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DOI: [10.31965/infokes.Vol21Iss2.1181](https://doi.org/10.31965/infokes.Vol21Iss2.1181)Journal homepage: <http://jurnal.poltekkeskupang.ac.id/index.php/infokes>**RESEARCH****Open Access****The Effectiveness of Na'o Beps Animation Video on Young Women's Knowledge and Skills in Early Detection of Breast Cancer by Breast Self-Examination (BSE)****Veny Delvia Pombaile<sup>1a\*</sup>, Sutinah<sup>2b</sup>, Mardiana Ahmad<sup>1c</sup>, Andi Wardihan Sinrang<sup>1d</sup>, Werna Nontji<sup>3e</sup>, Stang<sup>4f</sup>**<sup>1</sup> Department of Midwifery, Graduate School, Hasanuddin University, Makassar, South Sulawesi, Indonesia<sup>2</sup> Faculty of Marine Science and Fisheries, Hasanuddin University, Makassar, South Sulawesi, Indonesia<sup>3</sup> Academy of Midwifery, Menara Primadani, Soppeng, South Sulawesi, Indonesia<sup>4</sup> Department of Biostatistics, Faculty of Public Health, Hasanuddin University, Makassar, South Sulawesi, Indonesia<sup>a</sup> Email address: [pombailevd21p@student.unhas.ac.id](mailto:pombailevd21p@student.unhas.ac.id)<sup>b</sup> Email address: [sutinah.made@unhas.ac.id](mailto:sutinah.made@unhas.ac.id)<sup>c</sup> Email address: [mardianaahmad@pasca.unhas.ac.id](mailto:mardianaahmad@pasca.unhas.ac.id)<sup>d</sup> Email address: [wardihans@gmail.com](mailto:wardihans@gmail.com)<sup>e</sup> Email address: [werna\\_uh@yahoo.co.id](mailto:werna_uh@yahoo.co.id)<sup>f</sup> Email address: [stangbios@gmail.com](mailto:stangbios@gmail.com)

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**Abstract**

Breast cancer ranks first in cancer-related deaths in women in the world, which are generally found at an advanced stage. Breast self-examination (BSE) that has been used since puberty can detect breast cancer symptoms earlier so that treatment can achieve a survival probability of 90% or more. Animated video is one of the developments in health education media that is in line with advances in digital technology. This study aims to determine the effectiveness of the Na'o Beps animated video on improving the skills of young women in performing breast self-examination (BSE). This research is a research & development model of 4D development (define, design, develop, disseminate) and the research design used a pre-experimental design with a one-group pretest-posttest design. The sample in this study was all grade VIII students at SMP Negeri 14 Gorontalo City, Gorontalo Province in 2022, a total of 36 students. The sampling technique used purposive sampling. Data analysis in this study was carried out by the Wilcoxon test. The results showed that there were significant differences in the knowledge ( $p=0.00$ ) and skills ( $p=0.000$ ) of female adolescents regarding breast self-examination (BSE) after the intervention with the Na'o Beps animation video. Conclusion Health education using animated video media is effective in increasing the knowledge and skills of young women about breast self-examination (BSE) so that it can be used as an alternative medium in providing health education.

**Keywords:** Video Animation, Breast Self-Examination, Knowledge, Skills, Health Education.**\*Corresponding Author:**

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## 1. INTRODUCTION

Breast cancer is a disorder of the breast in the form of a malignant tumor that is formed from breast cells that grow and develop uncontrollably so that it spreads between tissues or organs around the breast or other parts of the body (Tanjung & Hadi, 2018). Breast cancer ranks first in cancer-related deaths in women in the world (Omar et al., 2020), according to data from the World Health Organization (WHO) in 2020 there were 685.000 deaths and 2,26 million new cases of breast cancer worldwide (World Health Organization, 2021). This number is estimated to continue to grow if it is not addressed immediately, around 26 million people will likely become breast cancer sufferers and 17 million of them will die by 2030 (Tanjung & Hadi, 2018).

Breast cancer is designated as the most common cancer in Indonesia in Permenkes No. 34 of 2015 (Marfianti, 2021). The number of new cases of breast cancer in Indonesia in 2020 reached 68,858 cases (16,6%) of a total of 396,914 cases (Kementerian Kesehatan Republik Indonesia, 2022), previously only 58,251 cases in 2018 (World Health Organization, 2020). Data from Globocan in 2020, the number of breast cancer deaths in Indonesia has reached more than 22.000 people, of which 70% are detected at an advanced stage (Kementerian Kesehatan Republik Indonesia, 2022). Even if it can be detected early, the treatment will achieve a survival probability of 90% or higher (World Health Organization, 2021). One way for early detection of breast cancer can be done easily is through breast self-examination (BSE) (Pradnyandari et al., 2022) which is quite effective for finding breast cancer at an early stage in Indonesia (Sari et al., 2020), where the use of mammography as a screening tool is still limited due to cost factors and tool distribution (Ardiansyah, 2022).

Gorontalo Province based on Indonesia's profile data in the last three years has experienced a decrease in the percentage of early detection of breast cancer in a row. In 2021 the province of Gorontalo ranks sixth out of 34 provinces in Indonesia with a percentage of 1,33% so it is feared that it will experience an increase in the number of cases and deaths from breast cancer so efforts are needed to increase public awareness about early detection of breast cancer (Kementerian Kesehatan Republik Indonesia, 2021).

Adolescents are a contributor to the number of breast cases, which, although the number is small, are more aggressive, usually diagnosed at a higher stage than adult breast cancer patients, so they require higher treatment and costs (Murphy et al., 2019). Therefore it is necessary to screen for breast cancer by accustoming adolescents to BSE (Dwitania, Azizah & Rosyidah, 2021). Preliminary studies by the Nottingham Center in England and the Canadian National Breast Screening Study (CNBSS) show that practicing BSE can help to reduce deaths from breast cancer that can be carried out since puberty (Albeshan et al., 2020).

BSE is still considered very effective because the diagnosis rate is relatively high, around 65%, so developing countries should use it specifically because of its affordability, flexibility, and ease of use, however, in these developing countries, the presentation of early detection is low due to lack of knowledge, lack of awareness or training and do not know how to practice BSE (Karimian et al., 2022). Increased knowledge and skills can be done through health education using educational media (Widyawati, 2020). One of the media providing education more interestingly is using animated videos (Marfianti, 2021). Animated video has two elements that synergize to provide a stimulus to hearing and sight which provides a more realistic picture thereby increasing memory retention because it is more interesting and easier to remember (Sandika, 2021). This is in line with research conducted by Nabilatul Fanny, et al which states that animated videos are more interesting, grab attention, and can be easily

remembered by teenagers so that their application is done more quickly (Fanny, Arif & Azizah, 2022).

Many researchers have carried out research related to BSE (Handayani, & Sudarmiati, 2012);(Pippin & Boyd, 2023);(Husna et al., 2019), but a combination of multimedia-based education is considered very important to increase knowledge and train young women's skills about BSE so that it can contribute to reducing mortality from breast cancer by detecting it earlier (Luo & Colditz, 2022). This study aims to determine the effectiveness of the Na'o Beps animated video on improving the skills of young women in performing breast self-examination (BSE).

## 2. RESEARCH METHOD

This research included research & development model 4D development (define, design, develop, disseminate) and research design using pre-experiment with one-group pretest-posttest design to determine changes in knowledge and skills about BSE before and after intervention with the research subjects. limited to 36 grade VIII students of SMP Negeri 14 Gorontalo City, Gorontalo Province, because BSE needs to be done from the start of puberty. This research was conducted in January 2023. The sampling technique used total sampling. The independent variable in this study was the educational media of the Na'o Beps animation video, while the dependent variable was BSE knowledge and skills. The research instrument used was the Na'o Beps animation video, which means an invitation to do BSE, and a questionnaire and BSE checklist which contains 6 steps on how to do BSE according to the Ministry of Health.

The first phase of this research involved developing educational media in the form of animated videos which included activities such as making animated videos, validation tests conducted by 2 media experts and 2 material experts, and field trials conducted on 30 young girls. The second stage consists of administering pre-tests to respondents, providing interventions using media that has been developed, and conducting an evaluation or post-test to all respondents in the 3rd week.

The research data was first tested for normality using the Kolmogorov-Smirnov test with the results of the data not being normally distributed and the homogeneity test using the Levene test with non-homogeneous results. Data were analyzed using the Wilcoxon Signed Rank Test to determine differences in BSE knowledge and skills before and after the intervention

This research has received research ethics from the ethics committee of the Faculty of Public Health, University Hasanuddin with number 15026/UN4.14.1/TP.01.02/2022.

## 3. RESULTS AND DISCUSSION

**Table 1.** Distribution of Respondents' Characteristics by Age and Age Menstruation First Time.

Category	Frequency	Percentage (%)
Age		
12 Years	2	5.6
13 Years	11	30.6
14 Years	19	52.8
15 Years	4	11.1
Menstruation first time		
9 Years	1	2.8
10 Years	7	19.4
11 Years	10	27.8
12 Years	14	38.9
13 Years	4	11.1

Table 1 shows the demographic characteristics of respondents at SMP Negeri 14 Gorontalo City, Gorontalo Province based on age with 19 female students (52.8%) being 14 years old and the age of menstruation at the time of the first menstruation, mostly at the age of 12, totaling 14 female students (38.9%).

**Table 2.** Distribution of Levels of Knowledge and Skills of Young Women about BSE.

Category	Na'o Beps Animation Video							
	BSE knowledge				BSE skills			
	Pretest		Posttest		Pretest		Posttest	
	n	%	n	%	n	%	n	%
Good	0	0	36	100	0	0	30	83.3
Enough	2	5.6	0	0	0	0	6	16.7
Not enough	34	94.4	0	0	36	100	0	0
Total	36	100	36	100	36	100	36	100

Table 2 shows that in this study most respondents had a lack of knowledge about BSE before giving treatment with animated video media of 34 respondents (94.4%), in this study it was found that the reason was that respondents very rarely received education about breast self-examination, while the counseling given by health workers did not use the media so that it was boring, especially breast self-examination was considered taboo among respondents. In addition, according to the researcher's assumption, the lack of knowledge is also caused by the age factor where the respondents are still young, between 12-15 years old, so they do not have a sense of concern for maintaining health, given their relatively healthy and productive physical condition (Zhang et al., 2018).

After being given treatment with animated video media there was a very good increase in knowledge because all respondents had a good level of knowledge of 36 respondents (100%) this indicated that respondents had understood the meaning, purpose, benefits, time, and method of performing BSE techniques with evidence from the respondent's ability to answer the questions given in the form of a questionnaire (Ahmad et al., 2022)

For the skill variable, it can be seen that all respondents before providing health education with animated video media had less skills regarding BSE, namely as many as 36 respondents (100%), this was due to the lack of knowledge possessed by the respondents. This is in line with previous research which stated that there was a significant relationship between knowledge and BSE skills (Abo Al-Shiekh et al., 2021). Knowledge has been highlighted as an important indicator of women's behavior and actions around BSE (Karimian et al., 2022). After being given an intervention using animated video media, it can be seen that most of the respondents' skills improved as many as 30 respondents (83.3%), with increased knowledge to increase the awareness of the respondents to motivate themselves to practice the BSE technique directly. Knowledge is a very important domain for the formation of one's actions (Indryani, 2021).

**Table 3.** Characteristics of Respondents' Knowledge and Skills on Breast Self-Examination (BSE).

Distribution Frequency	n	Minimum	Maximum	Means
Before intervention				
Knowledge	36	4	10	7.22
Skills	36	0	4	0.92
After intervention				

Knowledge	36	11	14	12.86
Skills	36	11	18	15

Table 3 shows that the level of knowledge and skills of the respondents before being given education with animated video media the average score of knowledge is 7.22 while for skills the average score is 0.92 and there is an increase in the knowledge and skills of respondents after being given education with animated video media the average score - average knowledge 12.86 and skills 15. Educational media such as animated videos have certain advantages because study time is free and can be done anywhere, and learning media that has animations or videos will increase students' knowledge and skills. This is in line with other research which states that the learning process using animation or video tutorials is better than non-technological learning media (Krey et al., 2022). The results of research conducted by Ulfa Farrah Lisa, et al in 2016 concluded that students' knowledge and skills about shoulder dystocia were higher in the group that used video media compared to the group without video media (Lisa et al., 2016)

**Table 4. Results of Analysis of the Effectiveness of Video Animation on the Knowledge and Skills of Young Women on Breast Self-Examination (BSE)**

Category	n	Knowledge	Skill	p-value
		Mean Rank		
Before	36	0.00	0.00	0.00
After	36	18.50	18.50	

Table 4 shows that the mean rank of knowledge of young women before being given education using the video animation Na'o Beps was 0.00, while after being given the mean rank was 18.50. Based on statistical tests, it was obtained that the value of  $p = 0.000$ , so it can be concluded that there is a significant influence between the provision of the Na'o Beps animation video and the level of knowledge of young women about breast self-examination (BSE). This is in line with previous research which shows that it is more effective to provide health education using animated video media than just discussions with significant significance values (Ruslinawati & Wulandatika, 2020).

The animated video media used makes it easy for respondents to understand the message to be conveyed because, in the animated video, the message is conveyed with moving images so that the delivery is clearer. Animated video has the main attraction not only being able to explain a material that is difficult to explain with other media but also having an aesthetic appeal so that the appearance is attractive and motivates users to be involved in the learning process (Ahmad et al., 2022).

For the variable skills of young women before being given education using the Na'o Beps animation video media was 0.00, while after being given the mean rank was 18.50. Based on statistical tests, it was obtained that the value of  $p = 0.000$ , so it can be concluded that there is a significant influence between the provision of education using the Na'o Beps animated video media and the skills of young women about BSE. This is in line with previous research which showed that the use of video animation media obtained better results compared to conventional methods for young girls, this is because, in animated video media, the images have a coherent flow to increase students' understanding, interest and skills in the material taught. delivered (Saputra & Shofa, 2015).

Technology has the potential to improve many good aspects of daily life including learning because it has been proven to increase student involvement in learning which includes more effective learning concepts, encourages more participation, increases learning satisfaction, and develops student skills (Mustafa et al., 2020). Health education using video for young women can clarify the pictures and steps in carrying out BSE because in the process of giving it the respondent does not only hear voices but the respondent will see directly and

clearly the steps for self-breast examination (Mardianti, Fahdi & Mita, 2021). This is in line with previous research which stated that the use of animated video media is better than using leaflet media because leaflet media only uses the sense of reading, so it is more difficult to explain the sequence of skills compared to animated videos (Iriyani, 2020)

#### 4. CONCLUSION

The use of video media has a better impact because health education relies on hearing and sight from the target, is interesting, the message conveyed is fast and easy to remember, and can develop thoughts and develop the imagination of young women. The findings in this study reveal that animated video media can significantly increase the knowledge and skills of young women. It is recommended that the Na'o Beps animated video be used as an educational medium by health services or junior high schools to be able to increase the knowledge and skills of young women about BSE. Suggestions for further research can be to carry out an assessment or posttest for each educational provision using media so that you can find out differences or developments in knowledge and skills each time education is given.

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