Jurnal Kesehatan Masyarakat

Level of Knowledge and Self Efficacy Improve Breast Self-Examination (BSE) Behaviors

Intan Mutiara Putri✉, Luluk Rosida, Suyani, Esi Putri Silmina
Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta, Indonesia

Article Info

Abstract

The incidence of breast cancer is 40 per 100.000 women. BSE is a screening to detect breast cancer. The research objective is to determine the correlation between knowledge and self-efficacy with BSE behavior. This cross-sectional descriptive-analytic study utilized a sample of 20-65 women aged 100 years. Multistage random sampling was used as the sampling technique—univariate and bivariate analysis with a significance level of ρ <0.05 and CI of 95%. The analysis results showed a correlation between the level of knowledge and self-efficacy with BSE behavior (p-value = 0.026; 0.021) and PR values of 2.5 and 2.6 (CI 95%: 1.074-5.641; 1.100- 6.293). In conclusion, women who have a high level of knowledge and self-efficacy are three times more likely to do BSE compared to women with low levels of knowledge and self-efficacy.

Introduction

Breast cancer is the most commonly diagnosed cancer and the second leading cause of cancer death for women in the US; in 2016, an estimated 246,660 women were diagnosed with breast cancer, and 40,450 of them were estimated to have died (Anastasi & Lusher, 2019). Based on primary health research data in 2013, the prevalence of cancer in Indonesia is 1.4 per 1000 population or about 330,000 people. The highest cancer prevalence was in Yogyakarta (4.1%), followed by Central Java (2.1%), Bali (2%), Bengkulu, and DKI Jakarta with 1.9%, respectively. The incidence of breast cancer is 40 per 100,000 women (Thelma et al., 2014). The incidence of breast cancer will increase if there are one or more risk factors for breast cancer. Risk factors associated with an increased incidence of breast cancer include; female gender, age >50 years, family history, and genetics. In addition, a history of early menstruation (<12 years) or late menopause (>55 years; history of hormonal disease; alcohol consumption; history of chest wall radiation,

and environmental factors (KPKN, 2015). Breast cancer is the most frequently diagnosed cancer in women worldwide. Its incidence tends to increase in developed countries, partly due to changes in reproductive practices and lifestyle and early detection of cancer through screening (Wardle et al., 2015).

Based on data from the Yogyakarta City Health Office in 2012, the incidence of breast cancer was 58 people; in 2013, it increased to 127 people, and in 2014 it was 155 people. The death rate due to breast cancer in 2015 was 13 cases, and from 2016 to August, there were four cases (KPKN, 2015). Preliminary study data obtained at the Yogyakarta City Health Office in August 2016 obtained data on the incidence of breast cancer in as many as 418 cases. The highest cases were in Tegalrejo District, with 51 cases or 12.2%. Handling cancer faces various obstacles that cause almost 70% of patients in an advanced stage. Early detection and improved breast cancer treatment have contributed to a 3.3 percent reduction in the death rate since 1990 in women younger than 50 years. The

screening model consists of mammography, a biopsy of suspicious lumps, magnetic resonance imaging, clinical breast examination, and breast self-examination (Anastasi & Lusher, 2019). Breast self-examination (BSE) is a critical screening to detect breast cancer. There is evidence that women who correctly practice monthly BSE are more likely to detect lumps in the early stages of their development, and early diagnosis has been reported to influence early treatment and result in better survival rates. The study stated the effectiveness of international screening programs for breast cancer with BSE in Scandinavian countries found that the mortality rate had fallen by 31% after seven years for women aged 40-74 years (Elmore et al., 2005). Several women feel the benefits of BSE; most women do not know how to do BSE (Umeh & Jones, 2010).

Breast cancer screening is highly recommended for early detection of breast cancer for all women regardless of their background characteristics such as socioeconomic status, race or ethnicity, family history, and others (Abolfotouh et al., 2015). The American Cancer Society recommends that young women after the age of 20 undergo screenings such as a clinical breast exam (Clinical Breast Examination) every three years and breast self-examination (Breast Self Examination) or BSE every month. BSE screening can diagnose up to 40% of women (Abolfotouh et al., 2015). Research by Abolfotouh et al. (2015) shows that the majority of women do not agree to do BSE because, according to them, it will not change the fact that suffering from breast cancer is destiny (77.6%), will be embarrassing (71.6%) and BSE is something that is not. Profitable (63.7%). The health belief model (HBM) is widely used as a framework for behavioral intervention in health examinations, especially breast cancer. Studies reveal that behavior-based interventions can help women overcome barriers and encourage them to do BSE regularly (Abolfotouh et al., 2015).

Self-efficacy is one component of the Health Belief Model (Glanz et al., 2008). Research conducted on Iranian women regarding the application of HBM in predicting BSE behavior stated that of the existing HBM components, only self-efficacy showed a strong

relationship. Women who are more confident in their ability to perform BSE with a self-efficacy score are more likely to perform BSE (Bashirian et al., 2021). Research on students in Malaysia found that self-efficacy and perceived barriers to BSE are psychosocial factors that significantly influence BSE behavior (Kratzke et al., 2014).

Women's beliefs related to self-efficacy using HBM are essential factors influencing health behavior (Taylor et al., 2007). Research conducted showed self-efficacy as a strong predictor of accepting the mother's advice and doing BSE; female students with high self-efficacy were more likely to accept their mother's suggestion to do BSE (Kratzke et al., 2013). The application of HBM in psychological factors such as emotion, efficacy, and anxiety to get the risk of breast cancer with female research subjects who have a family history of breast cancer. The most influential factor in doing BSE is the self-inhibition factor. Self-barriers must be balanced with feelings of confidence to do BSE (Rezaeian et al., 2014).

Government policy on cancer prevention is regulated by the Minister of Health of the Republic of Indonesia No. 34 of 2015. Management of Breast Cancer and Cervical Cancer in the form of public health services include promotive and preventive activities that can be carried out by doctors and trained midwives in first-level health facilities or public facilities adequate. Minister of Health Regulation No. 69 of 2013 concerning implementing the health insurance program ensures that the Health Social Security Administration Agency guarantees early detection and treatment of cancer. Health insurance from health care facilities to hospitals (KPKN, 2015). Prevention efforts carried out by the Yogyakarta City Health Office are in the form of screening for specific targets, namely women of childbearing age (30-50 years) who have married only 2.24%. The achievement of non-communicable disease control program indicators in DIY is 80% (KPKN, 2015). The community can do many things, starting from cancer prevention and control, and everyone has the right to cancel services. This study aimed to determine the relationship between knowledge and self-efficacy with BSE behavior.

310

Method

This research is quantitative research with an observational research design. The approach applied is cross-sectional or cross-sectional with independent and dependent variables measured simultaneously in a certain period to determine the relationship between knowledge level and self-efficacy with BSE behavior in women. The sampling method was carried out using multistage random sampling. Tegalrejo sub-district has four villages. The secondary sampling unit was randomly selected from 10 villages from four villages with a computerized population of 637 people.

The number of samples in this study was 100 women. The research sample was taken based on the inclusion criteria: women willing to be studied, aged 20 to 65 years, and domiciled in Tegalrejo District, Yogyakarta City, Indonesia. Exclusion criteria in this study were women who were or had been diagnosed with breast cancer. The data collection instrument in this study used a questionnaire. The questionnaire contains questions regarding the research variables. The instrument to measure this assessment variable was redeveloped based on previous research by (Noroozi, Jomand, &

Tahmasebi, 2010) dan (Khatun, Jittanoon, & Boonyasopun, 2010). This questionnaire was tested for validity and reliability before the study.

Analysis of the data used using univariate analysis. This analysis describes the frequency distribution of respondent characteristic data such as age, marital status, education level, level of knowledge, self-efficacy, and BSE behavior. Bivariate analysis was used to see the relationship between the level of knowledge and self-efficacy variables with BSE behavior variables. In addition, statistical tests using the chi-square test will be carried out to determine the statistical significance of the relationship. If the p-value <0.05, it means that there is a statistically significant relationship with a 95% CI value.

Results and Discussion

Table 1 shows that most of the respondents in this study were 30 out of 82 respondents (82%) and 83 respondents (83%). The education level of the respondents is mainly the higher education level of 73 respondents (73%), and those who are unemployed are 55 respondents (55%).

Table 1. Frequency Distribution Based on the Characteristics of the Respondents

Characteristics	n	%
Age		
<30 years old	18	18
≥30 years old	82	82
Marital Status		
Not married	17	17
Married	83	83
Level of education		
Low	27	27
High	73	73
Employment Status		
Unemployed	45	45
Work		
Total	100	100

Source: Primary Data, 2022

It is by the Yogyakarta City Health Office policy, where women of childbearing age are specifically targeted for breast cancer screening with an age range of 30-50 years and are married. Most of the respondents have a formal education, including high school, Diploma, and Bachelor's degree. Most of them do not work, namely as housewives.

Table 2. Distribution of Respondents' Knowledge Level, Self-efficacy and BSE Behaviour

Varible	n	%
Level of Knowledge		
Low	43	43
High	57	57
Self Efficacy		
Low	47	47
High	53	53
BSE behaviour		
Never	20	20
Experienced	80	80
Total	**100**	**100**

Source: Primary Data, 2022

The results show that most respondents have a high level of knowledge about breast cancer and BSE, with as many as 57 respondents (57%). Myths that occur in society, including knowledge about breast cancer caused by witchcraft and the perception that holding breasts is taboo, were the types of questions asked by respondents. Research in Turkey found that out of 76.6% of women who had heard of breast cancer, only 31.7 had performed BSE. Little information is disseminated to the public about breast cancer (Tavafian et al., 2009).

Most of the respondents, as many as 53% respondents, have a high level of self-efficacy.

Self-efficacy is formed through a social learning process that can last a lifetime. It is a belief in one's ability to do something. Someone will do something if they feel able to do it. If a person believes a new behavior is helpful because of its benefits but thinks he or she cannot do so because of perceived resistance, likely, it will not be done. The best self-efficacy becomes a predictor to influence breast cancer detection behavior, one of which is BSE (Tavafian et al., 2009). Based on table 2, most of the respondents who have already done BSE are as many as 80 respondents (80%).

Table 3 The Results of the Correlation between the Level of Knowledge and Self-efficacy with BSE Behaviour

Variable	BSE Behaviour				PR	(CI95%)	p-value
	Never		**Experienced**				
	n	**%**	**n**	**%**			
Level of Knowledge							
Low	13	30.2	30	69.8	2.5	1.074-5.641	0.026
High	7	12.3	50	87.7			
Self Efficacy							
Low	14	29.8	33	70.2	2.6	1.000-6.293	0.021
High	6	11.3	47	88.7			

Source: Primary Data, 2022

Table 3 shows that the external variable tested is the knowledge level variable. The results obtained a p-value of 0.026 (<0.05), which means a significant correlation between the level of knowledge and BSE behavior. The analysis results showed that the PR value was 2,5 (95 CI: 1.074-5.641), which means that women who had a high level of knowledge were 2.5

times more likely to do BSE than respondents with a low level of knowledge.

The results showed a p-value of 0.021 (<0.05) based on the self-efficacy variable, which means a significant correlation between self-efficacy and BSE behavior. The results of the analysis showed that the PR value (relative prevalence) was 2.6 (95% CI: 1.100- 6.293),

which means that women who have high self-efficacy are three times more likely to perform BSE compared to respondents who have low self-efficacy (Frankenfield, 2009). The results of previous studies where a higher self-efficacy score is possible to do BSE (Mousa & Moussa, 2014). It is consistent with research that women with high levels of self-efficacy are about four times more likely to do BSE regularly than women with low levels of self-efficacy. Self-efficacy and perceived obstacles to doing BSE are psychosocial factors that significantly influence BSE behavior (Thelma et al., 2014). These results suggest that health promotion interventions that help increase self-efficacy and reduce perceived obstacles have the potential to increase Malaysian women's intention to practice BSE, which can promote early detection of breast cancer (El Seifi et al., 2018). Campaigns on breast cancer screening such as mammography among British women impact breast cancer awareness and breast self-examination behavior. Increased BSE behavior will reduce breast cancer mortality rates (Anastasi & Lusher, 2019).

Breast cancer is a significant public health problem among women. However, the uptake of breast cancer screening is deficient among Nigerian women. The results of a study on the age of women in Nigeria on the relationship of the network to breast cancer and perceptions of self-efficacy with breast cancer screening with clinical breast examination and mammography A small proportion of women undergo clinical breast examination or mammography. Women have a high level of fear of breast cancer and a moderate level of self-efficacy for breast cancer screening. These findings emphasize the need for health education and psychosocial interventions that can increase self-efficacy and promote breast cancer screening in general among middle-aged women (Ezema et al., 2021). While in Iran, breast cancer is the most common malignancy in the world. Screening is the basis for early detection. However, the mortality rate is still high in Iranian women due to not screening and screening on time—a theory-based intervention program to improve breast cancer screening behavior in women.

An intervention study conducted in Iran found a significant difference between the average knowledge scores and theoretical constructs before and after the intervention. Our results also showed that both intervention methods had the same effect and a significant difference in breast self-examination performance between the intervention and control groups after the intervention. Given the cost-effectiveness and feasibility of implementing E-learning programs, we would recommend that healthcare planners assist in designing and implementing this effective form of intervention to encourage more women to self-examine to assist with breast cancer screening (Bashirian et al., 2021).

In Lebanon, the same epidemiological profile holds where breast cancer is the leading cancer among Lebanese women, representing 38.2% of all cancer cases. According to the Centers for Disease Control, there was a decrease in BC mortality from 2003 to 2012, reflecting the adoption of national screening mammography as the gold standard for breast cancer detection by Western countries. Despite the considerable debate about whether screening mammograms do more harm than good, screening awareness should be emphasized because the benefits far outweigh the risks. Most breast cancer deaths in Western countries cannot be prevented using screening mammograms alone. Lebanon is adopting a public focus on education and awareness campaigns that encourage early screening for breast cancer. Several studies have demonstrated the impact of early detection as reflected in an increase in early-stage disease and a reduction in more aggressive stages. Further studies should elucidate the effects of awareness campaigns on early breast cancer diagnosis and clinical staging on a national scale; therefore, having available data on screening campaigns before and after the adoption is essential to analyze trends in breast cancer mortality and reductions in advanced disease (Sbaity et al., 2021).

Breast cancer is the most common cancer in women. Early detection of breast cancer plays a significant role in reducing mortality and improving patient prognosis. Despite the benefits of breast self-examination, few women do it, and many do not know how to do it. This study aims to determine the effect of a health education intervention program on breast self-

examination on female students who know 2000, Tanta University, Egypt. Educational program developed and implemented to improve students' knowledge and practice of BSE. Program evaluation was carried out by comparing the findings before and before three months of follow-up. The results show shallow knowledge and practice of students before the intervention, with a significant increase after program implementation. The study concluded that BSE student training had a positive effect on knowledge and practice (Gamelen et al., 2020)

Conclusion

In conclusion, this study found that if a woman aged 20-65 years has high self-knowledge and self-efficacy, she will perform BSE. Women with a high level of knowledge will be 2.5 times more likely to do BSE compared to those with a low level of knowledge and women who have high self-efficacy are three times more likely to do BSE compared to respondents who have low self-efficacy.

Acknowledgment

References

Abolfotouh, M.A., BaniMustafa, A.A., Mahfouz, A.A., Al-Assiri, M.H., Al-Juhani, A.F., & & Alaskar, A.S., 2015. Using the Health Belief Model to Predict Breast Self-examination among Saudi Women. *BMC Public Health,* 15, pp.1163.

Anastasi, N., & Lusher, J., 2019. The Impact of Breast Cancer Awareness Interventions on Breast Screening Uptake Among Women in the United Kingdom: A Systematic Review. *Journal of Health Psychology,* 24(1), pp.113–124.

Bashirian, S., Barati, M., Mohammadi, Y., MoaddabShoar, L., & Dogonchi, M., 2021. Evaluation of an Intervention Program for Promoting Breast Self-Examination Behavior in Employed Women in Iran. *Breast Cancer: Basic and Clinical Research*, 15.

El-Seifi, O.S., Mortada, E.M., & Abdo, N.M., 2018. Effect of a Community-Based Intervention on Knowledge, Attitude, and Self-Efficacy toward Home Injuries among Rural Egyptian Mothers Having Preschool Children. *PLoS ONE*, 13(6), pp.1–13.

Elmore, J.G., Armstrong, K., Lehman, C.D., & Fletcher, S.W., 2005. Screening for Breast Cancer. *Journal of the American Medical Association,* 293(10), pp.1245–1256.

Ezema, R.N., Igbokwe, C.C., Iwuagwu, T.E., Agbaje, O.S., Ofuebe, J.I., Abugu, L.I., Eze, D.D., & Wamanyi, Y., 2021. Association of Sociodemographic Factors, Breast Cancer Fear, and Perceived Self-Efficacy With Breast Cancer Screening Behaviors Among Middle-Aged Nigerian Women. B*reast Cancer: Basic and Clinical Research,* 15.

Frankenfield, K.M., 2009. *Health Belief Model of Breast Cancer Screening for Female College Students*, pp.95.

Gamelen, H., Bassuny, A.E.S.M., & Abo, E.G.E.E.H., 2020. Effect of Health Education Intervention Program on Breast Self-Examination (BSE) among Female Nursing Students In Faculty of Nursing, Tanta University, Egypt. *Researchgate.Net,* October.

Glanz, K., Rimer, B.K., & Viswanath, K., 2008. Health Behaviour and Health Education. *Health Education,* 63(2).

KPKN., 2015. *Panduan Nasional Penanganan Kanker Payudara.* Kementerian Kesehatan Republik Indonesia, 1.

Kratzke, C., Amatya, A., & Vilchis, H., 2014. For Breast Cancer Prevention, Differences among College Women Acquired Information-seeking, Desired Apps and Texts, and Daughter-initiated Information to Mothers. *Journal of Community Health,* 39(2), pp.291–300.

Kratzke, C., Vilchis, H., & Amatya, A., 2013. Breast Cancer Prevention Knowledge, Attitudes, and Behaviours Among College Women and Mother-Daughter Communication. *Journal of Community Health,* 38(3), pp.560–568.

Mousa, M., & Moussa, M., 2014. Effect of Breast Self-Examination Education Program on Knowledge, Attitude and Practice of Nursing Students. *International Journal of Research Studies in Biosciences,* 2(6), pp.40–49.

Rezaeian, M., Sharifirad, G., Mostafavi, F., Moodi, M., & Abbasi, M.H., 2014. The Effects of Breast Cancer Educational Intervention on Knowledge and Health Beliefs of Women 40 Years and Older, Isfahan, Iran. *Journal of Education and Health Promotion*, 3, pp.43.

Sbaity, E., Bejjany, R., Kreidieh, M., Temraz, S., & Shamseddine, A., 2021. Overview in Breast Cancer Screening in Lebanon. *Cancer Control,* 28, pp.1–12.

Tavafian, S.S., Hasani, L., Aghamolaei, T., Zare, S., &

Gregory, D., 2009. Prediction of Breast Self-Examination in a Sample of Iranian Women: An Application of the Health Belief Model. *BMC Women's Health*, 9, pp.1–7.

Taylor, D., Bury, M., Campling, N., Carter, S., Garfied, S., Newbould, J., & Rennie, T., 2007. A Review of the Use of the Health Belief Model (HBM), the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB) and the Trans-Theoretical Model (TTM) to Study and Predict Health-Related Behaviour Change February 2007, *National Institute for Clinical Excellence*.

Thelma, T.S.S., Carma, H., Nevarez, L., Guidry, J.,

Rios, R., Guerra, H., Ortiz, J., & Jones, L., 2014. Breast Cancer Knowledge, Attitude and Screening Behaviors Among Hispanics in South Texas Colonias. *J Community Health*, 39, pp.60–71.

Umeh, K., & Jones, L., 2010. Mutually Dependent Health Beliefs Associated With Breast Self-examination in British Female University Students. *Journal Of American College Health,* 59(2).

Wardle, J., Robb, K., Vernon, S., & Waller, J., 2015. Screening for Prevention and Early Diagnosis of Cancer. *American Psychologist,* 70(2), pp.206–210.