RESEARCH ARTICLE

Breast Cancer Awareness and Breast Screening Practice among Women in Yogyakarta

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Abstract

Background: Low public knowledge and understanding, contributing to late diagnosis, has identified cancer morbidity and mortality from breast cancer. This study was designed to describe breast cancer knowledge and awareness and evaluate breast screening practice among Yogyakarta women. Methods: A cross-sectional study of 350 low socioeconomic women in rural and urban Yogyakarta areas was conducted using a validated self-designed structured questionnaire. Analyzing data using descriptive statistics. Results: A vast majority of respondents knew that breast cancer is a severe disease (85.14%) and can be detected as early as possible (60.00%). Genetic and family cancer history was the best accepted risk factor for breast cancer (61.43%), followed by oral contraception (44.57%), radiation (31.43%), smoking (28.86%) and alcohol intake (21.71%). Over half of respondents (65.14%) correctly identified niple and color discharge as one of the symptoms of breast cancer, followed by breast lump (60.00%), breast swelling (56.29%) and breast fluid (44.57%). While 56.57 percent of respondents had heard of breast self-examination (BSE) and mammography, only 26.86 percent of respondents had regularly performed BSE, and only 28.00 percent of respondents reported daily mammography. A large proportion of respondents (72.86%) never diagnosed breast cancer. Conclusion: In Yogyakarta, the study reported inadequate breast cancer awareness and poor breast screening practice among women with low socioeconomic status aged 20-50 years. Health care professionals are fairly required to educate women about breast cancer and promote early detection and breast cancer screening programs to prevent and reduce breast cancer incidence and mortality.

Keywords: *Breast cancer, Breast cancer screening, Awareness, Knowledge, Indonesia.*

Introduction

Breast cancer is a leading woman malignancy and one of major health concern untill now. Breast cancer is a group of diseases in which cells in breast tissue change and divided uncontrolled and mostly begin in the lobules (milk glands) or in the ducts that connect the lobules to the nipple [1]. The number of prevalent cases (5-year) related to breast cancer among women in Indonesia was estimated to reach 160 653 with 58 256 new cases were diagnosed in 2018 [2]. During the same period, an estimated 22 692 deaths because of this malignancy has made breast cancer as the second killer after lung cancer in Indonesia when men and women are evaluated together [2]. Performing early detection of breast cancer is important considering that breast cancer typically has no symptoms when the tumor is still small and most easily treated [1]. Early diagnosis of breast cancer has been acknowledged to improve patient survival and reduce mortality [3,4]. Thus, having basic knowledge and awareness may help people to give more attention towards breast cancer risk and promote appropriate practice of breast screening.

Otherwise, this kind of cancer has no other preventive action just like vaccination in

HPV-associated cervical cancer that available enough for women in Indonesia [5]. However, nationwide screening program for breast cancer is still not exist in Indonesia including Yogyakarta Province at present despite the finding from a previous study which found that majority of respondents were willing to pay for social health insurance [6].

This may becoma a reason why public especially women still have inadequate awareness regarding breast cancer and its early detection programs. Awareness and knowledge about breast cancer and breast screening practice can be further improved by several interventions from healthcare professional and may as well health policy makers.

Continous educational program related to breast cancer can be an effective way to raise public awareness and also improve the practice of breast screening [7]. However, it is important to examine the level of awareness and knowledge about breast cancer and breast screening practice among women first so we can design the most effective and suitable intervention to improve breast cancer awareness. As little is known about the level of awareness and knowledge of breast cancer in Yogyakarta, this study was aimed to assess it among women in local urban and rural areas of Yogyakarta.

Materials and Methods

A descriptive cross-sectional study was conducted among 350 women living in Yogyakarta urban and rural areas during November to December 2019. After a comprehensive literature review, data were collected using a self-designed questionnaire constructed from appropriate published studies. Using normal forward and backward process, translation was performed. Questionnaire face validity was accomplished and verified by experts in the field of research methodology, oncology, and social

pharmacy. The validated questionnaire was first tested among 30 non-sample participants before being administered to the study population. Universitas Gadjah Mada's Medicine and Health Ethics Committee approved the survey. Each participant volunteered an informed consent before enrollment and their confidentiality would be protected. The questionnaire was divided into three sections; the first section recorded respondents' socio-demographic characteristics (age, educational level, economic status, residential area, employee status, and information source).

The second section included questions about knowledge of breast cancer, risk factors, symptoms, and breast screening method. The third section aimed at assessing the impression of participants on breast screening practice. Using the Social Sciences Statistical Package (SPSS), all data were analyzed based on study's purely descriptive nature. Continuous variables defined by means and standard deviations and categorical variables in frequency form

Results

Three hundred and fifty women in rural and urban Yogyakarta decided to participate. The sample distribution showed a high percentage of women aged 31-40 (37.43 percent), completed secondary school (52.86 percent), lower economic status (64.86 percent), residing in Yogyakarta's urban areas (55.43 percent), and private employees (45.43 percent).

Interestingly, the highest number of respondents claimed social media as their main source of information (28.00%), followed by friends and neighbors (27.14%), TV or radio (25.71%), and paradoxically, the lowest number of respondents chose healthcare professionals as their source of breast cancer information (19.14%). Table 1 illustrates all participant demographic details.

Table 1: Characteristics of 350 women who participated to the survey

Characteristics		n (%)
Age	20-30	120 (34.29)
	31-40	131 (37.43)
	41-50	99 (28.29)
Education	primary school	128 (36.57)
	secondary school	185 (52.86)
	college/university	37 (10.57)
economic status	middle class	123 (35.14)

	lower class	227 (64.86)
area of residence	Rural	156 (44.57)
	Urban	194 (55.43)
	Unemployed	113 (32.29)
employement status	self-employed	78 (22.29)
	private-employed	159 (45.43)
	health professionals	67 (19.14)
source of information	TV or radio	90 (25.71)
	social media	98 (28.00)
	friends or neighbours	95 (27.14)

The next area of the survey was aimed to explore participants' knowledge of breast cancer and the results are included in Table 2. It was fortunate that 85.14% of respondents had been aware that breast cancer is a severe disease, and correctly understood that breast cancer can actually be detected as early as possible (60.00%).

Regarding breast cancer risk factors, 61.43% of respondents perceived that genetic and history of cancer from family was a major factor contribute to breast cancer, followed by the use of oral contraceptive (44.57%), radiation exposure (31.43%), smoking habits (28.86%), and alcohol consumption (21.71%). On the issue of breast cancer symptoms, the percentages of those who answered correctly

for each item were as follow; 65.14% of respondents correctly identified that discharge from niple and colour changes can be considered as one of breast cancer symptom, 60.00% were aware of breast lump, 56.29% had knowledge of swelling of the breast, and 44.57% knew about the sign of fluid in the breast.

Participants also showed inadequate knowledge about breast screening. More than half of respondents (56.57%) ever heard about breast self-examination (BSE) and Mammography, while only 41.43% knew that mammography is one of screening method and only 38.57% knew about BSE. In addition, only 37.71% of respondents succesfully answered that BSE should be performed seven days after menstruation.

Table 2: Knowledge of breast cancers by domains

Domain	Knowledge items	n (%)
General	Breast cancer is a severe disease	298 (85.14)
	breast cancer can be detected as early as possible	210 (60.00)
risk factor	genetic and history of cancer from family	215 (61.43)
	use of oral contraceptive	156 (44.57)
	Radiation exposure	110 (31.43)
	Cigarette smoking	110 (28.86)
	Alcohol intake	76 (21.71)
symptoms	discharge from niple and color changes	228 (65.14)
	breast lump	210 (60.00)
	Swelling of the breast	197 (56.29)
	fluid in the breast	156 (44.57)
screening	ever heard about BSE and Mammography	198 (56.57)
	mammography as a screening method	145 (41.43)
	BSE as a screening method	135 (38.57)
	BSE should be performed seven days after menstruation	132 (37.71)

Participants showed a poor practice towards mammography and BSE illustrated in Figure 1. Only 26.86% of participant claimed that they regularly performed BSE. The similar response was found in the next finding where only 28.00% of participants stated that they

regularly performed mammography as detection method for breast cancer. Unfortunately, a vast majority of respondents (72.86%) confessed that they never performed any breast cancer screening program whether it was BSE or mammography method.
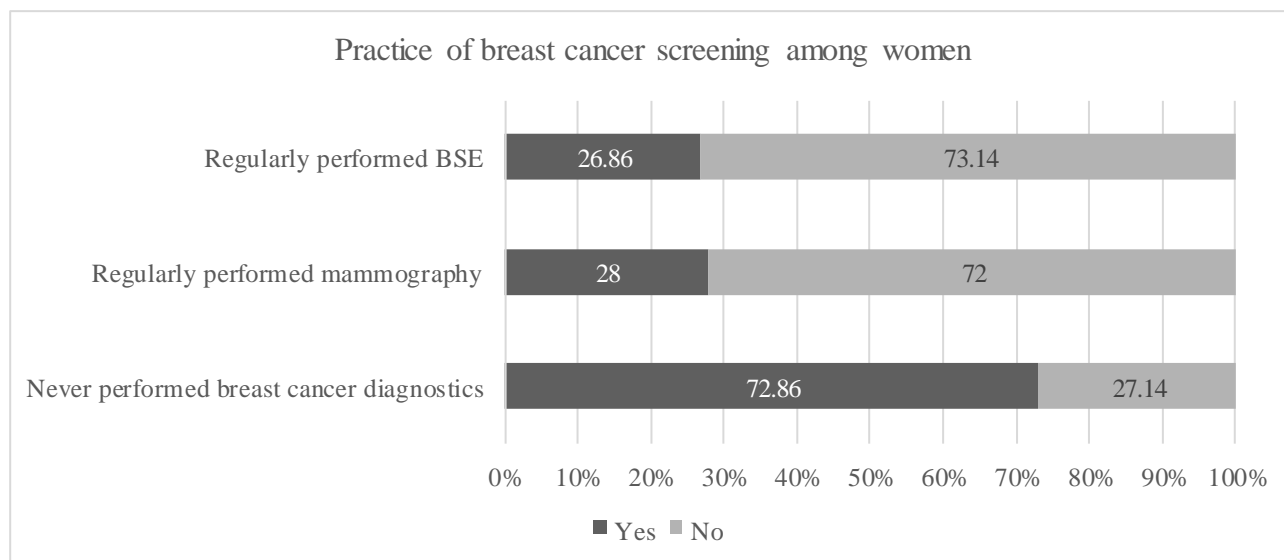
Figure 1: Practice of breast cancer screening among women

Discussion

Our study identified that women in Yogyakarta generally had poor awareness of breast-cancer-related information including risk factors and several symptoms. Although a large proportion of respondents claimed that they already knew about one of severe disease called breast cancer, many had poor knowledge and awareness on breast early detection programs.

Moreover, only 27.14% of respondents ever performed breast cancer diagnostics despite more than half of respondents had heard about BSE and mammography. These results were in line with another worldwide similar studies in Malaysia, Eastern China, Cameroon, Iran, and United Arab Emirates [8-12].

Moreover, previous similar studies in several local areas of Indonesia also supported the finding that awareness regarding breast cancer and breast screening in Indonesia is still insufficient [13-16]. Inadequate knowledge found in this study was mainly in the domain of risk factors. Participants awareness on the impact of radiation therapy in developing breast cancer was still less ideal.

It is important to know that women with younger age and had been performed radiation therapy to the chest for previous or another cancer reported to have a significantly higher risk of breast cancer [17,18], but radiation therapy would not increase the risk of breast cancer in women after 40 years old [1].

In addition, participants also failed to recognize that dietary factor can also affect the progression of breast cancer. Only 28.86% and 21.71% of respondents correctly identified that cigarette smoking and alcohol intake can increase breast cancer risk. Researches indicate that smoking may slightly increase the risk of breast cancer, particularly long-term, heavy smoking, and among women who start smoking before their first pregnancy [19, 20]. Exposure of cigarette smoke in seconhand smoke case also probably increase the risk especially when it was happening in childhood and in premenopausal breast cancer [21, 22].

Despite the mechanisms of alcohol in developing breast cancer risk that still dubious, alcohol possibly increase the risk indirectly by increasing estrogen and another hormone levels [23]. Thus, it is better to reduce or stop alcohol consumption in order to minimize the risk of breast cancer. Generally, more than half of respondents already recognized several symptoms related to breast cancer.

Respondents accomplished to identify several symptoms such as discharge from nipple and color changes, breast lump, and swelling of the breast. However, only less than half of respondents (44.57%) correctly identified that the sign of fluid in the breast is one of breast cancer symptoms. Although this symptom is categorized as uncommon symptom, fluid in the breast and some form of nipple discharge may manifest to a palpable breast mass or

abnormal mammogram [24]. A similar trend was found in other survey which highlighted respondents' insufficient knowledge about non-lump symptoms of breast cancer [8, 9]. These findings alarm us to strengthen all of the actions needed to improve public especially women awareness and knowledge about breast cancer and its symptoms since early self detection of breast cancer symptoms can reduce the risk of breast cancer death and increase treatment options [25]. Furthermore, not all of respondents ever heard about BSE and mammography as the examples of breast cancer screening method.

Especially for BSE, respondents tend to have a lower knowledge about it than expected. As the results of respondents' poor knowledge and awareness, majority of respondents (72.86%) confessed that they never performed any breast cancer diagnostics. This finding is supported by a systematic review carried in Nigeria that most of participant with low level of knowledge of clinical features and risk factors blamed the same for low level of screening performance [26]. Furthermore, lack of awareness about BSE technique and lack of training by personnel of healthcare have been identified as the barriers for BSE practice according to a study from Iran [27].

It was notable that early detection of breast cancer vary depending on a womans' age and include mammography, as well as magnetic resonance imaging (MRI) for women at high risk [1]. However, all women should become familiar with breast cancer screenings' potential benefits, limitation, and also harms. Performing monthly BSE as one of breast cancer screening method is no longer recommended by American Cancer Society, regardless, all women need to know and become aware with both the appearance and feel of their breast then report to their physician if any changes are found.

The results of this present study indicate that several actions or programs are fairly required in order to increase women knowledge and awareness about breast cancer in details. This study also highlight that only 19.14% of respondents claimed to gain information about breast cancer from health care professionals. Respondents tend to believe another source of information such as TV or radio (25.71%), social media (28.00%), and even from friends and neighbours (27.14%) aside from health

professionals. It was unfortunate since evidence has shown that interventions from health care professionals can be an effective way to improve knowledge, awareness, attitudes, and also screening practices for early detection of breast cancer among women [28]. Moreover, interventional training program on breast cancer and breast screening practice had been effective on improving knowledge levels among women towards high level of awareness [29].

Identifying followed by educating public about breast cancer associated risk factors are needed to correct individuals attitude and also lifestyle change [30]. However, in order to ensure that interventional programs would implement and affect effectively, subsequent assessment to measure the impact is also required periodically.

Nation- and state-wide breast cancer literacy programs are urgently needed to be implemented and developed so this nation will have the most effective strategy in reducing mortality and morbidity rates as the consequence of breast cancer. Active roles from health care professionals are highly important to promote several interventions related to breast cancer knowledge and awareness. Health care professionals should influence and make public especially women trust them as the main source of medical information since information from social media or another vague sources can possibly mislead public perceptions toward breast cancer.

This study has certain limitations and one of that is the number of sample we surveyed. Therefore, these findings may not be able to generalized the whole population or another setting of health care since this study was conducted only in a local area of Indonesia. The convenience sampling method used in this study might also result in bias. Lastly, the study is cross-sectional which only represent one point in time and do not report any change in knowledge, awareness, and also attitudes overtime.

Conclusion

Lack of knowledge and awareness regarding breast cancer and breast screening practice were found in the present study among women in Yogyakarta city. Thus, participants' low awareness about breast

cancer may become the barrier of poor breast screening practice such as mammography, BSE, and any other method depending on individuals needs and conditions. Active intervention from health care professionals are fairly needed to educate public especially women about breast cancer and its early detection screening methods in order to reduce breast cancer mortality and promote healthy habits as the start of breast cancer prevention.

Acknowledgement

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