



## **Knowledge, Attitudes and Behavior of Female Students in Breast Self-Examination**

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### **ABSTRACT**

*Breast Self-Examination (BSE) is a simple, effective, and independently performed method for early detection of breast cancer. This study aims to determine the level of knowledge, attitudes, and behavior of female students regarding BSE implementation and to analyze the relationship between knowledge and attitudes with behavior. This study is a quantitative study with a descriptive analytical approach and a cross-sectional design. The sample consisted of 129 second-semester female students of the D-III Midwifery Study Program at the Gorontalo Ministry of Health Polytechnic, selected by total sampling. The results showed that most respondents had good knowledge (65.9%), very good attitudes (57.4%), and supportive behavior in performing BSE (87.6%). The Chi-Square test showed a significant relationship between knowledge ( $p=0.017$ ) and attitudes ( $p=0.009$ ) with BSE behavior. It was concluded that the better the female students' knowledge and attitudes, the more likely they were to behave in a supportive manner to perform BSE independently. Therefore, ongoing health education interventions are needed to improve female students' understanding and motivation in performing BSE regularly.*

**Keywords:** *Attitude, Behavior, Knowledge, Midwifery Students, SADARI*

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## INTRODUCTION

Breast cancer is a type of cancer with a high prevalence in women worldwide. If left untreated, breast cancer can spread to other organs and cause death. According to the World Health Organization (2022), cancer is a leading cause of death, with approximately 10 million deaths in 2020, with breast cancer ranking first with 2.26 million cases. Globally, breast cancer accounts for 12.5% of all cancer cases (World Cancer Research Fund, 2020). (Asti & Asriati, 2024); Saputri et al., 2024).

In the United States, the American Cancer Society (2023) reported 1,958,310 new cases and 609,920 deaths from cancer, with breast cancer being the leading cause of death in women. In Indonesia, the Ministry of Health (2020) reported a breast cancer incidence rate of 42.1 per 100,000 population, with a mortality rate of 17 per 100,000 population. These figures place breast cancer as the leading cause of death in women after cervical cancer.

(Saputri et al., 2024)(Siregar, 2022).

Data from Gorontalo Province shows a trend of increasing breast cancer cases, reinforcing the importance of early detection through Breast Self-Examination (SADARI). Given the high prevalence and potentially fatal consequences, early detection is crucial in reducing breast

cancer mortality. By equipping themselves with this knowledge, women can play an active role in maintaining their health and reducing the risk of serious complications. Gorontalo Province is one of the regions with an annual increase in breast cancer cases. In 2021, there were 41 cases, while in 2022, there was a significant increase of 281 cases, with most cases being detected at an advanced stage. Meanwhile, in 2023, the government set a screening target of 124,392 people, with a total of 43,794 breast cancer screenings (35%) (Gorontalo Provincial Health Office, 2024).

Meanwhile, at several hospitals in Gorontalo Province, including Aloe Saboe Regional Hospital, there were 377 cases of breast cancer in 2023, and 30 cases in 2024 from January to May. Meanwhile, at Toto Kabilia Regional Hospital, there were 13 cases of breast cancer in 2021, 27 cases in 2022, and 44 cases in 2023. At Dr. Hasri Ainun Habibie Regional Hospital, there were 13 cases of breast cancer recorded in 2021, 27 cases in 2022, and 44 cases in 2023.(Fidyathul et al., 2025) (Abdul et al., 2025).

The factors that influence SADARI behavior in mothers show that it is influenced by attitudes, lack of information and accessibility of health services (Marfianti, 2021)

Previous researchers (Elizawarda & Desfauzia, 2024, (Sirait & Ratti, 2024) stated that breast cancer is a health problem and a leading cause of death in women. Many women are unaware they have breast cancer, and it's only diagnosed when it's already in an advanced stage. Data from the World Health Organization (WHO) Global Cancer Observatory in 2018 shows that breast cancer is the most common cancer in the world.

One of the initial screenings is BSE (Breast Self-Examination) (Ministry of Health of the Republic of Indonesia, 2020). BSE can be performed well if the person has good knowledge. Someone with good knowledge tends to have good BSE behavior, and BSE behavior can be performed well and can be sustained if the person has good BSE knowledge. (Haryanti & Kamesyworo, 2022); Meilina, 2024)

Based on this background, researchers have found that breast cancer incidence continues to rise and is the most common cancer among Indonesian women. It is crucial for women to reduce breast cancer morbidity and mortality, through increased awareness and knowledge about the disease. (Anugerah et al., 2021; Istiqomatunnisa, 2021)

## METHOD

This study employed a quantitative cross-sectional design to measure variables simultaneously. The study population was 129 second-semester female students in the Diploma III Midwifery Study Program at the Gorontalo Ministry of Health Polytechnic. The entire population was sampled using a total sampling technique to ensure comprehensive data. The research instrument used was a structured questionnaire consisting of 10 items for knowledge, 18 items for attitudes, and 14 items for behavior.

Data analysis used the Statistical Package for Social Sciences (SPSS) software.

## RESULTS AND DISCUSSION

### Result

Table 1. Female Students' Knowledge about

| Knowledge Category  | Frequency | Percentage % |
|---------------------|-----------|--------------|
| Good (76-100 %)     | 85        | 65.9%        |
| Enough (56-75 %)    | 32        | 24.8%        |
| Not Enough (< 56 %) | 12        | 9.3%         |
| Total               | 129       | 100%         |

Table 1. shows that the majority of female students have a good level of knowledge, namely 85 students (65.9%), which is higher than the students with a poor level of knowledge, namely 12 students (9.3%).

Table 2. Female Students' Attitudes about BSE

| Attitude Category     | Frequency | Percentage % |
|-----------------------|-----------|--------------|
| Good ( 76-100 % )     | 74        | 57.4%        |
| Enough ( 56-75 % )    | 47        | 36.4%        |
| Not Enough ( < 56 % ) | 8         | 6.2%         |
| Total                 | 129       | 100%         |

Table 2. shows that of the 129 students, the majority of respondents had a good

attitude, namely 74 students (57.4%) and 8 students had a bad attitude (6.2%).

Table 3. Female Student Behavior regarding

| Behavior Category             | Frequency | Percentage % |
|-------------------------------|-----------|--------------|
| Support (>5)                  | 116       | 87.6%        |
| Does not support ( $\leq 5$ ) | 13        | 12.4%        |

## Discussion

SADARI is an early detection step to find early-stage breast cancer which will be more effective if done as early as possible, because 85% of breast abnormalities are first recognized by patients during mass screening. (Anggraini & Nurjanah, 2024; These findings indicate that the majority of female students have good knowledge and attitudes, as well as supportive behaviors in implementing BSE. These consistent results indicate that increasing knowledge and attitudes can encourage BSE practice. This is supported by other studies, such as the study by Tilka Ayattula et al. (2024) which found a significant relationship between knowledge and BSE practice. Similarly, Haryanti & Kamesyworo (2022) also reported a positive relationship between knowledge levels and BSE practice. However, several studies have presented conflicting results, underscoring the complexity of health behaviors. For example, the study by Doloksaribu et al. (2023) showed that high knowledge does not always guarantee appropriate behavior, as other factors such as environmental support and access to information also play an important role. Karni et al., 2024)

| Total   | 129 | 100% |
|---|-----|------|
| Table 3. shows that the majority of respondents have supportive behavior (87.6%), and some do not support it (12.4%). |     |      |

This research is in line with research conducted by (Tilka Ayattula et al., 2024) which stated that there is a significant relationship between knowledge and breast self-examination behavior.

(BSE) with a Spearman Rank test significance value of 0.004 (p-value <0.05) This is also in line with research conducted by (Haryanti & Kamesyworo, 2022) (Khairunnisa et al., 2025) with a cross-sectional approach with a sample size of 142 research samples, the results of the chi-square test show that there is a relationship between the level of knowledge and BSE behavior, namely 0.000 (p-value <0.05).

The results of the analysis are in accordance with previous research conducted by oleh (Durriyyah et al., 2023) which stated that there is a relationship between the variable of knowledge and SADARI behavior, where a person with a high knowledge category is more likely to perform SADARI than a person with low knowledge.

Notoatmodjo (2019) suggests that knowledge is a crucial predisposing factor in shaping behavior. Behavior based on knowledge tends to be more enduring and

stable than behavior not based on adequate understanding. Furthermore, a positive attitude serves as a form of mental readiness for an individual to perform actions, including the practice of BSE. Therefore, the findings of this study reaffirm the urgency of systematically designed health education interventions. Such interventions are needed not only to increase knowledge but also to foster positive attitudes, which will ultimately encourage women to perform BSE as a routine practice. (Saputri et al., 2024); (Fitriyani & Handayani, 2021); (Hidayah & Amin, 2024)

According to (Sirait & Ratti, 2024); (Anugerah et al., 2021) (Doloksaribu et al., 2023), female students' higher knowledge about breast cancer and breast self-examination does not necessarily influence breast self-examination behavior.

Attitude is a kind of readiness or willingness to take action, not the implementation of a specific motive. Someone with a good attitude will be able to take action to perform a breast self-examination to detect any abnormalities in their breasts early. (Sari et al., 2022; Fithriyyah et al., 2025)

Human behavior is the result of human experience and interaction with their environment, manifested in the form of knowledge. In other words, behavior is an

individual's response or reaction to stimuli from both outside and within themselves. Behavior is called a reflexive response, meaning that a reaction or action is taken based on the stimulus given or received. According to (Siregar, 2022) in line with his research that Attitude is how people or respondents think or assess things related to health, Health - illness is a factor related to health risk factors. This research is in line with the results of research by Desti Wahyuni et al (2015), that there is a significant relationship between respondents' attitudes and the implementation of BSE with a p value of 0.000.

## CONCLUSION

The results of this study indicate that female midwifery students at the Gorontalo Ministry of Health Polytechnic possess good knowledge, positive attitudes, and behaviors that support BSE. This is an important asset considering their strategic role as future healthcare workers. Further analysis confirmed that knowledge and attitudes are significantly related to BSE behavior. Therefore, to maintain and improve this practice, structured and integrated health education interventions are needed within the midwifery education curriculum. The addition of a routine BSE practicum program is also highly recommended to transform knowledge and

attitudes into sustainable practical skills, which will ultimately strengthen breast cancer prevention efforts in the community.

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