overlooked. In fact, BSE is very important to start early, or during puberty (6). Regular BSE are necessary when young girls reach puberty and begin breast development (7). However, today's adolescents are less attentive to breast care. This is due to a lack of knowledge and awareness that BSE is part of efforts to prevent death from breast cancer that may occur in adolescent girls (8).

The lack of knowledge and awareness among adolescents about the importance, techniques, and proper timing for performing SADARI is a major obstacle in primary prevention efforts. Many teenage girls believe that breast cancer is not a disease for their age, resulting in very low engagement in early detection behaviors, such as SADARI. The lack of accurate information also leads to a poor understanding of how to detect lumps or physical changes in the breasts independently (9).

Health education regarding SADARI is an effective preventive effort to improve adolescents' knowledge, attitudes, and actions in early detection of breast cancer. Through interactive education methods, such as demonstrations and the use of media, adolescents can understand the correct SADARI technique and recognize the early symptoms of breast cancer. Increasing knowledge through health education has been proven to raise adolescents' awareness to regularly perform monthly breast self-examinations (10). Therefore, efforts are needed to enhance adolescents' knowledge and skills in independently detecting breast cancer through SADARI health education. By providing structured education, it is expected that adolescent girls will have a good understanding and be able to routinely carry out early detection measures to prevent further complications. This is crucial for reducing advanced-stage breast cancer in the productive age group in the future (11).

RESEARCH METHODOLOGY

The research conducted from December 1-31, 2024 is a quantitative study with a one-group pretest-posttest quasi-experimental design. The population was female students of SMAN 1 Giri Taruna Bangsa totaling 210 individuals. The sample size was taken using Slovin's formula with a 10% confidence level. The sample used consisted of some female students from SMAN 1 Giri Taruna Bangsa Banyuwangi, totaling 68 individuals, selected through simple random sampling. Inclusion criteria: (1) Female students aged 15-19 years, (2) willing to participate as respondents, (3) willing to participate in the SADARI health education intervention and complete the pre and post-test questionnaires, (4) registered as active students at SMA Taruna Bangsa. Exclusion criteria: (1) having a personal or familial history of breast cancer, (2) previously attending SADARI education or training, (3) absent during the SADARI health education intervention sessions. The research utilized a

questionnaire previously validated and tested for reliability. Data collection techniques: (1). After the researcher obtained permission from the school, the researcher coordinated with the guidance counselor to determine the research schedule, (2). Distributing questionnaires to measure the students' knowledge before providing the intervention, (3). The researcher provided health education about SADARI for approximately 60 minutes, (4). Data analysis was performed using the Wilcoxon Signed-Rank Test. Furthermore, this study received formal ethical clearance from the Health Research Ethics Committee of STIKES Banyuwangi with number: 025/01/KEPK-STIKESBWI/XI/2024-2025 dated November 8, 2024. Reliability test results: the instrument using Cochran's Q Test obtained a result of 0.649 > 0.63, which means there is a significant difference between the attributes measured, indicating that the instrument is consistent and valid, with an r table value of 0.413. The validity test results meet the following criteria: If the calculated r < r table, then it is declared valid. If the calculated r > r table, then it is declared invalid. With an r table value of 0.413, all questionnaire items are <=0.413.

RESULTS AND DISCUSSION

1. RESULT

Table 1 Characteristics of Respondents based on Age and Class (n=68)

Characteristics	Frequency	Percentage (%)
Age		
16 years old	33	49
17 years old	35	51
Class		
X	41	60
XI	27	40

Source: Primary Data 2024

Table 1 showed 35 respondents (51%) are 17 years old, while 41 respondents (60%) are 10th grade students.

Table 2 Characteristics of Respondents Based Knowledge (n= 68)

Characteristics	Pre test		Post test		*P-value*
	n	%	n	%	
Knowledge					
Good	0	0	62	91	
Enough	17	25	6	9	0,000
Lacking	51	75	0	0	
Total	68	100	68	100	

Source: Primary Data 2024

Table 2 shows a significant increase in the knowledge of female students at SMAN Taruna Bangsa about early detection of breast cancer. Before education, 75% of the 51 respondents had poor knowledge, but after receiving SADARI health education, the knowledge of 62 respondents (91%) improved to good. The Wilcoxon test (p-value 0.000 < 0.05) proves SADARI health education has a positive effect on improving the knowledge of female teenagers at SMA 1 Giri Taruna Bangsa.

2. DISCUSSION

The results found there is a significant effect, with SADARI health education having a positive influence on increasing the knowledge of female adolescents at SMA 1 Giri Taruna Bangsa Banyuwangi. There was an increase in respondents' knowledge levels after health counseling, indicating that educational interventions are effective in improving understanding of breast cancer and SADARI. This increase is reflected not only in the average knowledge score but also in the shift in knowledge categories from low and moderate to good. These findings confirm that health counseling serves as an effective means of knowledge transfer, especially when delivered in a structured manner and tailored to the target characteristics.

Knowledge is the impression in the human mind as a result of the use of the senses and everything that is known based on the experiences acquired by

each person. Someone who has a high level of knowledge in a certain matter will easily adopt better behavior. A high level of knowledge will impact the process of behavioral changes that will be undertaken in relation to the problems faced (12).

Knowledge or cognition is a dominant factor that is very important for the formation of individual or societal behavior (actions). Knowledge itself is largely obtained from hearing and vision (13). Lack of knowledge due to minimal information obtained, in this case fundamental aspects of breast cancer, specifically the diagnostic indicators, symptomatic presentations, and how to perform examinations to detect the presence of breast cancer early, causes a person to be reluctant to perform SADARI. With good knowledge about SADARI, it can motivate a person to perform SADARI, because motivation contributes to increasing adolescents' desire to perform SADARI. Adolescents who have knowledge about SADARI tend to perform SADARI (14).

High knowledge will impact the process of behavioral change that will be undertaken in relation to the problems faced. Many women do not perform regular monthly self-breast examinations, possibly due to the respondents' limited experience with exposure to breast cancer cases, such as no family members having breast cancer, relatives or others whom the respondents have seen with the condition. These experiences shape feelings of sympathy, anxiety, or fear, thereby inducing the behavior of performing self-breast examinations (1). These results are in line with research by Mardiah (2026), which shows a significant elevation in the participants' knowledge levels following the administration of SADARI (15).

Knowledge about SADARI is very necessary from an early age to detect breast abnormalities early. Knowledge about the SADARI procedure is very important for respondents to know because this procedure is an important component of SADARI. Establishing a proficient understanding of the SADARI procedure is essential for adolescent girls because knowing about the SADARI procedure is one of the reasons that causes adolescent girls to apply SADARI as a routine habit in efforts for early detection of breast cancer. Health habits practiced during adolescence can improve health in the future and have implications for all adolescents (1).

Further statistical analysis showed a significant relationship between health counseling and increased knowledge of early detection of breast cancer. This reinforces the evidence that health education is not only informative but also contributes to shaping individuals' cognitive readiness to implement preventive health behaviors. These findings are consistent with the research of Firda Tamar Jaya et al. (2020), which stated that health education can increase knowledge levels and encourage behavioral changes among adolescents regarding early detection practices for breast cancer (16). Thus, the findings expand on previous findings by confirming the effectiveness of counseling among female students as a productive and educational age group.

Health education is one of the means or efforts that can be used to present health messages and information that are intended to be conveyed to adolescent girls, so that it can increase knowledge that is hoped to be able to change behavior in a positive direction or support health. Media serves a pivotal role in health education by fostering an environment conducive to positive behavioral modifications. To ensure efficacy, health education strategies utilize a variety of methodologies and platforms tailored specifically to the target demographic (17)

CONCLUSIONS

This study shows that the SADARI educational intervention at SMK Taruna Bangsa Banyuwangi significantly increased the students' knowledge, with a shift in the level of knowledge from mostly poor to good. The Wilcoxon test results confirmed that the implemented health education program significantly improved students' knowledge levels concerning breast cancer screening.

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