

Building Health Awareness: Analysis of the Relationship between Knowledge and Attitude with BSE Behavior in Public Health Science Students

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ABSTRACT

Purpose of the study: The purpose of this study was to determine the relationship between knowledge and attitudes with BSE behavior in students of the Public Health Study Program, Jambi University.

Methodology: This study used a descriptive analytic research design with a cross sectional approach. The sampling technique used multistage random sampling on 307 students of Public Health by filling in an online questionnaire through a Googleform. The research variables were knowledge, attitudes and BSE behavior which were analyzed using the Chi-square test.

Main Findings: Knowledge of female students in the good category is 73 people. Attitudes in the positive category are 52 people, and for BSE behavior in the good category are 68 people. There is no significant relationship between knowledge and BSE behavior, and there is a significant relationship between attitudes and BSE behavior.

Novelty/Originality of this study: The results of this research are expected to be useful as material for developing scientific knowledge and to add to the literature on breast cancer itself as well as a study in developing policies regarding the prevention of non-communicable diseases, especially breast cancer in female students.

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1. INTRODUCTION

Breast cancer is a malignant tumor formed by uncontrolled cell growth and development in the breast and spreads between tissues and organs around the breast or other parts of the body [1]-[3]. Breast cancer begins in the breast tissue, which contains the lobules and vessels that connect the lobules to the nipple [4]. Other parts of the breast consist of fat, connective tissue, and lymph [5], [6]. The breast is the first place where cancer develops in women [7]-[9].

Breast cancer is classified as a non-communicable disease and its cause is still unknown [10]-[12]. This disease is caused by damage to cells in breast tissue and changes in genetic characteristics. Breast cancer takes a long time to develop in the body, and has very diverse risk factors, namely genetic factors, namely a history of breast cancer in the family and environmental factors such as women, age, gene changes, race, age of first menstruation <12 years, age of menopause> 55 years, unmarried, no children, using hormonal contraception, obesity, stress and unhealthy lifestyle [13]-[15]. In addition to the above factors, there are other factors that

increase the risk of breast cancer, namely poor diet such as consumption of high-fat foods, red meat, processed meat, excess sugar, burnt foods.

Early symptoms of breast cancer are often not recognized or clearly felt by sufferers, causing the high death rate of breast cancer [16]-[18]. Death from breast cancer can be prevented early, if breast cancer is detected early, the life expectancy can reach 80% to 95% [19]. But it turns out that 70% of breast cancer patients visit a doctor when they are already in an advanced stage, which affects the patient's quality of life. Early detection in women is needed to prevent an increase in the incidence of breast cancer [20]-[22]. Early detection is an examination of the breast to determine whether there are abnormalities in the breast and is an effort to find cancer that can be cured, such as old cancer, small cancer, and cancer that can cause damage [23]-[25]. The target of this detection effort is those who are healthy, asymptomatic, and at high risk of getting cancer. Some of the available early detection methods include MRI (Magnetic Resonance Imaging), CBE (Clinical Breast Examination), BSE (Breast Self-Examination), Supporting Examinations such as Mammography or Breast Ultrasound [26]-[28]. Self-administered and easy preventive measures are BSE which aims to determine whether there are lumps in the breast, to recognize and understand the condition and significant changes that occur in the breast [29], [30].

Breast Self-Examination is a simple and very easy method for women to do independently. Breast self-examination aims to detect breast abnormalities as early as possible [31]-[33]. Breast Self-Examination examination has the advantage that women will be more sensitive if there are suspicious changes in their breasts and raise awareness to make further diagnoses [34], [35]. As one of the breast cancer prevention techniques, it is recommended to reduce the mortality and morbidity of breast cancer [36], [37]. Meanwhile, clinical breast examination mammogram need to be done to the hospital for treatment, require special equipment and expertise and are expensive.

There are various factors that influence BSE behavior, including knowledge and attitude. Low knowledge about BSE will lead to an attitude of less concern for BSE efforts, an attitude of less concern for BSE efforts will make someone have bad actions in early detection as a prevention of breast cancer [38]. Knowledge and attitude will affect a person's behavior, which behavior can or cannot be observed directly. Behavior is a person's response or reaction that is created because of external stimuli in the form of knowledge or attitude [39], [40].

Previous studies conducted by Alomair et al., [41] focused on the level of knowledge, attitude, and practice of BSE among female students at the university, emphasizing the importance of education in improving early detection behavior of breast cancer. However, these studies tend to be descriptive in nature and do not examine in depth the relationship between knowledge and attitude with BSE behavior. In contrast, the current study aims to analyze the direct relationship between knowledge and attitude with BSE behavior, as well as provide a more specific contextual approach to public health students in Indonesia. Thus, this study not only fills the gap in causal relationship analysis but also provides new insights into how health education background influences BSE behavior.

This study has a novelty in integrating the analysis of the relationship between knowledge and attitudes with BSE behavior specifically in students of Public Health Sciences study programs in Indonesia. Not only focusing on the description of behavior, this study also explores the factors that influence the level of awareness and practice of BSE in the context of health education. The approach used reflects local needs and provides specific insights to improve breast cancer early detection behavior in this academic group, which has not been widely explored in previous studies.

This research is important to conduct considering that breast cancer is one of the leading causes of death in women in Indonesia, with a low early detection rate. As prospective health workers, Public Health students have a strategic role in promoting health behavior. Their level of knowledge and attitude towards BSE greatly influences the implementation of health education to the community. Therefore, this study contributes to efforts to prevent breast cancer by improving BSE behavior among educated young generations.

Based on the background above, the purpose of this study is to determine the relationship between knowledge and attitude with BSE behavior in female students of the Public Health Science study program, University of Jambi.

2. RESEARCH METHOD

2.1. Type and Design of Research

This study uses a descriptive analytical research design, which describes the relationship between independent variables and dependent variables with a cross-sectional approach, namely each subject is observed once and the measurement of variables is carried out at the time of the examination [42], [43]. The study uses an online questionnaire in the form of a googleform which includes instruments of knowledge, attitudes, and BSE behavior.

2.2. Population and Sample

Population is all elements or elements that are the object of research. The population of this study was all female students of the Public Health Study Program, Faculty of Medicine and Health Sciences, Jambi University, class of 2017 and 2018, totaling 307 female students. The sample is part of the population that is the center of research, within a predetermined scope and time. The selection of research samples is determined by using a free application (website), namely spinner.id, the selection of respondents if there are 10 people in one class filling out the questionnaire and in accordance with the criteria but 8 are needed then in the spinner by entering the 10 names into spinner.id, spun 2 times and the 2 names will not be used as respondents. However, with the consideration that if the respondents who fill in are less than 100 people, they will be taken according to the minimum sample and if more than 100 people fill in, all will be taken as respondents.

2.3. Data Collection Techniques

The primary data of this study is data obtained from questionnaires distributed by researchers to respondents via Google Form. The questionnaire contains questions and statements filled in by respondents based on their knowledge, attitudes and behavior. Respondents' answers will be collected in a Google Drive connected to the researcher's email.

2.4. Data Analysis Techniques

Univariate analysis is the process of descriptively analyzing each existing research variable by calculating the frequency distribution and percentage of each variable. Researchers see the frequency distribution or characteristics of each variable studied. Bivariate analysis is an analysis of two variables that are suspected of being related or correlated. By using the Chi Square statistical analysis (χ^2) with a significance level (α) of 5% processed using a computerized system using the SPSS program. The results of the χ^2 analysis are: if ≤ 0.05 , H_0 is accepted and $p > 0.05$ then H_0 is rejected.

3. RESULTS AND DISCUSSION

3.1. Univariate Analysis

Univariate analysis is an analysis conducted to determine the characteristics of respondents in the form of general data, ever having received BSE, sources of information, ever having done BSE and reasons for not doing BSE.

The largest respondents in this study were aged 21 years as many as 45 (47.9%) respondents, class of 2017 as many as 55 (58.5%) respondents, and Epidemiology interests as many as 27 (28.7%) respondents. Respondents in this study did not have a history of breast cancer in the family and did not have breast abnormalities such as lumps or tumors. Table 4.1 also shows that the majority of respondents had received information related to BSE, namely 93 (98.9%) respondents, whose sources of information tended to be via the internet or social media (25.7%). In this study, respondents who had done BSE were 65 (69.1%) respondents and the reason for the 29 respondents who had never done BSE was predominantly because they did not have breast abnormalities (17.5%).

Table 1. Frequency Distribution of Respondents' Knowledge

Knowledge	Amount (n =94)	%
Poor	21	22.3
Good	73	77.7

The table above shows that of the 94 respondents who had good knowledge about breast cancer and BSE, 73 (77.7%) respondents and 21 (22.3%) respondents had knowledge in the poor category.

Table 2. Frequency Distribution of Respondents' Attitudes

Attitude	Amount (n =94)	%
Negative	42	44.7
Positive	52	55.7

The table above shows that 52 (55.3%) respondents have a positive attitude towards early detection of breast cancer and 42 (44.7%) respondents have a negative attitude.

Table 3. Frequency Distribution of Respondents' Behavior

Behavior	Amount (n =94)	%
Poor	26	27.7
Good	68	72.3

The table above shows that 68 (72.3%) respondents had good BSE behavior and 26 (27.7%) had poor behavior.

3.2. Bivariate Analysis

The results of the study on the relationship between knowledge and BSE behavior of Public Health Science students at Jambi University are:

Table 4. Relationship between Knowledge and BSE Behavior in Public Health Science Students at Jambi University

Knowledge	BSE behavior				Total		P	PR	CI-95%
	Poor		Good		n	%			
	n	%	n	%	n	%			
Poor	6	30	14	70	20	100	0.792	1.110	0.515-2.390
Good	20	27	54	73	74	100			

Based on the table above, it shows that out of 20 respondents with the category of less knowledge but have less BSE behavior, there are 6 (30%) respondents, while respondents with good BSE behavior are 14 (70%) respondents. Meanwhile, out of 74 respondents with good knowledge but have less BSE behavior, there are 20 (27%) respondents, and respondents with good BSE behavior are 54 (73%) respondents. The results of the statistical test with Chi-Square obtained a p-value of 0.792 ($p\text{-value} > 0.05$) which means that there is no significant relationship between respondent knowledge and BSE behavior.

The results of the study on the relationship between attitudes and breast self-examination (BSE) behavior of female Public Health Sciences (IKM) students at Jambi University are:

Table 6. Relationship between Attitude and BSE Examination Behavior in Public Health Science Students at Jambi University

Attitude	BSE behavior				Total		P	PR	CI-95%
	Poor		Good		n	%			
	n	%	n	%	n	%			
Negatif	17	38.6	27	61.4	44	100	0.026	2.146	1.067-4.318
Positif	9	18	41	82	50	100			

Based on the table above, it shows that out of 44 respondents with negative attitude category but have poor BSE behavior, there are 17 (38.6%) respondents, while respondents with good BSE behavior are 27 (61.4%) respondents. Meanwhile, out of 50 respondents with positive attitude but have poor BSE behavior, there are 9 (18%) respondents, and respondents with good BSE behavior are 41 (82%) respondents. The results of statistical test with Chi-Square test obtained p value of 0.026 ($p\text{ value} < 0.05$), which means that there is a significant relationship between attitude and BSE behavior. The result of risk calculation obtained PR value = 2.146, (95% CI: 1.067-4.318) which means that respondents with negative attitude have 2.14 times risk compared to respondents with positive attitude towards BSE behavior. And CI is in the range of 1.067 - 4.318 which means attitude is a risk factor for BSE behavior.

The results of the study showed that the p-value of the study was 0.792, so $P \geq 0.05$ was statistically accepted. H_0 was accepted, so there was no relationship between knowledge and BSE behavior of female students in the Public Health Science study program at Jambi University.

Everything we know about how to maintain health is the definition of health knowledge. Knowledge is the result of knowing and appears after observing certain objects. Knowledge is obtained through the process of education and experience which becomes a learning process, and has an important role in shaping a person's behavior. New behavior is formed if it is based on knowledge, awareness, interest, experience and environment. And tends to last a long time in a person. If someone has good knowledge about the importance of early detection of abnormal lumps in the breast, there will be a response to early detection behavior. However, if their knowledge is lacking, there will be no response to behavior. The same thing happens to women, their good knowledge of breast cancer and BSE makes them do BSE as a form of secondary prevention.

Higher knowledge of female students about breast cancer and BSE does not necessarily affect BSE behavior. Human behavior is an experience and human interaction with their environment which is manifested in the form of knowledge. In other words, behavior is an individual's response or reaction to stimuli that come from outside or from within him. Behavior is called a reflexive response, meaning there is a reaction or action that is carried out based on the stimulus given or received.

Although BSE has never been included in the learning curriculum and is not discussed in depth, respondents in the study have good knowledge where 93 respondents have received information related to breast

cancer and early detection of breast cancer. Sources of information related to breast cancer and BSE obtained by students come from the internet or social media (25.7%); lecture materials (22.3%); friends or family (17.2%); health workers (14.9%); advertisements or print media (10.8%); television or radio (8.4%) and from other sources (0.7%) such as seminars or scientific discussions. So that female Public Health students at the University of Jambi tend to have the awareness to find out about breast cancer and BSE which is motivated by the education they have taken and a fairly high curiosity about early detection of cancer. Although the knowledge of female Public Health students is relatively high, there are still female students who have poor BSE behavior. The data shows that female students who have done BSE are 65 respondents and 29 respondents have never done BSE. The reason for not doing BSE is because they do not have breast abnormalities (47.5%); feeling embarrassed or strange observing their own breasts (24.6%); no family members have cancer (13.1%); fear of being diagnosed with breast cancer (8.2%); and not knowing how to do BSE (6.6%).

This explains that good behavior is still difficult to obtain with good knowledge alone, because there are still other supporting factors such as beliefs, comfort, respondent environment, facilities and infrastructure, and social support to do BSE.

The results of the study showed that the p-value of the study was 0.026, so $P < 0.05$ was obtained statistically H_0 was rejected, so there was a relationship between attitudes and BSE behavior of female students in the Public Health Science study program at Jambi University.

Attitude is a person's opinion or point of view accompanied by a tendency to act on an object or stimulus. Attitude is knowledge, but accompanied by actions that are in accordance with that knowledge. A person's attitude towards something will influence their actions. 49 Respondents can or cannot perform BSE depending on the stimulus they receive. If the stimulus received is good, the respondent will perform BSE, but if not, the respondent will not perform BSE.

The results obtained indicate that most respondents in this study have good knowledge regarding breast cancer and its early detection, thus showing a positive attitude in BSE behavior. Although BSE is not in the learning curriculum and is not discussed in depth. However, there is the internet or social media that can be used to find more information related to BSE. Showing that the better the respondent's attitude, the better and more routine they will be in performing BSE. Respondents who have a good attitude tend to know earlier if there is an abnormality in the breast with BSE so that in the handling carried out.

However, the good attitude of female students does not necessarily have a full impact on awareness in performing BSE. From the results of the study, there were still 42 (44.7%) respondents who had negative attitudes and 14 (11.6%) respondents who had negative attitudes and poor BSE behavior. This is also supported by the presence of respondents who have never performed BSE because they do not have breast abnormalities (47.5%); feel embarrassed or strange observing their own breasts (24.6%); no family member has cancer (13.1%); afraid of being diagnosed with breast cancer (8.2%); and do not know how to do BSE (6.6%). This shows that women's attitudes to realize the importance of BSE to prevent the risk of breast cancer can increase women's awareness to motivate themselves to practice BSE directly in their daily lives, so that women do not feel embarrassed and are used to observing their breasts and can easily realize if there are abnormalities in the breasts.

The results of this study can provide important contributions in the development of health education programs, especially related to improving early detection behavior of breast cancer through BSE. Findings on the relationship between knowledge, attitudes, and BSE behavior can be the basis for educational institutions to design public health curricula that are more focused on breast cancer prevention. In addition, this study also provides insight for health policy makers to develop more effective and evidence-based early detection campaigns, and involve students as agents of change in increasing public awareness.

This study has several limitations, including the scope of respondents which only included students of the Public Health Science study program, so the results may not be generalizable to other populations. In addition, data collection using questionnaires is at risk of causing response bias because respondents can provide answers that are considered the most socially correct. This study also does not include longitudinal analysis, so it cannot observe changes in BSE behavior over time. This opens up opportunities for further research with a wider population and more diverse data collection methods.

4. CONCLUSION

The conclusion of this study is that there is no relationship between knowledge and BSE behavior in female students of the Public Health Science study program at Jambi University (p-value 0.792). There is a relationship between attitude and BSE behavior in female students of the Public Health Science study program at Jambi University (p-value 0.026). Further research is recommended to involve a wider sample, including students from various study programs and universities, to obtain a more comprehensive picture of BSE behavior. In addition, longitudinal research can be conducted to monitor changes in BSE behavior over time, as well as the impact of health education interventions on students' knowledge and attitudes.

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