

## IMPROVING BREAST SELF-EXAMINATION (BSE) SKILLS THROUGH ANIMATED VIDEO EDUCATION AMONG FEMALE STUDENTS AT SMAN 5

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### ABSTRACT

In 2020, approximately 2.3 million women worldwide were diagnosed with breast cancer, and 7.8 million women survived within five years after diagnosis, making breast cancer the most common cancer globally. Lack of physical activity and the consumption of fast food are among the main risk factors for breast cancer. Currently, breast cancer also affects younger women. Therefore, increasing knowledge and preventive behavior through health interventions is essential. This study aimed to improving breast self-examination (BSE) through animated video education among female students. This research employed a pre-experimental design with a one-group pre-test post-test design. The population consisted of all 11th-grade female students at SMAN 5 Banda Aceh, with a total sample of 38 students selected by purposive sampling. The study was conducted from January to March 2025. Data were analyzed using the Wilcoxon test. The univariate analysis showed that before the intervention, most students had poor BSE skills (52.6%), while after the intervention, most students demonstrated good BSE skills (63.2%). The bivariate analysis revealed that health education using animated video significantly improved BSE skills ( $p < 0.05$ ). Based on the findings, it is recommended that students regularly practice BSE once a month as an effort for early detection of breast abnormalities.

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### PENDAHULUAN

Breast cancer is the most commonly diagnosed cancer globally, with more than 2.3 million new cases and 685,000 deaths recorded in 2020 (WHO, 2021) Although it generally affects adult women, recent trends show a rise in cases among younger women, including adolescents. In Indonesia, breast cancer remains a major concern, with 1,117 cases identified through non-communicable disease surveillance in Aceh alone (Dinas Kesehatan Aceh, 2022). This highlights the urgency of initiating early detection strategies at younger ages.

Breast self-examination (BSE) is among the most accessible early detection methods. Educating adolescent girls on BSE is crucial for cultivating long-term preventive behavior. Yet, knowledge and practice of BSE are low; only 36.8% of high school girls received BSE information, and most were unaware of reliable sources.(Kartikasari, K., Riza, N., 2025) Peer-education interventions, such as those by (Sadoh et, 2021), have significantly improved BSE knowledge among Nigerian adolescents.

Psychosocial factors also play a pivotal role: (Dewi, 2022) found beliefs, perceived barriers, and self-efficacy influence BSE adoption in Surabaya. Similarly, determinants like family support and peer influence shape SADARI practice among Indonesian teens.

To effectively engage digital-native adolescents, health education must be interactive. Audiovisual media—particularly animation—attract attention and enhance retention (Murniati, N., Nurliah, & Meutia, 2023). Daryanti, (2022) showed audiovisual education outperformed lectures in boosting BSE knowledge.

Innovative virtual interventions rooted in self-efficacy theory have also proven effective. It's reported that virtual education significantly raised BSE skills (Kucheki, 2024), underscored the importance of attitudes and awareness in fostering BSE habits.(Mohebi, 2023)

Previous research highlights animation and immersive tools as promising modalities. (Farmer, H., 2024) demonstrated enhanced engagement through narrative 360° videos , and (Idrees, S., 2023) found animation preferred over simulation among women ≤20. Additionally, (Farasari, 2023), (Putri, 2022) and (Ningsi, A., 2021) documented how video-based health education improved BSE knowledge, attitude, and behavior.

This study investigates the effectiveness of animated video-based health education—augmented with self-efficacy and peer support components—in enhancing BSE skills among female high school students in Banda Aceh.

## **METODE PENELITIAN**

This study employed a quantitative research design with a pre-experimental approach, specifically using a one-group pre-test post-test design. The research was conducted at SMAN 5 Banda Aceh, Syiah Kuala District, from January to March 2025. The population comprised all 155 11th-grade female students at SMAN 5 Banda Aceh. Sampling was carried out using proportional stratified random sampling, resulting in a total of 38 respondents. The research instrument used was a checklist of breast self-

examination (BSE) procedural steps, adopted from Iriani (2020). Data processing and analysis were performed using the Wilcoxon test.

## RESULTS AND DISCUSSION

The results of the study conducted from January to March 2025 are presented as follows:

**Tabel 1.** The characteristics of the respondent

No.	Characteristic	f	Persentase (%)
1.	Age	26	68,4
	years	12	31,6
	years		
2.	Menarche	10	26,3
	years	28	73,7
	13-15 years		
3.	Information about BSE	14	36,8
	Yes	24	63,2
	No		
4.	Sources of BSE	1	2,6
	Family	4	10,5
	Helath workers	8	21,1
	Friends	24	63,2
	Others (No. information received)		

Based on Table 1, most respondents at SMAN 5 Banda Aceh in 2025 were 17 years old, totaling 26 students (68.4%). Regarding age at menarche, the majority experienced menarche at 13–15 years old, totaling 28 students (73.7%). Most respondents had never received information about BSE (63.2%). Similarly, most respondents did not know the source of BSE information (63.2%).

**Tabel 2.** BSE Skills of Female Students Before and After Animated Video-Based Health Education

No.	BSE skilss of female students	Pre Test		Post Test	
		f	%	f	%
1.	Good	8	21,1	24	63,2
2.	Moderate	10	26,3	8	21
3.	Poor	20	52,6	6	15,8
	Total	38	100	38	100

The results showed that prior to health education using animated video media, most respondents had poor BSE skills, totaling 20 students (52.6%). After the intervention, the BSE skills of the respondents improved, with the majority categorized as good, totaling 24 students (63.2%).

**Tabel 3.** Effectiveness Test Results of Animated Video-Based Health Education on BSE Skills Among Female Students at SMAN 5 Banda Aceh

	Mean	p-value	Results
Pre test	13.1		
Post test	24.2		
Pre test	13.1	0.000	Ha is accepted
Post test	24.2		

The results of the study indicated a significant difference in breast self-examination (BSE) skills before and after the intervention, with post-test scores being higher than pre-test scores. The Wilcoxon statistical test yielded a p-value of 0.000 ( $<0.05$ ), leading to the decision to reject  $H_0$  and accept  $H_a$ . Thus, it can be concluded that health education using animated video media is effective in improving BSE skills among female students at SMAN 5 Banda Aceh.

These findings are consistent with prior studies that emphasize the role of audiovisual and interactive media in enhancing adolescent health literacy. For instance, (Murniati, N., Nurliah, & Meutia, 2023) and (Daryanti, 2022) found that animated videos could significantly improve students' understanding and retention of reproductive health information compared to traditional lectures. Similarly, (Kucheki, 2024) demonstrated that virtual educational interventions based on self-efficacy theory increased BSE proficiency among women.

The significant skill improvement observed in this study can be attributed to the visual and narrative strengths of animated media, which are particularly effective for digital-native adolescents. Studies explained that narrative 360° videos enhance engagement and experiential learning, aligning with findings from this study where students responded positively to visual explanations of BSE procedures. (Farmer, H., 2024)

In addition, psychosocial and informational determinants play an important role. A majority of students in this study had never received information about BSE before the intervention. This supports the conclusion by (Dewi, 2022) that a lack of knowledge and perceived barriers are major constraints in BSE adoption. Post-intervention, students demonstrated not only improved procedural knowledge but also motivation to perform monthly BSE, reflecting the positive influence of accessible and relatable educational tools.

Furthermore, this research supports the findings of (Idrees, S., 2023), who reported that animation-based education was more preferred and better organized than physical simulations for young women. Also, studies by (Farasari, 2023), (Putri, 2022) and (Ningsi,

A., 2021) corroborate that video-based health education programs can effectively improve knowledge, attitudes, and practices (KAP) related to BSE.

Given the positive outcomes, schools should consider integrating animated health education into their curriculum. Collaborations with local health authorities to implement consistent health education sessions and training, especially through the School Health Unit (UKS), are also recommended. Such integration would help institutionalize early breast cancer detection practices among adolescent girls.

## CONCLUSION AN RECOMMENDATIONS

### Conclusions

Health education using animated video media was effective in improving breast self-examination (BSE) skills among female students, as indicated by a p-value of 0.000 ( $\alpha$  0.05).

### Recommendations

1. It is recommended to utilize animation-based learning media as an educational strategy in delivering reproductive health information at schools.
2. It is suggested to develop a more systematic and integrated reproductive health education program within the school curriculum, including BSE training sessions.
3. It is encouraged to expand the use of animated media as an educational tool in adolescent health education programs at schools.

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