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The Effectiveness of Breast Self-Examination (BSE) Education using Audio-Visual Media and Simulation among Women of Childbearing Age

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ABSTRACT

Breast cancer remains one of the leading causes of morbidity and mortality among women. Early detection through Breast Self-Examination (BSE) is a simple and cost-effective however, BSE behavior among Women of Childbearing Age (WCA) is still low. Health education using appropriate media is expected to improve BSE behavior. This study aimed to determine the effectiveness of BSE education using audio-visual media compared with discussion and simulation of BSE techniques among Women of Childbearing Age. This study employed a quasi-experimental design with a two-group posttest-only approach. The population consisted of 60 Women of Childbearing Age, with a sample of 30 respondents selected using simple random sampling. Respondents were divided into two groups: audio-visual education (n = 15) and discussion with BSE technique simulation (n = 15). Data were analyzed using the Mann Whitney U test with a significance level of $\alpha = 0.05$. The results showed that 14 respondents (93.3%) in the audio-visual group and all respondents (100%) in the simulation group demonstrated very good BSE behavior. Statistical analysis revealed no significant difference between the two educational methods ($p = 0.350$). BSE education using audio-visual media and simulation techniques is effective in improving BSE behavior among Women of Childbearing Age. Both methods show comparable effectiveness and are recommended for implementation in health services and community-based health promotion programs.

Keywords: Behavior, Breast Self-Examination, Education, Women of Childbearing Age

BACKGROUND

Breast cancer is a malignant neoplasm originating from breast tissue, particularly from ductal or lobular epithelial cells, and remains one of the most common cancers among women worldwide (World Health Organization, 2021). Globally, breast cancer contributes significantly to cancer-related morbidity and mortality, with increasing incidence in low- and middle-income countries (Kementerian Kesehatan Republik Indonesia, 2019).

In Indonesia, breast cancer is among the leading cancers affecting women, with a steadily increasing number of new cases each year (Kemenkes RI, 2015). Data from GLOBOCAN indicate that millions of new cancer cases and deaths occur annually, and breast cancer is a major contributor to this burden (WHO, 2021).

Early detection is a key strategy in reducing breast cancer mortality. Breast Self-Examination (BSE) is a secondary prevention method that allows women to detect abnormalities in the breast at an early stage (Nisman, 2011). Despite its benefits, BSE practice among Women of Childbearing Age remains low due to limited knowledge, misconceptions, cultural taboos, and lack of access to health education (Arafah & Notobroto, 2017).

Health education plays a crucial role in improving health behavior. The use of audio-visual media and hands-on simulation has been shown to enhance understanding, attention, and skill acquisition (Aqib & Murtadlo, 2016; Erawantini & Nurmawati, 2016). Therefore, this study aimed to analyze the effectiveness of BSE education using audio-visual media compared with discussion and simulation of BSE techniques among Women of Childbearing Age.

METHODS

This study used a quasi-experimental design with a two-group posttest-only approach. The study was conducted on May 30, 2022. The population consisted of 60 Women of Childbearing Age, from which 30 respondents were selected using simple random sampling.

Respondents were divided into two groups. The first group received BSE education using audio-visual media in the form of educational videos. The second group received education through discussion and direct simulation of BSE techniques using breast phantom models. BSE behavior was assessed after the intervention using a structured observation checklist.

Data analysis was performed using the Mann Whitney U test due to non-normal data distribution, with a significance level set at $\alpha = 0.05$.

The quasi-experimental design with a two-group posttest-only approach was chosen to compare the effectiveness of different educational methods on Breast Self-Examination (BSE) behavior without influencing participants through a pretest. This design allowed the researchers to directly observe the outcomes of each intervention, minimizing the risk of learning bias that could occur if respondents were assessed before receiving the education. By focusing solely on post-intervention outcomes, the study aimed to capture the true impact of the educational strategies on participants' practical BSE behavior.

The selection of Women of Childbearing Age as the study population was based on their increased relevance in early detection efforts for breast abnormalities. This group plays a crucial role in preventive health behaviors, including routine BSE practice. The use of simple random sampling ensured that each eligible participant had an equal chance of being selected, thereby reducing selection bias and improving the representativeness of the sample. Dividing respondents evenly into two intervention groups also supported balanced comparison between the educational approaches.

The educational interventions were designed to address different learning styles. Audio-visual education through videos provided standardized information that could enhance understanding through visual demonstration and auditory explanation. In contrast, the discussion and simulation method emphasized active participation, allowing respondents to directly practice BSE techniques using breast phantom models under guidance. This hands-on approach was expected to improve psychomotor skills, confidence, and accuracy in performing BSE, which are essential components of effective self-examination behavior.

Assessment of BSE behavior using a structured observation checklist enabled objective evaluation of participants' performance following the interventions. The use of the Mann Whitney U test was appropriate due to the non-normal distribution of the data, ensuring accurate statistical comparison between the two groups. Setting the significance level at $\alpha = 0.05$ provided a standard threshold for determining meaningful differences in outcomes. Overall, this methodological approach strengthened the validity of the findings and supported evidence-based conclusions regarding the most effective educational strategy for improving BSE behavior.

RESULTS

A total of 30 respondents participated in the study, with 15 respondents in each intervention group. Most respondents were aged over 40 years, worked as housewives, and had a senior high school education.

A total of 30 respondents participated in this study, with an equal distribution of 15 respondents in each intervention group, ensuring balanced comparison between the educational methods. This equal allocation minimized the risk of unequal group influence on the outcomes and strengthened the internal validity of the study. By maintaining the same number of participants in both groups, differences in BSE behavior could be more confidently attributed to the type of educational intervention rather than to variations in group size.

The majority of respondents were over 40 years of age, a demographic characteristic that is particularly relevant to breast health promotion. Women in this age group face an increased risk of breast abnormalities, making early detection behaviors such as Breast Self-Examination especially important. Their age may also influence health awareness and motivation, as older women tend to have greater concern for preventive health measures and may be more receptive to educational interventions related to disease prevention.

In terms of occupation and educational background, most respondents were housewives with a senior high school level of education. As housewives, respondents may have more flexibility in managing their time, which can positively affect their participation in health education activities and the practice of BSE at home. A senior high school educational background suggests an adequate level of literacy to understand health information delivered through both audio-visual media and hands-on simulation. These characteristics indicate that the respondents had sufficient capacity to comprehend and apply the educational content, supporting the effectiveness of the interventions in improving BSE behavior.

In the audio-visual group, 14 respondents (93.3%) demonstrated very good BSE behavior, while 1 respondent (6.7%) showed good behavior. In the simulation group, all respondents (100%) demonstrated very good BSE behavior. The Mann Whitney U test showed no statistically significant difference between the two groups ($U = 95.000$; $p = 0.350$).

The results section presents the distribution of respondents' characteristics and the outcomes of Breast Self-Examination (BSE) behavior following the two educational interventions. A total of 30 respondents were included in the analysis, equally divided between the audio-visual education group and the discussion simulation group. Overall, most respondents were over 40 years of age, worked as housewives, and had completed senior high school education, indicating relatively homogeneous baseline characteristics between the two groups. This homogeneity supports the comparability of the intervention outcomes.

Table 1. Distribution of BSE Behavior Outcomes After Educational Interventions

Intervention Group	BSE Behavior Category	Frequency (n)	Percentage (%)
Audio-visual media	Very good	14	93.3
	Good	1	6.7
Total		**15**	**100**
Simulation method	Very good	15	100.0
	Good	0	0.0
Total		**15**	**100**

The table shows that both educational approaches resulted in high levels of BSE behavior among respondents. In the audio-visual group, the majority of participants (93.3%) demonstrated very good BSE behavior, while a small proportion (6.7%) showed good behavior. In comparison, all respondents in the simulation group achieved a very good level of BSE behavior. Despite this descriptive difference favoring the simulation method, statistical analysis using the Mann Whitney U test indicated no significant difference between the two groups ($U = 95.000$; $p = 0.350$). These findings suggest that both audio-visual education and discussion with direct simulation are equally effective in improving BSE behavior among

Women of Childbearing Age, and either method may be applied as an effective health education strategy depending on available resources and context.

DISCUSSION

The findings indicate that both audio-visual media and discussion with simulation are effective in improving BSE behavior among Women of Childbearing Age. Audio-visual education allows participants to observe and understand the steps of BSE clearly, which enhances attention and comprehension (Aqib & Murtadlo, 2016). This finding is consistent with previous studies showing that video-based education effectively improves health-related behaviors (Erawantini & Nurmawati, 2016).

Simulation-based education provides hands-on experience, enabling participants to practice BSE techniques directly. The use of breast phantom models helps participants understand breast anatomy and identify abnormal findings more accurately. This approach has been reported to significantly enhance practical skills and confidence (Pratiwi et al., 2019).

The absence of a significant difference between the two methods suggests that both educational approaches are equally effective in improving BSE behavior. These findings align with previous research indicating that various educational media can yield similar outcomes when appropriately implemented (Lusiana, 2019).

The effectiveness of both educational approaches in this study highlights the importance of selecting appropriate health education strategies that align with the characteristics of the target population. Women of Childbearing Age, particularly those over 40 years old, may benefit from educational methods that are clear, practical, and easy to apply in daily life. Audio-visual media and simulation-based discussions both fulfill these criteria by providing structured information and facilitating understanding of BSE procedures, which are essential for promoting consistent self-examination practices.

Audio-visual education plays a crucial role in enhancing cognitive learning outcomes by combining visual and auditory stimuli. Through educational videos, participants can repeatedly observe correct BSE techniques, reinforcing memory and understanding. This method is especially beneficial for individuals with a senior high school educational background, as visual demonstrations simplify complex information and reduce misinterpretation. Moreover, standardized video content ensures consistency in message delivery, which is critical for achieving uniform learning outcomes across participants.

Discussion combined with simulation, on the other hand, emphasizes experiential learning and active engagement. By directly practicing BSE techniques using breast phantom models, participants are able to translate theoretical knowledge into practical skills. This approach also encourages interaction between educators and participants, allowing immediate clarification of misconceptions and personalized feedback. Such direct involvement has been shown to increase self-efficacy, which is a key determinant of sustained health behavior change.

The lack of a statistically significant difference between the two intervention groups suggests that the success of BSE education is not solely dependent on the medium used, but rather on the quality and clarity of the educational content. When information is delivered in a structured, comprehensible, and context-appropriate manner, different media can achieve comparable behavioral outcomes. This finding supports the notion that flexibility in educational method selection is possible without compromising effectiveness, particularly in community-based health promotion programs.

From a practical perspective, these results have important implications for health practitioners and policymakers. Audio-visual media may be more cost-effective and easier to disseminate in settings with limited human resources, while simulation-based education may be more suitable for smaller groups where hands-on practice is feasible. Integrating both approaches could further enhance learning by addressing diverse learning preferences and reinforcing both

cognitive and psychomotor aspects of BSE. Future studies are recommended to explore long-term behavioral retention and the combined use of multiple educational methods to maximize the impact of BSE promotion programs.

CONCLUSION

BSE education using audio-visual media and discussion with simulation techniques is effective in improving Breast Self-Examination behavior among Women of Childbearing Age. There is no significant difference in effectiveness between the two methods. Both approaches are recommended for use in community health education programs to promote early detection of breast cancer.

REFERENCES

Aqib, Z., & Murtadlo, A. (2016). *Kumpulan metode pembelajaran*. Satu Nusa.

Arafah, A. B. R., & Notobroto, H. B. (2017). Factors associated with breast self-examination practices among housewives. *The Indonesian Journal of Public Health*, 12(2), 143–153.

Erawantini, F., & Nurmawati, I. (2016). Breast self-examination training as a breast cancer prevention effort. *Proceedings of Health Promotion Seminar*, 45–52.

Kementerian Kesehatan Republik Indonesia. (2015). *Guidelines for breast cancer management*. Kemenkes RI.

Kementerian Kesehatan Republik Indonesia. (2019). *Cancer burden in Indonesia*. Kemenkes RI.

Lusiana, W. (2019). Differences in motivation of women of childbearing age before and after BSE education using simulation methods. *Nursing Journal*, 7(2), 88–95.

Nisman, A. W. (2011). *Five minutes to know your breasts*. Andi Publisher.

Pratiwi, A. W. E., Afriyani, L. D., & Zulkarnain, A. (2019). Effectiveness of health education using leaflet and audio-visual media on BSE behavior. *Journal of Holistics and Health Science*, 1(1), 1–10.

World Health Organization. (2021). *Breast cancer*. WHO.