PROFESIONAL HEALTH JOURNAL
Volume 8, No. 1, December 2026 (Page. 114-124)
Available Online at https://www.ojsstikesbanyuwangi.com/index.php/PHJ/index
E-ISSN 2715-6249
DOI: https://doi.org/10.54832/phj.v8i1.1308

Dominant Factors Related to the Breast Self Examination Behavior of Female Students of SMAN 1 Asembagus, Situbondo Regency

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ARTICLE INFORMATION

Article history
Received (19 September 2025)
Revised (15 December 2025)
Accepted (30 December 2025)

Keywords
Keywords must contain at least three to five keywords representing the main content of the article

ABSTRACT

Introduction: *The incidence of breast cancer in Indonesia in 2020 showed 68,858 new cases, which contributed 16.6% of the total 396,914 new cancer cases overall. The WHO recommends cancer prevention as an essential component of all cancer control plans. Early detection through breast self-examination (BSE) is one of the recommended methods to reduce breast cancer mortality. However, awareness and practice of BSE among Indonesian women remain low. Several determinants of breast self-examination behavior have been identified, including family history, knowledge, behaviours, and family support. Objectives The purpose of this study is to analyze the dominant factors related to BSE behavior in female students at SMAN 1 Asembagus.*
Methods: *This study used a cross-sectional method with a sample of 62 respondents drawn using a stratified sampling technique. The instrument used was a questionnaire. Data analysis used the chi-square test and multiple logistic regression.*
Results: *Family history, knowledge, behaviour and family support were proven to have a statistical relationship with the self-examination behavior of female students of SMAN 1 Asembagus with p values of 0.002; 0.000; 0.000; 0.044. The results of the multivariate test showed that family support was the dominant factor with an OR of 6.7 times the risk of performing self-examination.*
Conclusions: *Family history, knowledge, behaviour, and family support factors have a statistically significant relationship with BSE behavior in female students of SMAN 1 Asembagus. The dominant factor related to BSE behavior in female students of SMAN 1 Asembagus is the family support factor with the largest OR among other factors, namely 6.7. Nurses as health workers have a strategic role in educating and empowering families to provide optimal support, both emotionally, instrumentally, in terms of information, and through assessment.*

Keywords: Breast Cancer, BSE, Family History, Knowledge, Behaviour, Family Support,

Introduction

Breast cancer is a malignant tumor that affects breast tissue. This tissue consists of the mammary glands (milk-producing glands), the ducts (milk ducts), and the supporting tissue of the breast. Breast cancer does not affect the skin of the breast, which acts as a covering. Breast cancer causes breast cells and tissue to change shape, become abnormal, and multiply uncontrollably. The continuously increasing global and national burden of breast cancer, particularly in developing countries. A major challenge in Indonesia is that a high proportion of patients are diagnosed at advanced stages, which significantly decreases survival rates and increases healthcare costs. Early detection, such as through Breast Self-Examination (BSE), is a globally recommended strategy, with early diagnosis offering up to a 90% recovery rate. Despite

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national and global initiatives, including the WHO's goal to prevent millions of deaths by 2040 through early detection, low public awareness remains the biggest barrier to early screening in Indonesia. Therefore, understanding and addressing the factors that influence BSE behavior, especially among young women who are the target group for this primary prevention method, is crucial to improve early detection rates and directly contribute to reducing breast cancer mortality in Indonesia (Mardiana, 2017).

Breast cancer is the most common cancer in women in 157 of 185 countries in 2022. In the same year, breast cancer caused 670,000 deaths worldwide (WHO, 2024) . The incidence of breast cancer in Indonesia based on data obtained from the Global Burden Of Cancer in 2020 showed that there were 68,858 new cases of breast cancer, which contributed 16.6% of the total 396,914 new cancer cases overall. The death rate from breast cancer is quite high with more than 22,000 cases in 2020. There was an increase in deaths from breast cancer in 2022 by 68% while contributing 11.5% of new cases and becoming the most common cancer among women in the world (Kirtishanti et al., 2025) . In East Java Province in 2023, the number of women who received early detection of breast cancer was 1,394,986 people from data on women of childbearing age 30–50 years in East Java (22.2%), and lumps were found in 2,572 people (0.2%). The target of 70% of women aged 30–50 years who received early detection of breast cancer, no district/city has yet achieved the target (American Cancer Society, 2025) . This is due to many influencing factors, such as not all women aged 30–50 years are aware of the importance of early detection of breast cancer, fear/embarrassment during examinations, and lack of support from various cross-sectors to encourage targets to undertake early detection of breast cancer (Dinkes, 2023) .

The World Health Organization recommends cancer prevention as a critical component of all cancer control plans because approximately 40% of all cancer deaths are preventable. Early detection through Breast Self-Examination (BSE) is one of the recommended methods to reduce breast cancer mortality (Ministry of Health, 2019) . However, the level of awareness and practice of BSE among Indonesian women remains low. A study showed that only 43.14% of women perform BSE regularly (WHO, 2024) . Based on several studies, several determinants of breast self-examination behavior have been identified, such as women's educational status, knowledge about breast cancer, and behaviours toward BSE (Azhar et al., 2023) .

Several factors can contribute to individuals not performing breast self-examination (BSE), and these factors are interrelated, including education, knowledge, behaviour, family history, and family support. A person's education is closely related to their level of knowledge. The higher the education level, the more information they possess. This also impacts their behaviour. This is in line with previous research that shows that both positive and negative behaviours can influence a person's behavior and readiness to act. Furthermore, family history also plays a significant role in BSE behavior. Women with a family history of breast cancer have a 2-3 times greater risk of developing breast cancer. Therefore, women with a family history of breast cancer are more aware of the importance of BSE for early breast cancer detection. Family support also provides motivation to perform BSE. Family members, especially parents, are highly influential sources of knowledge, beliefs, behaviours, and life values for children (Siregar, 2022) .

Self-examination (BSE) is crucial as a first step in detecting breast cancer. BSE is a form of behavior. Behavior is determined by three factors: predisposing factors, enabling factors, and reinforcing factors. Predisposing factors are factors that facilitate the behavior, such as knowledge, behaviours, and education level. Enabling factors include the availability of health services, accessibility, and ease of health care. Reinforcing factors are factors that strengthen (and sometimes even soften) the behavior. Reinforcing factors can be obtained from social and family support (Rosyad, 2018) . Information about breast cancer, BSE, and factors related to BSE behavior can be the main basis for increasing knowledge about breast examinations. Increasing knowledge about breast self-examination will influence women's behaviours and behaviors,

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making them aware of the importance of breast self-examination in preventing the risk of breast cancer. This can also serve as a basis for community nurses to raise awareness among women, especially those in adolescence and early adulthood, to motivate and directly practice breast self-examination so they can determine their breast condition (Fatimah, 2021) . BSE is a preventative measure that can be taken before the curative stage of cancer treatment.

Comprehensive breast cancer management is multidisciplinary and involves a combination of systemic and local treatments, guided by the specific tumor subtype (e.g., hormone receptor (HR) status, HER2 status) and disease stage. Pharmacological treatment options, also known as systemic therapies, have undergone significant development. These include cytotoxic chemotherapy (often used for aggressive subtypes such as triple-negative and HER2-positive tumors), endocrine (hormone) therapy (such as selective estrogen receptor modulators (SERMs) and aromatase inhibitors (AIs)) for HR-positive cancers, and precision targeted therapy. Newer targeted agents such as cyclin-dependent kinase 4 and 6 (CDK4/6) inhibitors have become the standard first-line treatment for advanced HR-positive breast cancer, often combined with endocrine drugs to inhibit tumor proliferation. Treatment also focuses on local control and includes surgery (either mastectomy or breast-conserving surgery (BCS)) and radiation therapy (RT). RT is an integral part of treatment, often administered after surgery (adjuvant) or before surgery (neoadjuvant). Recent evidence supports the use of shorter hypofractionated RT regimens, which have demonstrated equivalent oncological outcomes while reducing treatment time and toxicity for selected patients.

Furthermore, many patients are exploring non-pharmacological therapies, such as Complementary and Alternative Therapies (CAM), to manage symptoms and improve quality of life. While alternative therapies used in place of conventional medical treatment lack scientific evidence and are strongly discouraged, complementary therapies used in conjunction with standard treatment can be beneficial. Evidence-based complementary methods often recommended for symptom management in breast cancer patients include acupuncture (to reduce pain and treatment-related nausea/fatigue), yoga, meditation, and massage therapy (to reduce anxiety). Caution is still warranted, as certain natural products (e.g., herbal remedies or high-dose supplements) have the potential to cause adverse interactions with chemotherapy or hormone therapy, emphasizing the need for patient-physician consultation (Apsari, S., & Putri, N. M. P. S., 2025).

This research is relevant to several previous studies that link factors such as family history, knowledge, behaviours, and family support with Breast Self-Examination (BSE) behavior in adolescents or young women. Research conducted by Smith, J., et al. (2021) supports the finding that individuals with a family history of breast cancer are more motivated to perform regular breast self-examinations, and also shows that positive behaviours contribute significantly to increased BSE behavior in adolescent girls. In line with research conducted by Lee, S., Kim, H. & Park, J. (2023) which strengthens the finding that educational interventions that increase positive behaviours towards breast cancer can significantly increase BSE awareness and behavior. Another highly relevant study is research at SMA Negeri 1 Padalarang in 2024 which found a significant relationship between the level of breast cancer knowledge and early detection behavior using the BSE technique, where the better the knowledge of female students, the more likely they are to perform BSE.

Based on the results of interviews conducted with grade XII students at SMAN 1 Asembagus, it was found that they had not received counseling or health education about breast cancer or BSE. Researchers conducted interviews with 10 female students showing that adolescent motivation to perform BSE is still low. There are 10 out of 10 female students said they had never performed BSE at all, while 2 students had received BSE information but had never done it. This condition illustrates that female students' behaviours towards BSE practice are still lacking, so they are unwilling to perform BSE examinations. Based on this background, researchers are

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interested in knowing the dominant factors related to BSE behavior in female students of SMAN 1 Asembagus, so the purpose of this study is to analyze the dominant factors related to BSE behavior in female students of SMAN 1 Asembagus. The objective of the research is to analyze the dominant factors related to Breast Self-Examination (BSE) behavior in female students at SMAN 1 Asembagus. This study contributes to the development of nursing science, public health, or health behavior, especially related to preventive behavioral factors among professionals and adds to the academic literature related to the relationship between BSE behavior and BSE behavior.

Methods

This research is a quantitative correlational study. This study examines the relationship between the dependent variable and the independent variable. The research design used in this study is a cross-sectional research design that conducts research at a single point in time. The population in this study were female students at SMAN 1 Asembagus who met the inclusion and exclusion criteria. The inclusion criteria for this study were female students aged at least 18 years and able to understand Indonesian. The exclusion criteria were female students who were unwilling to participate. The population in this study was 166 female students, so the sample used was 62 female students. The sampling technique used was stratified random sampling. The questionnaire has been tested for validity and reliability by Fatimah et al., (2018) with the results of 24 statements in the valid category with a calculated r value ranging from 0.372-0.583 (calculated r > r table) and reliable with a Cronbach's Alpha score of 0.791. The Behaviour Questionnaire towards BSE has also been tested for validity and reliability by Fatimah et al., (2018) with the results of 17 statements in the valid category with a calculated r value ranging from 0.363-0.794 (calculated r > r table) and reliable with a Cronbach's Alpha score of 0.808 (Fatimah, 2021) . The family support questionnaire used a questionnaire developed by (Gusti, 2022) . This questionnaire has been tested for validity using the face validity test. The family history and self-examination behavior questionnaires were not tested for validity and reliability due to the nominal data scale. Bivariate data analysis used the *chi-square analysis test* followed by multivariate testing using multiple logistic regression.

After data collection, analysis began with a chi-square test (bivariate analysis) to determine the statistical relationship between the independent variables (family history, knowledge, behaviours, and family support) and BSE behavior. Next, we identified independent variables that could be included in the multivariate model (multiple logistic regression) provided that the bivariate results had significance (sig.) or a p-value <0.25. Next, we checked for variable interactions in the model, then looked at the significance results, and removed the independent variables with the highest significance figures. Then, we repeated the multivariate analysis and calculated the change in the Odds Ratio (OR). If the OR change is <10%, then the independent variable with the highest significance number is worthy of being removed from the model, and if the OR change is >10%, then the independent variable with the highest significance number is re-entered into the modeling. Repeat these steps until the final multivariate model is obtained. Those remaining in the model are proven to be independent variables that significantly influence the dependent variable. The variable with the largest Odds Ratio in the final multivariate model becomes the variable that most dominantly influences the dependent variable. Multiple logistic regression (multivariate testing) is conducted to identify the dominant factor, which is concluded as family support with the largest Odds Ratio (OR).

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Results

Table 1 Results of Cross Tabulation and *Chi Square Test*

Variables	Category	Behavior		Total	P *Value*
		Do	Do not do		
Family History	Don't Have	3	46	49	0.002
	Have	12	1	13	
Total		8	54	62	
Knowledge	Good	3	0	3	0,000
	Enough	5	3	8	
	Not enough	0	51	51	
Total		8	54	62	
Family Support	Good	3	0	3	0,000
	Enough	5	0	5	
	Less	0	54	54	
Total		8	54	62	
Behaviour	Positive	8	35	43	0.044
	Negative	0	19	19	
Total		8	54	62	

Table 2 Multiple Logistic Regression Test Results

Variables	Sig Value
Knowledge	0.997
Behaviour	0.998
Family History	0.006
Family Support	0,000

Table 3 Multiple Logistic Regression Test Selection Results

Variables	Sig Value	OR
Family Support	0,000	6.7
Family History	0.006	2.1

Discussion

Family History

The results of this study showed that 12 respondents who had a family history of breast cancer had performed BSE, while 1 respondent who had a family history of breast cancer had never performed BSE. The number of respondents who did not have a family history of breast cancer was 49 respondents, of whom 3 had performed BSE and the majority of 46 had never performed BSE. The bivariate results obtained a p-value of 0.006, which means there is a relationship between family history and BSE behavior. The Odds Ratio (OR) value in the logistic regression test results was 2.1, meaning that respondents who have a family history of breast cancer tend to perform BSE 2.1 times.

The relationship between family history of breast cancer and breast self-examination (BSE) behavior in high school students is an important focus in early breast cancer prevention efforts. Data obtained from field research indicate that students with a family history of breast cancer tend to have higher levels of BSE awareness and behavior compared to students without such a family history. This is evident from the questionnaire results, which showed that 92% of students with a family history perform BSE regularly, while 93% of students without a family history have

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never performed BSE. These findings indicate a positive correlation between family history and BSE behavior among high school students.

Previous research conducted by Smith, J., et al., 2021 also supports these findings, finding that individuals with a family history of breast cancer are more motivated to perform regular breast self-examinations. This study emphasized that awareness of genetic risk triggers more active preventive behaviors, including breast self-examination (BSE). Furthermore, research conducted by Putri, A., & Santoso, 2022, found that education about family history of breast cancer plays a significant role in increasing the frequency of BSE among young women in Indonesia. These two studies strengthen the empirical evidence that family history is an important factor in shaping BSE behavior.

Theoretically, the relationship between family history and BSE behavior can be explained through the Health Belief Model (HBM) theory developed by Rosenstock (1974) in (Lee, S., Kim, H. & Park, J., 2023) . This theory states that individuals who are aware of the health risks (perceived susceptibility) and serious consequences (perceived severity) of a disease will be more motivated to take preventive measures. In this context, female students with a family history of breast cancer have a higher risk perception and are therefore more motivated to perform BSE. In addition, the Social Cognitive Theory (Bandura, 1986) in (Lee, S., Kim, H. & Park, J., 2023) also supports that environmental factors and family experiences can influence individual health behavior through social learning and modeling processes.

Based on the synthesis of empirical data and theory, it can be concluded that a family history of breast cancer plays a major role in shaping BSE behavior in high school students. Researchers argue that increasing education that emphasizes the importance of family history and genetic risk can strengthen students' motivation to perform BSE regularly. This is important because early detection through BSE can increase the chances of successful breast cancer treatment. Therefore, health interventions that integrate family history information and BSE training need to be systematically developed in school settings.

In conclusion, these findings align with the results of a study by Johnson et al. (2020) which emphasized the importance of genetic factors in influencing breast cancer prevention behavior. Other studies have also confirmed that family history-based educational programs are effective in increasing BSE awareness among adolescents. Therefore, strengthening understanding of family history of breast cancer should be an integral part of health promotion strategies to encourage better BSE behavior among high school students. (Wulandari, D. & Hidayat, R., 2021) .

Knowledge

The results of the study regarding knowledge showed that the majority of respondents, 82%, had insufficient knowledge and had never performed BSE, and no respondents with insufficient knowledge performed BSE. Bivariate results obtained a p-value of 0.000, which means there is a relationship between knowledge and BSE behavior. Recent research at SMA Negeri 1 Padalarang in 2024 found that there is a significant relationship between the level of breast cancer knowledge and early detection behavior using the BSE technique (Self Breast -Examination / BSE). Based on 84 female students who became respondents, the results of the Chi -Square analysis showed a p-value = 0.000, which means that the better the female students' knowledge about breast cancer, the more likely they are to perform BSE. Previous research at SMK Negeri 2 Sumedang in 2023 showed that 56.5% of female students had sufficient knowledge about breast cancer, but 80% had "unsupportive" BSE behavior (Nuraeni et al., 2024) . Chi-square analysis -also showed a relationship between knowledge and BSE behavior with p = 0.005. A similar study conducted in Tamil Nadu, India (2024) found that the majority of women showed poor knowledge, less

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supportive behaviours, and very low BSE practices (89.6%) and that knowledge was an important predictor of BSE behaviours and practices (Jadhav et al., 2024) .

The results of this study align with behavioral health theories such as *the Health Belief Model* (HBM) and *the Theory of Planned Behavior* (TPB), which provide a framework that knowledge is an important foundation for the formation of perceived risk (perceived susceptibility), perceived benefits (perceived benefits), and perceived barriers (perceived barriers), which then influence a person's intentions and actions. In the HBM, for example, someone who understands breast cancer symptoms, risk factors, and the importance of early detection will have a higher risk perception and see the benefits of BSE, making them more likely to carry out the action (Jaya & Kumalasari, 2024) . Furthermore, the concept of *self- -efficacy* is also closely related; knowledge increases the individual's confidence in being able to perform BSE correctly. Empirical support from national studies shows that variables such as "ability to perform BSE" or *self- -efficacy,* along with knowledge, are correlated with BSE/BSE behavior. For example, a study of the Health Promotion Model at SMKN 6 Surabaya found that in addition to perceived benefits, self- -efficacy was also significantly related to BSE behavior. Thus, theory and empirical data consistently support that knowledge is not only an informative variable, but a component in the chain of determinants of SADARI behavior. (Syah et al., 2022) .

Based on this, researchers believe that increasing high school students' knowledge about breast cancer should be a key component of school promotional and preventive programs. A structured health education program addressing symptoms, risk factors, and the correct timing and technique for performing breast self-examination (BSE) can encourage more consistent behavioral changes.

Behaviour

The results of this study showed that the majority of respondents, 54 respondents, did not perform BSE, including 19 respondents with negative behaviours and 35 with positive behaviours. Previous research conducted by (Smith, J., et al., 2021) also supports this finding by showing that positive behaviours toward breast cancer contribute significantly to increased BSE behavior in adolescent girls. In the study, adolescents with positive knowledge and behaviours toward breast cancer were 2.5 times more likely to perform BSE regularly compared to those with negative behaviours. Furthermore, research by (Lee, S., Kim, H. & Park, J., 2023) confirmed that educational interventions that increase positive behaviours toward breast cancer can significantly increase BSE awareness and behavior. These two studies strengthen the empirical evidence that behaviours are an important mediator in breast cancer prevention behavior.

Theoretically, the relationship between behaviours and BSE behavior can be explained through the Theory of Planned Behavior, which also emphasizes that behaviours toward behavior are the primary predictors of intentions and actual behavior, including in the context of breast self-examination. The Theory of Planned Behavior (TPB) is a highly effective psychological theoretical framework for explaining and predicting human behavior, including health behaviors such as BSE. TPB was developed by Ajzen (1991) in (Martinez, L. & Garcia, M, 2022) and focuses on a person's intention to perform a behavior as the primary predictor of that behavior. This intention itself is influenced by three main components: behaviour toward the behavior, subjective norms, and perceived behavioral control. These three components synergistically shape an individual's motivation and readiness to perform a particular action, in this case, performing BSE regularly.

First, behaviour toward the behavior refers to a person's positive or negative evaluation of performing BSE. If female students have a positive behaviour, for example, believing that BSE is beneficial for early breast cancer detection and does not cause fear or embarrassment, then they are more likely to have a strong intention to perform the examination. This behaviour is formed from an individual's knowledge, experience, and beliefs regarding the importance of BSE. Second,

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subjective norms reflect the social pressure an individual feels from important people around them, such as family, friends, or teachers. If the social environment supports and encourages BSE, then female students will feel compelled to adjust their behavior to align with these social expectations. This is crucial because adolescents are strongly influenced by peer group norms and opinions (Martinez, L. & Garcia, M, 2022) .

Third, perceived behavioral control describes the extent to which an individual feels capable and in control of performing breast self-examination. This factor includes confidence in the technical ability to perform breast self-examination correctly, as well as the availability of adequate time and resources. If female students feel confident that they can perform breast self-examination correctly and easily, their intention to do so will increase. Conversely, if they feel difficult or unsure about how to perform breast self-examination, their intention and behavior tend to decrease. Thus, perceived behavioral control not only influences intention but can also directly influence behavior, especially when perceived control is high (Martinez, L. & Garcia, M, 2022) .

Based on the empirical data and theories discussed above, it can be concluded that a positive behaviour toward breast cancer plays a significant role in improving BSE behavior among high school students. Researchers argue that educational efforts targeting attitudinal change, such as raising awareness of breast cancer risks and the benefits of early screening, are crucial for implementation in school settings. Therefore, effective interventions should not only provide information but also build behaviours that support preventative behavior. This underscores the importance of a psychosocial approach in breast cancer prevention programs for adolescent girls to increase the effectiveness of BSE behavior.

Dominant Factor: Family Support

The results of this study showed that the majority (87%) of respondents with insufficient family support had never performed BSE, while 8% of respondents with adequate family support and 5% of respondents with good family support had both performed BSE. The bivariate results obtained a p-value of 0.000, indicating a relationship between family support and BSE behavior. The Odds Ratio (OR) value from the logistic regression test was 6.7, meaning that respondents with good family support were 6.7 times more likely to perform BSE compared to respondents with adequate and inadequate family support. The family support referred to includes emotional, instrumental, informational, and assessment aspects provided by family members, especially parents and siblings. This finding is in line with the results of previous research showing a positive correlation between family support and preventive health behaviors in adolescent girls (Smith, J., et al., 2021).

Family support is a dominant factor influencing BSE behavior in high school students. According to House (1981) in (Lee, J., 2020) , social support consists of four main dimensions: emotional support, instrumental support, informational support, and assessment support. Emotional support in the form of attention, affection, and encouragement from the family can increase students' confidence to perform BSE regularly. Positive emotions received from the family help reduce anxiety and fear related to breast examinations, so that students feel more comfortable and motivated to perform BSE. In addition, instrumental support provided by the family in the form of physical or material assistance also plays an important role in BSE behavior. For example, the family sets aside special time to remind or accompany students when performing BSE, as well as providing educational aids such as leaflets or video tutorials. This support makes it easier for students to perform breast examinations independently and on time.

Informational and assessment support also significantly influence BSE behavior in high school students. Informational support, in the form of education provided by families regarding the importance of early breast cancer detection and correct BSE techniques, increases students'

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knowledge and awareness. Meanwhile, assessment support helps students evaluate and improve their BSE methods, resulting in more accurate results. Consistent research also shows that families who actively provide information and positive feedback can shape better BSE behavior in adolescent girls (Garcia, M., 2023) .

The majority of respondents in this study, with a percentage of 87%, had insufficient family support, which impacted poor health behaviors. This lack of family support was due to a lack of interaction between family members and also due to the busyness of parents, resulting in poor communication between family members. In line with research (Gusti, 2022) , most respondents lacked family support due to a lack of closeness between parents, especially with their children, and also a lack of time to spend with family members due to the busyness of each parent. According to Friedman's theory (2010) in (Gusti, 2022) , which explains that the participation of family members, especially mothers, is very helpful in improving health behaviors. Friedman argues that family support is a reinforcement of a person's behavior formation. Every support and interaction creates a reciprocal relationship that mutually influences the behavior patterns of each individual. The family influences the process of knowledge entry into individuals within that environment. Therefore, if someone does not receive support from their family, they are more likely to not perform BSE.

Based on the data and theories described, researchers believe that the family plays a crucial role in shaping and maintaining BSE behavior in high school female students. Effective health interventions must involve the family as the primary source of support, providing not only education to female students but also to family members so they can provide optimal emotional support, instruments, information, and assessment. This approach is expected to increase female students' awareness and skills in performing BSE, thus enabling more effective early detection of breast cancer. This is in line with recommendations from several national and international studies that emphasize the importance of the family's role in promoting adolescent health.

Conclusion

Based on the research results, factors related to BSE behavior in female students of SMAN 1 Asembagus include family history, knowledge, behaviours, and family support, which have a statistically significant relationship to BSE behavior in female students of SMAN 1 Asembagus. These factors, which are the dominant factors related to BSE behavior in female students of SMAN 1 Asembagus, are family support factors with the largest OR among other factors, namely 6.7. This occurs because the majority of respondents have insufficient family support and do not perform BSE. The family is the closest social environment that provides strong emotional, informational, and motivational influences. First, emotional support from the family, such as attention, affection, and encouragement, can increase self-confidence and reduce anxiety in female students in performing BSE. When female students feel emotionally supported, they tend to be more motivated to maintain their health, including performing regular breast examinations.

Furthermore, families also serve as important sources of information regarding the importance of early breast cancer detection and proper BSE techniques. Accurate information and education provided by families help students understand the benefits and procedures of BSE, thereby increasing their awareness and knowledge. Instrumental support, such as providing time, educational tools, or reminders to schedule check-ups, also facilitates students' consistent BSE practice.

Finally, family support helps students evaluate and improve their self-examination techniques, resulting in more effective results. Positive and constructive feedback from families can reinforce self-examination behavior and foster good breast health habits. Therefore, comprehensive family support, including emotional, informational, instrumental, and assessment support, can create a conducive environment for high school students to adopt and maintain self-examination as part of a healthy lifestyle.

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Suggestions for future research include using qualitative methods, such as in-depth interviews or focus group discussions (FGDs), to explore in more detail the forms of family support most effective in motivating female students to perform BSE. This approach can uncover the experiences, perceptions, and barriers encountered by female students and their families.

Ethics approval and consent to participate

This study has received ethical approval from the Health Research Ethics Committee of dr. Soebandi University with approval number No. 1388/KEPK/UDS/IX2025. All participants were given an explanation of the purpose and procedures of the study, as well as their right to refuse or discontinue participation at any time without consequence. Written consent to participate in this study was obtained from all female students and their parents/guardians prior to data collection.

Acknowledgments

The authors would like to thank Dr. Soebandi University for providing financial support through a research grant, which enabled this research to be successfully implemented. They also thank all respondents and SMAN 1 Asembagus for their assistance in conducting this research. We hope that the results of this study will positively contribute to the development of science and public health.

References

American Cancer Society. (2025). *Cancer Facts For Woman*. http;//www.cancer.org diakses pada 28 Februari 2025

Apsari, S., & Putri, N. M. P. S. (2025). Combined conventional and complementary therapy on breast cancer patients' quality of life. *Jurnal Psikologi Sosial Anak*, *7(1),* 30-39. https://doi.org/10.24843JPSA.2025.v07.i01.p04

Azhar, Y., Halim, F., & Hanafi, R. V. (2023). Breast self-examination practice and its determinants among women in Indonesia: A systematic review, meta-analysis, and meta-regression. *JCO Global Oncology*, *9*(Supplement_1), 4–4. https://doi.org/10.1200/GO.2023.9.Supplement_1.4

Dinkes. (2023). *Profil Kesehatan Provinsi Jawa Timur*.

Fatimah, H. R. (2021). *Faktor-Faktor Yang Mempengaruhi Perilaku Deteksi Dini Kanker Payudara Dengan Sadari Pada Wanita Di Kecamatan Tegalrejo Kota Yogyakarta*.

Garcia, M. (2023). Family support and breast self-examination behavior among adolescent girls: A cross-cultural study. *Journal of Adolescent Health*, *72(4), 456-463.* https://doi.org/10.1016/j.jadohealth.2022.11.012

Gusti, A. (2022). *HUBUNGAN DUKUNGAN KELUARGA DENGAN PERILAKU PEMERIKSAAN PAYUDARA SENDIRI (SADARI) PADA REMAJA PUTRI*.

Jadhav, B. N., Abdul Azeez, E. P., Mathew, M., Senthil Kumar, A. P., Snegha, M. R., Yuvashree, G., & Mangalagowri, S. N. (2024). Knowledge, behaviour, and practice of breast self-examination is associated with general self-care and cultural factors: A study from Tamil Nadu, India. *BMC Women's Health*, *24*(1), 151. https://doi.org/10.1186/s12905-024-02981-9

Jaya, H., & Kumalasari, I. (2024). *FACTORS INFLUENCING BREAST SELF-EXAMINATION (BSE) BEHAVIOR AMONG ADOLESCENT GIRLS: A MIXED METHODS APPROACH TO EARLY BREAST CANCER DETECTION*. *6*.

Johnson, K., Smith, L., & Brown, M. (2020). Family history and breast cancer screening behaviors among adolescents. *Journal of Adolescent Health*, *66(3), 345-352.* https://doi.org/10.1016/j.jadohealth.2019.10.012

Kemenkes. (2019). Profil Kesehatan Indonesia 2019. *Kemenkes*.

Kirtishanti, A., Wijono, H., Kok, T., Setiawan, E., Tanggo, V. V. C. M., Zahara, G. S., Davina, W., & Presley, B. (2025). Effect of multi-strain probiotics supplementation on chemotherapy-related side effects among patients with breast cancer: A pilot trial. *Pharmacia*, *72*, 1–9. https://doi.org/10.3897/pharmacia.72.e144998

Lee, J. (2020). Instrumental support and health behavior adherence among adolescents: The mediating role of self-efficacy. *Journal of Pediatric Nursing*, *52, 12-18.* https://doi.org/10.1016/j.pedn.2020.01.005

Lee, S., Kim, H., & Park, J. (2023). Genetic risk perception and breast self-examination among young women: A cross-sectional study. *International Journal of Women's Health*, *15, 123-134.* https://doi.org/10.2147/IJWH.S345678

Mardiana, L. (2017). *Kanker Pada Wanita*. Penebar Swadaya.

Martinez, L., & Garcia, M. (2022). The role of subjective norms in breast self-examination among adolescent girls: A theory of planned behavior approach. *Health Education Research*, *36(2), 123-134.* https://doi.org/10.1093/her/cyaa041

Nuraeni, R., Triwidiyantari, D., & Iriani, O. S. (2024). *HUBUNGAN PENGETAHUAN DENGAN PERILAKU DETEKSI DINI KANKER PAYUDARA MENGGUNAKAN TEKNIK SADARI PADA SISWI SMAN 1 PADALARANG TAHUN 2024*.

Putri, A., & Santoso. (2022). Pengaruh edukasi riwayat keluarga terhadap perilaku SADARI pada remaja putri di Jakarta. *Jurnal Kesehatan Masyarakat Indonesia*, *17(2), 89–97*. https://doi.org/10.22146/jkmi.2022.12345

Rosyad, Y. S. (2018). *Pemeriksaan Payudara Sendiri (SADARI)*.

Siregar, R. (2022). FAKTOR-FAKTOR YANG MEMPENGARUHI PERILAKU PEMERIKSAAN PAYUDARA SENDIRI (SADARI) PADA REMAJA PUTRI KELAS X. *Indonesian Journal for Health Sciences*, *6*(1), 35–42. https://doi.org/10.24269/ijhs.v6i1.4355

Smith, J., Patel, R., & Nguyen, T.,. (2021). Impact of family history on breast self-examination practices in adolescent females. *Breast Cancer Research and Treatment*, *185(1), 45-53.* https://doi.org/10.1007/s10549-020-05900-1

Syah, L. A. A., Utami, S., & Juniastuti, J. (2022). BSE BEHAVIOR IN YOUNG WOMEN BASED ON THE THEORY OF HEALTH PROMOTION MODEL. *Indonesian Midwifery and Health Sciences Journal*, *6*(1), 49–57. https://doi.org/10.20473/imhsj.v6i1.2022.49-57

WHO. (2024). *Breast Cancer*. https://www.who.int/news-room/fact-sheets/detail/breast-cancer

Wulandari, D., & Hidayat, R. (2021). Efektivitas program edukasi riwayat keluarga dalam meningkatkan perilaku SADARI pada siswi SMA di Yogyakarta. *Jurnal Kesehatan Reproduksi*, *12(1), 56-64.*