

# Factors associated with breast self-examination among women of reproductive age in Lampung-Indonesia

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## Factors associated with breast self-examination among women of reproductive age in Lampung-Indonesia

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### Abstract

**Background:** Breast cancer in Indonesia ranks first with 68,858 cancer cases and the second cause of cancer-related deaths with 22,430. In 2020 in Lampung Province there were 980 cases of breast lumps and 246 cases of breast cancer while in North Lampung district there were 26 cases of breast lumps and 7 cases of suspected breast cancer. The Abung Kunang Health Center had 3 cases of lumps in the breast and 2 cases of suspected breast cancer. Cancer prevention is a priority through Breast Self-Examination (BSE).

**Purpose:** To determine the factors associated with breast self-examination (BSE) in women of productive age (WCA) at the Abung Kunang Community Health Center, North Lampung Regency in 2023.

**Method:** Quantitative with cross sectional design. The population in this study were women of childbearing age aged 15-49 years who were at the Abung Kunang Community Health Center in North Lampung Regency in 2022 with a total of 381 samples. The sample technique used is multi-stage random sampling. Data analysis in this study used univariate, bivariate (chi-square), and multivariate (multiple logistic regression).

**Results:** Shows that there is a relationship between knowledge (p value 0.000 and OR 3.147), attitude (p value 0.004 OR 1.900), education (p value 0.015 and OR 1.736), support from health workers (p value 0.014 and OR 1.708) and exposure to information media (p value 0.015 and OR 3.054) and there is no relationship between family support and BSE implementation in women of childbearing age. The most related factor is knowledge with (p value 0.000 and OR 2.567). It is hoped that health workers can provide implementation demonstrations and carry out community empowerment such as IT (information and technology) training.

**Conclusion:** Factors related to the implementation of breast self-examination (BSE) in dealing with the occurrence of breast cancer, namely knowledge, attitudes, education, family support, health workers, and exposure to information media from respondents. However, from these factors the most related at the Abung Kunang Health Center in North Lampung Regency in 2023 is knowledge with OR 2.567.

**Keywords:** Breast Cancer; Breast Self Examination (BSE); Women of Productive Age

### INTRODUCTION

Breast cancer is a malignant tumor in the form of breast cells that grow and develop uncontrollably so that it can spread between tissues or organs near the breast or to other parts of the body (Handayani, Suharmiati, & Ayuningtyas, 2012; Kumar, Nikhil, & Sumangali, 2017; Yadav, & Mohite, 2020). In 2020, there are 2.3 million women diagnosed with breast cancer with deaths reaching 685,000 cases. By the end of 2020, there were 7.8 million women diagnosed with breast cancer (World Health Organization, 2020).

In Indonesia, breast cancer ranks first in the number of cancer cases and is the second cause of cancer-related death. In Lampung Province until 2020 there are 980 cases of lumps in the breast and 246 cases of breast cancer. Whereas in 2021 there were 553 cases of tumors or lumps in the breast and 90 cases of suspected breast cancer (Lampung Provincial Health Office, 2021). According to Globocan data from the International Agency for Research on Cancer (IARC) in Indonesia, the number of new breast cancer cases increased to 68,858 cases (16.6%) in 2020 from 396,914 new cancer cases in Indonesia. Meanwhile, the number

of deaths increased to more than 22,430 cases (9.6%) of a total of 234,511 deaths from cancer in Indonesia (*World Health Organization, 2020*).

Cancer prevention is a priority in the prevention and early detection of breast cancer through clinical breast examination and breast self-examination (BSE). BSE is one of the efforts to prevent breast cancer which is one way of early detection that is carried out regularly by the women themselves. The prevalence of women aged 30-50 years undergoing early detection of breast cancer in Indonesia in 2020 is 8.3%.

Awareness of the importance of understanding cancer is very important because early detection and understanding can identify early symptoms of this disease, thus enabling early cancer treatment because when detected early, treatment becomes effective and efficient, so it is not too dangerous and can even be treated completely. This allows early detection of breast cancer and is very simple to do at home. This procedure is very important because almost 85% of breast lumps are found (Herman & Hinga, 2019; Etzioni, Urban, Ramsey, McIntosh, Schwarz, Reid, & Hartwell, 2003).

According to Lawrence Green's theory, behavior is determined by 3 main factors, namely predisposing factors, enabling factors and reinforcing factors. Predisposing factors are factors that encourage the occurrence of practices such as knowledge, attitudes, cultural values, perceptions. Enabling factors are factors that enable certain practices to be carried out or incentives to be carried out. Enabling factors include access to health services, availability and convenience of health services in terms of distance, cost, and sources of information, as well as the existence of regulations and community commitment to support these practices. Reinforcing factors are factors that enhance (sometimes even weaken) exercise performance. Reinforcement is positive or vice versa (Notoatmodjo, 2012)

Other studies also show that 62.6% of respondents with good behavior. Bivariate analysis that the variables of education (p-value = 0.000), knowledge (p-value = 0.000), attitude (p-value = 0.000), family support (p-value = 0.008,) and exposure to information (p-value = 0.000 ) has a significant relationship with BSE behavior in women of childbearing age (Sundari, Utami & Ariestanti, 2022).

There is a significant relationship between knowledge, the role of health workers and sources of information with BSE in women of childbearing age in the Working Area of the Anggut Atas Health Center, Bengkulu City. This examination is very important because if cancer is found early with a small tumor size of less than 1 cm and treated quickly and precisely. Hope to recover almost 100% (Herdiani & Rosiana, 2020).

## RESEARCH METHOD

Quantitative research is based on the philosophy of positivism with a research design using a cross sectional approach. Multistage random sampling data collection technique. The population in this study were WUS aged 15-49 years who were at the Abung Kunang Health Center in North Lampung Regency with a total of 381 samples from January to March 2023.

The inclusion criteria were women of childbearing age aged 15-49 years, willing to be respondents, signed consent forms, able to read and write. While the exclusion criteria were women who were menstruating, women who had mastitis or swelling of the breasts, and incomplete questionnaire answers. The dependent variable in this study was BSE, while the independent variables were knowledge, attitudes, family support, education, support from health workers and exposure to information media. The dependent variable is categorized into two, namely Yes if you do and No if you don't do BSE. While the independent variable of the knowledge category is good if the answer is correct  $\geq 50\%$  and bad if the answer is correct  $< 50\%$ . Attitudes are positive if the score  $\geq$  mean (52) and negative if  $<$  mean (52). Family support is supported if  $\geq$  mean (11) and not supported if  $<$  mean (11). Education is high if you graduate from high school or college and low education if you don't go to school, graduate from elementary school, and graduate from junior high school. Support for health workers is supportive if the score is  $\geq$  mean (12) and not supported if the score is  $<$  mean (12). Being exposed to information media means having been exposed if you have received information and not being exposed if you have never received information.

The instrument in this study was a standardized questionnaire sheet, tested for validity and reliability. How to measure using a questionnaire, namely the questionnaire is filled directly by the respondent by filling out the appropriate statement. The analysis technique uses univariate, bivariate (chi-square), and multivariate (multiple logit regression).

This research has been declared ethically feasible by the health research ethics commission at the University of Malahayati with the number: 3074/EC/KEP-UNMAL/I/2023.

## RESEARCH RESULTS

Table 1. Frequency Distribution of BSE Implementation (N=381)

Variable	Results
<b>BSE Implementation (n/%)</b>	
Yes	176/46,2
No	205/50,8
<b>Knowledge (n/%)</b>	
Good	227/59,6
Bad	154/40,6
<b>Attitude (n/%)</b>	
Positif	231/60,6
Negatif	150/39,4
<b>Family Support (n/%)</b>	
Support	232/60,9
Unsupport	149/39,1
<b>Education (n/%)</b>	
High	245/64,3
Low	136/35,7
<b>Health Workers Support (n/%)</b>	
Support	218/57,2
Unsupport	163/42,8
<b>Information Media Exposure (n/%)</b>	
Once	244/64,0
Never	137/36,0

It is known that 205 (53.85) respondents did not implement, 227 (59.6%) respondents had good knowledge, 231 (60.6%) respondents had a positive attitude, 245 (64.3%) respondents had higher education, 232 (60.95) respondents received family support, 218 (57.2%) said there was support from health workers, and 244 (64%) respondents said they had been exposed to information media. The data shows that although knowledge, attitudes, family support, education, support from health workers, and exposure to information media have good results, in fact many do not. This is because the people in the Abung Kunang Health Center area are lazy to carry out self-examinations and are also afraid that if a lump is discovered in their breast it will cause an increased feeling of anxiety.

**Table 2. Bivariate Analysis of BSE Implementation (N=381)**

Variable	BSE Implementation		p value	OR (CI 95%)	Info
	Yes (n=176)	No (n=205)			
<b>Knowledge (n/%)</b>					
Good	130/73,6	97/47,3	0,000	3,147 (2,039 – 4,856)	Candidate
Bad	46/26,4	108/52,7			
<b>Attitude (n/%)</b>					
Positif	121/68,7	110/53,7	0,004	1,900 (1,248 – 2,894)	Candidate
Negatif	55/31,5	95/46,3			
<b>Family Support (n/%)</b>					
Support	108/61,4	124/60,5	0,945	-	Not a Candidate
Not support	68/38,6	81/39,6			
<b>Education (n/%)</b>					
High	125/71,0	120/58,5	0,015	1,736 (1,132 – 2,664)	Candidate
Low	51/29,0	85/41,5			

<b>Health Workers Support (n/%)</b>					
Support	113/64,2	105/51,2	0,014	1,708 (1,131 – 2,580)	Candidate
Not support	63/35,8	100/48,8			
<b>Information Media Exposure (n/%)</b>					
Once	136/77,3	108/52,7	0,015	3,054 (1,954 – 4,773)	Candidate
Never	40/22,7	97/47,3			

Based on 176 respondents who had good knowledge, 130 (73.6%) respondents and 46 (26.4%) respondents had bad knowledge, while from 205 respondents who had good knowledge, 97 (47.3%) respondents and 108 (52.7%) of respondents who did not. The p-value of 0.000 <0.05 means that there is a relationship between knowledge and implementation. The OR value of 3.147 means that respondents who have good knowledge have the opportunity to do it 3.147 times compared to respondents who have poor knowledge. Furthermore, 176 respondents with a positive attitude obtained 121 (68.7%) respondents and 55 (31.3%) respondents with a negative attitude did, while of the 205 respondents with a positive attitude obtained 110 (53.7%) and 95 (46.3%) do not do. The p value of 0.004 <0.05 means that there is a relationship between attitudes towards the implementation of BSE. The value of OR = 1.900 means that respondents who have a positive attitude have the opportunity 1.9 times to do it compared to respondents who have a negative attitude.

Of the 176 respondents with family support, there were 108 (61.4%) respondents and 68 (38.6%) respondents who did not receive family support, while out of 205 respondents who received family support, 124 (60.5%) respondents and 81 (39.5%) of respondents who did not receive family support did not. The p-value of 0.945 > 0.05 means that there is no relationship between family support and BSE implementation. Furthermore, 176 respondents with higher education obtained 125 (71.0%) respondents and 51 (29.0%) respondents with low education did, of 205 respondents with higher education obtained 120 (58.5%) respondents and 85 (41.5%) respondents with low education do not do. The p value of 0.015 <0.05 means that there is a relationship between education and BSE implementation. The result of OR = 1.736 means that respondents who have higher education have the opportunity to do it 1.736 times compared to respondents who have low education.

A total of 176 respondents with the support of health personnel obtained 113 (64.2%) respondents and 63 (35.8%) did not receive support from health workers, out of 205 respondents who received support from health personnel, 105 (51.2%) respondents and 100 (48.8%) of respondents who did not receive support from health workers did not perform BSE. The p-value of 0.014 <0.05 means that there is a relationship between the support of health workers. The result OR=1.708 means that respondents who get support from health workers have 1.708 times the chance to do so compared to respondents who do not get support from health workers.

Furthermore, out of 176 respondents who had been exposed to information media, 136 (77.3%) of respondents and 40 (22.7%) of respondents had never been exposed to information media did, out of 205 respondents who had been exposed to information media, 108 (52.7%) respondents and 97 (47.3%) respondents who had never been exposed to information media did not do BSE. a p value of 0.015 <0.05 means that there is a relationship between exposure to information media. The result of OR = 3.054 means that respondents who are exposed to media information have the opportunity to do so 3.054 times compared to respondents who are not exposed to media information.

**Table 3. Multivariate Analysis of Factors Associated with BSE Implementation**

Variable	P-value	OR crude	OR adjusted	OR Change	95% CI
<b>Mode 1</b>					
Knowledge	0,000	2,690	-	-	1,683-4,301
Attitude	0,238	1,325	-	-	0,831-2,113
Family Support	0,086	0,644	-	-	0,390-1,064
Education	0,032	1,743	-	-	1,049-2,896
Health Workers Support	0,099	1,489	-	-	0,928-2,390
Information Media Exposure	0,010	1,926	-	-	1,172-3,164
<b>Mode 2</b>					
Knowledge	0,000	2,690	2,723	1,2	-
Family Support	0,078	0,644	0,638	-0,9	-



Education	0,015	1,743	1,854	6,4	-
Health Workers Support	0,091	1,489	1,501	0,8	-
Information Media Exposure	0,004	1,926	2,033	5,5	-
<b>Mode 3</b>					
Knowledge	0,000	2,690	2,753	2,3	-
Family Support	0,184	0,644	0,724	-12,4	-
Education	0,028	1,743	1,731	-0,7	-
Information Media Exposure	0,001	1,926	2,045	6,2	-
<b>Mode 4</b>					
Knowledge	0,000	2,690	2,594	-3,6	-
Education	0,062	1,743	1,541	-11,5	-
Information Media Exposure	0,001	1,926	2,072	7,6	-
<b>Mode 5</b>					
Knowledge	0,000	2,690	2,567	-4,6	-
Information Media Exposure	0,000	1,926	2,034	5,6	-
<b>Mode 6</b>					
Knowledge	0,000	2,567	-	-	1,636 – 4,029
Information Media Exposure	0,000	2,034	-	-	1,528 – 3,877

Based on the results of the first model, it was found that three variables had a p-value of more than 0.05, namely attitude, family support and health worker support. Model 2 obtained two variables that had a p-value of more than 0.05, namely family support and support from health workers. Model 3 only had one variable that had a p-value of more than 0.05, namely the variable family support. Model 4 and model 5 according to confounding, there is no change in the OR value of more than 10%. According to model 5, there is no change in the OR value of more than 10%, the next step is to test the interaction.

The final model is based on the confounding test, the final model is obtained by multivariate analysis of factors related to the implementation of BSE. Of the 6 independent variables analyzed, the remaining two variables are related, namely knowledge and exposure to information media. The most related variable is knowledge after being controlled by the variable exposed to information media because it has the highest OR value, namely 2.567, meaning that knowledge at risk is 2.567 times most closely related to the difference between good and bad respondents' knowledge, from 1.636 to 4.029.

## DISCUSSION

The results of this study indicate that out of 381 respondents, 176 (46.2%) respondents did and 205 (53.8%) respondents did not. The number of respondents did not carry out because they did not know how to do it, felt they had no symptoms of breast cancer and were worried about detecting their own breast cancer. Breast self-examination, which aims to determine the presence or absence of breast cancer in women, is carried out using a mirror and is performed by women aged 20 years and over. The main indication is to detect breast cancer by observing the breast from the front, left and right sides, whether there are lumps, changes in skin color, noisy nipples and discharge or pus and blood (Olfah, Mendri & Badi'ah, 2017).

There are several factors that influence behavior, namely predisposing factors such as knowledge, attitudes, beliefs, values and traditions. In addition, there are other factors such as health facilities and resources, exposure to information and skills. As well as reinforcing factors such as family, peers and health workers (Pradnyandari, Sanjiwani, & Astuti 2022). Another study showed that there were 87 respondents (58%) who did not, and 63 respondents (42%) who did. According to researchers, the behavior of women of childbearing age in carrying out BSE is very important for early detection of breast cancer, but there are still many women of childbearing age who do not know the benefits due to lack of knowledge, attitudes, education, family support, mass media information and support from health workers. to practice (Siregar, 2022).

The results showed that there were variations in individual knowledge, this could be because individuals getting knowledge depended on the ability of one's five senses, so that the better one's ability to obtain information. Other research also showed that 62 respondents (65.3%) had good knowledge of WUS and 33 respondents (34.7%) had less knowledge. Judging from the results of the questionnaire analysis, it was found that the respondents had the highest knowledge regarding the definition of breast cancer with a total of 299

(78.5%) and the lowest respondent's knowledge regarding the purpose and examination section, namely 221 (58.1) (Afifah, Azzahroh, & Suciawati, 2022 ).

Attitude is an evaluation or feeling reaction. A person's attitude towards an object is a feeling of support or partiality or a feeling of not supporting or not taking sides. Attitudes can be divided into two, namely positive traits and negative traits (Wawan & Dewi, 2010). Based on the results of this study indicate that the attitude of respondents who strongly agree that early detection of breast cancer should be done in married women is as much as 72.4%. Meanwhile, the attitude of respondents who strongly disagreed was the highest, namely the earlier cancer was found, the more likely it was that cancer could be cured, namely 7.3%. So it can be assumed that the attitude of the respondents is still in the negative category. This shows that there are still many respondents who think that early detection of breast cancer is carried out only when they are married.

Family support is a process that occurs throughout life, the type and nature of support differ in various stages of the life cycle (Sni, Widowati, & Wahidin, 2018). Family support can be in the form of internal and external social support. Family support is the attitude, action and acceptance of the family towards its members. Thus, family support enables the family to function with a variety of intelligence and intelligence. Family support can also improve family health and adaptation (Simbolon, 2017). The results of this study indicate that the highest family support is in statements about families taking the time to do BSE, namely 324 (85%) of respondents who answered "yes". While the lowest score was regarding the family informing a healthy lifestyle to avoid breast cancer, namely only 212 (55.6%) answered "yes".

Education can affect a person, including one's behavior towards lifestyle, especially in motivating attitudes to participate in development. Education is the main capital that supports one's knowledge. The higher the education, the better the knowledge possessed. Vice versa, the lower the education, the less good the knowledge possessed (Wawan & Dewi, 2010). Study of women aged  $\geq 18$  years in (7) and Khasmir, India; stated that the relationship between education level and breast cancer awareness (BCA) was much stronger than family history of breast cancer and BCA. Therefore, public education for illiterate women can reduce the proportion of women in low-income countries who suffer from advanced breast cancer (Malik, Vera, Dayal, Choudhari, Mudaliar, Noovao Hill, & Gunnarsson, 2020).

Indonesia's National Strategy for Breast Cancer Management includes 3 (three) pillars, namely health promotion, early detection, and case management. These three pillars are an effective method for cancer prevention. Health promotion and education can increase public knowledge about breast cancer, early detection such as BSE can increase hope of recovery and increase life expectancy because cases can be detected early (Ministry of Health of the Republic of Indonesia, 2020). Law of the Republic of Indonesia No. 36 of 2014 concerning health workers, states that health workers have an important role in providing services to the community, especially in health centers. The role of health workers includes preventive and promotive efforts. The role of health workers is to increase knowledge, change behavior, and increase public awareness so that their quality of life can be better (Ministry of Health of the Republic of Indonesia, 2016). The results of the questionnaire analysis found that the highest score regarding the support of health workers, namely regarding health workers providing counseling about early detection of breast cancer, namely 378 (99.2%) and health workers providing instructions on BSE steps, namely 355 (93.2%) respondents who answered "yes". While the lowest score was regarding health workers demonstrating that only 149 (39.1%) respondents answered "yes". Health workers should give demonstrations in person so that women of childbearing age can better understand how to do it properly. This is because the support and motivation of health workers is one of the predisposing factors for health behavior.

Information is a motivation for women to increase their knowledge about the breast area. Exposure to this information is very important because it increases young women's knowledge about breast cancer and its dangers as well as ways to do early detection of breast cancer (Ajeng, Zuhrotunida, & Yunita 2018). Based on the results of this study, it was found that 181 (47.5%) received information about BSE from health center staff, 9 (2.4%) received information from health cadres, 51 (13.4%) received information from social media, 2 (0.5%) received information from television /radio, 0.3% get information from seminars/scientific discussions. According to researchers, information media is important to increase one's knowledge. The more media information obtained, the better the knowledge possessed.

The results showed that of the 5 independent variables analyzed, the remaining two variables were related, namely knowledge and exposure to information media. The most related variable is knowledge after being controlled by the variable exposed to information media, because it has the highest OR value of 2,567 meaning that knowledge at risk 2,567 times is most closely related to the implementation of BSE.

Behavior is influenced by knowledge which is a predisposing factor that can influence a person's behavior. Behavior that is based on knowledge possessed by a person will last much longer than behavior that is not based

on knowledge. If someone has good knowledge, a positive response will arise (Erica & Azzahroh, 2022). However, if the knowledge is lacking, it will not cause a good response to BSE behavior (Notoatmodjo, 2012).

Knowledge can be summed up as information that is known by someone and occurs after sensing a particular object. Meanwhile breast self-examination is an early detection performed by a woman to find abnormalities in her breasts as early as possible. Knowledge of women of reproductive age about breast self-examination can be influenced by several things, one of which is the source of information. Sources of information can also be delivered by health workers or non-health workers but understand and know about the information conveyed, in this case is breast self-examination. Thus, the knowledge of women of childbearing age in breast self-examination includes the meaning, benefits, goals, techniques or methods and steps of breast self-examination.

According to researchers, high knowledge will be the basis of a person in shaping health behavior. Behavior based on knowledge will be more lasting than behavior that is not based on knowledge (Juwita, & Prabasari, 2018). Knowledge can be obtained from various sources such as health workers, the internet, or other media. Therefore, it is hoped that WUS will actively seek information about the benefits of health behaviors such as BSE so that they can add insight and knowledge that can lead to positive behavior (Fatimah et al, 2018).

## CONCLUSION

In the results of this study there are several factors that are closely related to the implementation of BSE in dealing with the occurrence of breast cancer. Among them knowledge, attitudes, education, family support, health workers, and exposure to media information from respondents. But of these factors the most related is knowledge with OR 2.567.

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