

The Effect of The Perception of Unnes Public Health Study Program Students on Early Detection of Breast Cancer Using Bse (Breast-Self Examination)

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Abstract

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Breast cancer is the leading cause of death of women in the world as well as in Indonesia. Nearly 70% of patients come to the hospital in an advanced stage, so it causes death. The most effective prevention strategy is early detection. BSE is a way of early detection with breast examination by self to detect any abnormalities that exist in the breast. Health action plans are grown with individual beliefs and perceptions of the diseases described through Health Belief Models. This study aims to analyze the effect of the perception of UNNES Public Health Study Program students on early detection of breast cancer using BSE. The study design used analytic with cross sectional approach through survey method. The population was all of undergraduate students of Public Health Program UNNES of fifth and seventh semester in 2017/2018. The samples were 74 respondents with the sampling technique used purposive sampling was continued quota sampling. Chi square test results show that there is significant an effect of perceived susceptibility on early detection of breast cancer using BSE (0.007); there is significant an effect of perceived severity on early detection of breast cancer using BSE (0.009); there is significant an effect of perceived benefits on early detection of breast cancer using BSE (0.003); and there is significant an effect of perceived barrier on early detection of breast cancer using BSE (0.000). Logistic regression test results show that perceived susceptibility has p-value 0.036 and OR 4.002; perceived severity has p-value 0.018 and OR 4.744; perceived benefits has p-value 0.004 and OR 7.247; and perceived barrier has p-value 0.048 and OR 3.435; concluded that the perception of benefit is the most influential variable to the the early detection of breast cancer using BSE. This study provides benefits as a thought contribution to the development of science in the field of reproductive health, disease concept, and behavioral science related to its application in early detection of breast cancer using BSE.

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INTRODUCTION

The kind of cancer as the leading cause of death in women is breast cancer (Li et al., 2015). According to Kisuya et al. (2015), high incidence of breast cancer in developed countries were also experienced by developing countries, which there was an increase of about half of breast cancer incidence and there was 60% of deaths in developing countries.

Breast cancer incidence in Indonesia can be seen from the medical record of the National Cancer Center Dharmais Hospital, that in the last 10 years until 2016, it was in the first place and even there was increased number of cases each year, with the proportion of about 40% of all cancer cases in that hospital, (2016). The high incidence of breast cancer can also be seen from Semarang Health Office data, with 54.4% of cases in 2015 (DHO, Semarang, 2015).

Breast cancer can affect women at all ages including in their productive age (Birhane et al., 2017). Almost 70% of patients come to the hospital when they are in an advanced stage (Savitri, et al, 2015). Such condition will require expensive treatment and management and the results are often poor (Birhane et al., 2017). Women who have had breast cancer will experience and are often burdened by problems of physical lethargy, pain, breast sensitivity, and difficulty in concentrating associated with reduced physical function and emotional well-being. Psychological well-being is caused by fear of cancer metastases, recurrence, distress from surgery, and fear of future survival. Problems faced by these patients often occur chronically and in long term (Fong & Cheah, 2016).

According to Nugroho & Utama (2014), important strategy needed in coping with breast cancer is with early detection. A woman can recover if the disease is detected earlier (Birhane et al., 2017). The most common early detection step is BSE (Priyoto, 2015). BSE is recommended in women starting at age 20 (Mulyani & Rinawati, 2013). BSE is very important because 75-85% malignancy of breast cancer can be found by women while doing BSE (Irianto, 2015). Early detection with BSE can also reduce breast cancer death rates by up to 20%, however in fact not many women perform BSE (Septiani & Sounds, 2013).

According to Novita & Franciska (2011), preventive measures related to the world of health and covering a wide range of behaviors including screening are described through Health Belief Models (HBM), which focus on individual perceptions and beliefs on a disease (Priyoto, 2014).

Based on preliminary study conducted by interviewing 10 (100%) students of UNNES Public Health Study Program, it was known that 2 students (20%) performed BSE routinely every month, 2 students (20%) performed BSE not routinely, and 6 students (60%) did not perform BSE either routinely or not routinely. The reason for those who did not perform BSE or performed BSE not routinely was because they were not used to be, no time, forget, and did not feel pain or symptoms that require them to perform BSE. This suggests that they as potential health workers are expected to be the role models, but in reality they did not fully implement or perform BSE. In addition the students were also in the age group (> 20 years) who should have performed BSE.

The data and phenomenon become the basis of the author's interest to conduct a study on the effect of the perception of UNNES Public Health Study Program students on early detection of breast cancer using BSE. The purpose of this study is to analyze the effect of the perception of UNNES Public Health Study Program students on early detection of breast cancer using BSE. This study provides benefits as a knowledge contribution for scientific development in the field of reproductive health, disease concept, and behavioral science associated with its application in early detection of breast cancer using BSE.

METHODS

The type used in this study was analytical with cross sectional approach through survey method using questionnaire instrument. This study was conducted at UNNES in September 2017. The population in this study was all students in Bachelor of UNNES Public Health Study Program, semester V and VII academic year of 2017/2018 as many as 283 female students. The amount of sample in this study was calculated using Slovin formula, which got a number of 74 respondents. Sampling technique in this study used purposive sampling followed by quota sampling.

Variables in this study consisted of independent variables, namely perceived susceptibility, perceived severity, perceived benefits, perceived barrier, and dependent variables, namely early detection of breast cancer using BSE. This study used bivariate (chi square) and multivariate (logistic regression) analysis techniques processed with SPSS 16.

RESULTS AND DISCUSSION

The study results on the effect of the perception of UNNES Public Health Study

Program students on early detection of breast cancer using BSE, with the samples of 74 respondents were as follows:

Bivariate Analysis

Table 1. Effect of the Perceived Susceptibility of UNNES Public Health Study Programs Students on Early Detection of Breast Cancer Using BSE

Perceive Suscepti bility	Early Detection with BSE				Total f %	<i>P-value</i>	
	Less		Good				
	f	%	f	%			
Low	24	72.7	9	27.3	33	100.0	0.007
High	17	41.5	24	58.5	41	100.0	
Total	41	55.4	33	44.6	74	100.0	

The analysis result of chi square test obtained ρ -value = 0.007 < α (0.05) which indicated an effect of perceived susceptibility of UNNES Public Health Study Program students on early detection of breast cancer using BSE.

The data of the study results showed that most of 33 respondents who had low perceived susceptibility did not perform early detection using BSE as many as 24 respondents (72.7%). The result is also supported by Rosenstock in Tastan & Unver (2011), that people's perceptions and beliefs could influence their health behaviors. People would not change their unhealthy behavior unless they believed they were at risk. On the other hand, if they did not believe that they were at risk or had a low risk of being vulnerable to a disease, unhealthy behavior would tend to continue. Similarly, according to Wibowo (2017), a person would take certain actions on his or her health if he or she perceived that he or she was at risk of certain disease.

Supporting study came from Tehrani et al. (2014), which stated that individuals would take action to protect themselves if they considered they are vulnerable to a condition or had health problem with serious consequences, and when action taken would reduce the vulnerability they feel. In accordance with the findings in the study conducted by Masoudiyekta et al. (2015) among Iranian women, the p-value analysis was 0.001 < α (0.05) and it meant that there was a relationship between perceived susceptibility and breast cancer screening behavior. According to Hasdianah & Suprpto (2014), someone performed BSE because BSE was one way of prevention that had a purpose to avoid breast cancer.

Table 2. Effect of the Perceived Severity of UNNES Public Health Study Programs Students on Early Detection of Breast Cancer Using BSE

Perceived Severity	Early Detection with BSE				Total f %	<i>P-value</i>	
	Less		Good				
	f	%	f	%			
Low	25	71.4	10	28.6	35	100.0	0.009
High	16	41.0	23	59.0	39	100.0	
Total	41	55.4	33	44.6	74	100.0	

The analysis result of chi square test obtained ρ -value = 0.009 < α (0.05) which indicated an effect of perceived severity of UNNES Public Health Study Program students on early detection of breast cancer using BSE.

The results of this study also showed that most of 39 respondents who had perceived of severity in the high category performed good early detection of BSE as many as 23 respondents (59.0%). This result is consistent with Doumit et al. (2017) in Lebanese women, that those with a high perception of breast cancer seriousness, have a tendency to do breast self-examination. Lebanon is a country that has similarities with Indonesia, which is a developing country with a diverse population and limited resources.

Respondents who were students in health field must be understood about the severity experienced when suffering from breast cancer. Such belief should encourage them to perform early detection as a form of prevention to avoid breast cancer. Becker's theory in Subaris (2016) mentioned that if the perception of the severity or seriousness of the individual was high, then he or she would behave well. Novita & Franciska (2011) added that individual actions to seek treatment or prevent a disease would be encouraged by the severity of the disease.

The presence of respondents who thought breast cancer as serious disease so that early detection was needed can be influenced by the environment. The environment affects the individuals residing within the environment. This happens because of the reciprocity or non reciprocity interaction, which is responded by every individual with the habits or motivations made by people around. It is similar with the result of the study conducted by Latif et al. (2012) that the environment was a significant predictor of changes in human behavior.

The result of this study is in line with the study conducted by Delviani & Priscilla (2014) among the nursing students in Padang, who obtained the analysis result of the p value of 0.007 < α (0.05) and concluded that there was a

relationship between the perceived severity and BSE behavior.

Table 3. Effect of the Perceived Benefits of UNNES Public Health Study Programs Students on Early Detection of Breast Cancer Using BSE

Perceived Benefits	Early Detection with BSE				Total	<i>P-value</i>
	Less		Good			
	f	%	f	%		
Low	28	71.8	11	28.2	39	100.0
High	13	37.1	22	62.9	35	100.0
Total	41	55.4	33	44.6	74	100.0

The analysis result of chi square test obtained ρ -value = 0.003 < α (0.05) which indicated an effect of perceived benefits of UNNES Public Health Study Program students on early detection of breast cancer using BSE.

The data of the study results showed that most of 39 respondents who had low perceived benefits did not perform early detection using BSE as many as 28 respondents (71.8%). That condition may be influenced by the level of awareness of respondents regarding the usefulness or effectiveness of a precautionary measure, which may affect the extent of their incentive to implement the action. If there is no belief about the benefits of the recommended disease precautions, then the individual tends to avoid such action. It is in accordance with the theory of Priyoto (2014) that the perceived benefits is the belief of a person about the usefulness of an action to reduce the risk of a disease, or related to the benefits that will be felt if he or she performs the recommended action.

This condition is supported by the finding from the study conducted by Doumit et al. (2017) in Lebanese women and findings from Didarloo et al. (2017) of Urmia medical students in northwestern Iran that respondents who have a high perceived benefit or benefit of BSE are more likely to perform BSE than those with low benefits. It is also in accordance with Becker's theory of HBM in Subaris (2016) that individuals who are aware of the benefits of early detection of disease will continue to take such healthy action. A study conducted by Febriani & Indrawati (2016), explained that respondents who took precautions, perceived that they would feel the benefits of the action to be performed.

According to Nugroho & Utama (2014), performing BSE from the age of 20 years or during adolescence would make women wiser to get used to do BSE routinely and learn to understand to feel the breasts and their shapes, so that the abnormalities that arised could be

immediately known. In addition, BSE helped to detect early lumps and abnormal changes in the breast, and to detect cancer early (Astutik, 2014).

The study that supported the result came from the study finding by Masoudiyekta et al. (2015) with p value $0.014 < \alpha$ (0.05) and the study finding by Abolfotouh et al. (2015) with p value $0.000 < \alpha$ (0,05), so it can be concluded that there was a relationship between perceived benefits and the behavior of early detection of breast cancer. Similarly, the study conducted by Ertem et al. (2017) showed that the mean score for benefit dimension was found to be effective in the implementation of BSE.

Table 4. Effect of the Perceived Barrier of UNNES Public Health Study Programs Students on Early Detection of Breast Cancer Using BSE

Perceived Barrier	Early Detection with BSE				Total	<i>P-value</i>
	Less		Good			
	f	%	f	%		
High	34	72.3	13	27.7	47	100.0
Low	7	25.9	20	74,1	27	100.0
Total	41	55.4	33	44.6	74	100.0

The analysis result of chi square test obtained ρ -value = 0.000 < α (0.05) which indicated an effect of perceived barrier of UNNES Public Health Study Program students on early detection of breast cancer using BSE.

The data of the study results showed that most of 47 respondents who had high perceived barrier were less in performing early detection using BSE as many as 34 respondents (72.3%). This result is in accordance with Becker's theory in Subaris (2016), that perceived barrier had a negative relationship with healthy behavior, meaning that if the perceived barrier to healthy behavior was high, then healthy behavior would not be performed. It is also supported by the finding by Tastan & Unver (2011), which stated that respondents who had higher level of obstacles in BSE had a higher potential for not performing BSE. It was mentioned that one barrier was due to their feelings when were afraid to find masses in her breasts. According to Priyoto (2014), the problem of this barrier was related to the individual's own evaluation process over the obstacles faced to adopt new behaviors.

It was mentioned in the study conducted by Kusuma & Susilawati (2013), that no free time, feeling lazy, no facilities, forget, lack of family support, and difficulty in getting used to were the barriers in performing BSE. Added also by the finding by Kawar (2012), that there

were four barrier that affected the participation of Jordanian and American Palestinian women in early detection of breast cancer, namely cultural-specific obstacles (shame, family relationship, fatalism, and traditional healing consultation), immigration issues (citizenship, language, and affordability of facilities), common barriers (including not participating in medical examination, stigmatizing cancer, fear, and ignorance about breast cancer screening), and irrelevant obstacles (availability of services and political situation).

The result of a study conducted by Zainafree (2015) explained that taking preventive and medicinal actions was influenced by the perception of the cost/negative aspect that prevented individuals to perform health actions, such as expensive cost, danger, unpleasant experience, pain, must provide time, far facilities, fear and embarrassment when the reproductive health problems were known by health officers/others, and other aspects. According to Novita & Franciska (2011), the barrier related to such action might affect the action to be taken.

It was described by Asghari et al. (2016), that the intention to conduct BSE depends on the benefits and barriers what respondents feel. The results of Tavafian et al. (2009) in his study result that subjects who regularly performed breast self-examination felt more benefits and fewer barrier compared to women who never performed breast self-examination. It is supported by Tabari et al. (2017), that more awareness about breast cancer and early breast examination may reduce obstacles to breast self-examination and create appropriate health behaviors.

Multivariate Analysis

Table 5. Multivariate Analysis on the Effect of the Perception of UNNES Public Health Study Programs Students on Early Detection of Breast Cancer Using BSE

Variable	Sig.	Exp (B)	95.0% C.I. for EXP(B)	
			Lower	Upper
Perceived_Susceptibility	.036	4.002	1.097	14.600
Perceived_Severity	.018	4.744	1.313	17.141
Perceived_Benefits	.004	7.247	1.911	27.487
Perceived_Barrier	.048	3.435	1.009	11.702

Based on the table above it can be seen that perceived benefits was the variable with the strongest effect on the respondents to perform

early detection of breast cancer using BSE with OR value of 7.247 and 95% CI of 1.911 - 27.487 which meant that respondents with low/ very low perceived benefits probably 7.247 times for less/ very less in performing early breast cancer detection using BSE compared to the respondents who had high/ very high perceived benefits. These results are supported by the finding from the study conducted by of Birhane et al. (2015), who reported that perceived benefits was a significant predictor of breast cancer screening among Ethiopian women.

The condition is because the beliefs of the respondents are very important to help determine the direction of action to be taken. As mentioned by Green theory in Notoatmodjo (2010), that belief is one of the domains or major factors that has influence in facilitating the occurrence of one's behavior.

Perceived benefits is a person's perception about the usefulness of an action in reducing the risk of a disease. A person who tends to do healthy behavior believes that the new action will reduce the risk of developing a disease (Priyoto, 2014). If the respondent is not or less sure about the benefits after implementing BSE in his life, then precaution actions are reluctant to be performed properly.

Other variables in this study were also identified to have an effect on early detection of breast cancer using breast self-examination after perceived benefits, i.e. perceived seriousness with OR of 4.744 and 95% CI of 1.313 – 17.141, then perceived vulnerability variable with OR of 4.002 and 95% CI of 1.097 – 14.600, and the last was perceived obstacles variable with OR of 3.435 and 95% CI of 1.009 – 11.702. These conditions indicated that each of the perceptions had an effect on one's decisions in early detection of breast cancer using breast self-examination, but the belief of benefits was the most powerful factor.

This reinforces existing theories, such as according to Bensley & Fisher (2008) that HBM is based on the belief that health behavior is determined by individuals who perceive themselves susceptible to a health problem, individuals who view the problem as a serious problem, individuals who believe they benefit from treatment or prevention efforts, and the individuals who recognize the need to take action and any constraints that may interfere with the action. However, the likelihood of a person taking precautions is directly influenced by the health beliefs about perceived threats and effectiveness in the treatment or of the precautions to be taken.

CONCLUSION

The conclusion from this study was that perceived vulnerability, perceived seriousness, perceived benefit, and perceived obstacles had significant effect on early detection of breast cancer using breast self-examination with p value of $< \alpha$ (0.05). Meanwhile, the strongest variable that influence early detection of breast cancer using BSE on the students of UNNES Public Health Study Program was the variable of perceived benefit.

Based on the study results there are several recommendations that can be provided. Recommendation for the future researcher is to be able to carry out study on methods or techniques that can make the students of Public Health Study Program UNNES interested to make early detection of breast cancer with BSE. Recommendation for female students is to be able to increase motivation and awareness in early detection of breast cancer and more actively apply the health education obtained especially in performing BSE independently and regularly as early prevention effort to breast cancer, so that later they also can provide effective service for society. Furthermore, recommendation that can be given to the institution/ study site is to pay more attention to the health of the students by providing health services including creating programs for medical examination and routine disease screening through cooperation with health agencies.

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