PROCEEDING BOOK

THE 4th INTERNATIONAL CONFERENCE ON HEALTH SCIENCE 2017

“The Optimalization of Adolescent Health in The Era of SDGs”

INNA GARUDA HOTEL YOGYAKARTA, INDONESIA
November 5th, 2017

HEALTH POLYTECHNIC OF HEALTH MINISTRY
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FACTORS RELATED TO BREAST CANCER AMONG WOMEN IN YOGYAKARTA CITY PUBLIC HOSPITAL, INDONESIA

Tia Arsittasari, Dwiana Estiwidani, Nanik Setiyawati

Midwifery Department of Health
Polytechnic of Health Ministry Yogyakarta, Indonesia
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ABSTRACT

Breast cancer is a dangerous tumor which attacks the breast tissue and also the second largest cause cancer related deaths among women. In 2013, Yogyakarta became the province which had the highest prevalence about 2.4%. The data from the Health Minister of Yogyakarta showed that many cases of breast cancer happened to women and keep increasing from year to year in Yogyakarta Province. The purpose of this study was to find out the factors related to breast cancer among women in Yogyakarta City Public Hospital, Indonesia. This study was an analytical observational research with cross sectional design. The samples were collected by using purposive sampling with 94 respondents. The data were collected by using primer and secondary data with data collection technique. The data analysis was carried out by using Chi-Square Test. The result of the study showed that the factors which were related to breast cancer cases were age (p-value = 0.005), menarche age (p-value = 0.019), history of breastfeeding (p-value = 0.008), history of using hormonal birth control (p-value = 0.019) and genetical factor (p-value = 0.014). The conclusion of the study was that the factors which were related to breast cancer cases were age, menarche age, history of breastfeeding, history of using hormonal birth control and genetical factor.

Keywords: Breast Cancer, Age

INTRODUCTION

Cancer is one of the major causes of morbidity and mortality worldwide. According to the World Health Organization (WHO), in 2012 estimates there were 14 million new cancer cases and 8.2 million (58.57%) deaths from cancer. According to data from the Global Cancer Burden in the International Agency for Research on Cancer (IARC) in 2012 breast cancer was a disease with the highest percentage of new cases of cancer (after controlled by age), amounting to 43.3%, and the percentage of deaths (after controlled by age) from breast cancer by 12.9%. Breast cancer was one of the cancers with the highest prevalence in Indonesia in 2013, amounting to 0.5%. Yogyakarta province was a province that has the highest prevalence of breast cancer, which amounted to 2.4%.

Breast cancer is currently the second leading cause of death from cancer in women, after cervical cancer and is the most common cancer among them. Breast cancer could spread significantly and often do not cause symptoms. Breast cancer was a malignant tumor that attacks the breast tissue. Breast cancer prognosis depended on the growth rate. From the observation, most breast cancer patients already could not be helped because of late unrecognized and untreated.

According to Yogyakarta health office, in January 2017, the data obtained on Breast Cancer Cases between 2013 and 2016 in the province, there was yearly increase in cases. Based on gender, 99% more common in women. Based on the age group, many breast cancer cases occur in the age group 45-64 years. According to the City Health Office Yogyakarta in January 2017, the data obtained Communicable Diseases.
Surveillance Integrated Health Center Year 2013-2016 in the city of Yogyakarta saw an annual increase in cases of breast cancer.

Risk factors for breast cancer include age, reproductive factors (menarche age, early first pregnancy at an advanced age, low parity, lactation), endocrine factors (oral contraceptives, hormone replacement therapy, age > 75 years, with the density of the breast 75%, atypical hyperplasia), diet (consumption of alcohol, obesity) and genetic / family history (family members with breast cancer, family history of ovarian cancer).

The results showed factors associated with the incidence of breast cancer are obesity, age of first birth, history of breastfeeding, and menarche age. The risk factors that influence breast cancer incidence are menarche age, age of first birth, parity, history of breastfeeding, history of using hormonal birth control and family history of disease. The highest proportion of breast cancer patients are aged> 40 years, female, married and stage III. Of the 92 respondents who have breast cancer have breast cancer 92.4%> 30 years, 90.2% of respondents the number of children who have breast cancer 1-3 children, 67% menarche age <10 years and 44% suffer from breast cancer III.

Based on the results of preliminary studies conducted in Yogyakarta City Public Hospital in February 2017, the data obtained Number of Cases Inpatient and Outpatient Case Breast Cancer Year 2013-2016 for the years of 2013 there were 223 cases, in 2014 there were 287 cases, in 2015 there were 190 cases and in 2016 there were 248 cases. Based on these data, the study was conducted to factors related to breast cancer among women in Yogyakarta City Public Hospital, Indonesia.

METHOD

This study was conducted in Yogyakarta City Public Hospital in May 2017. This research is an observational analytic research using a cross-sectional design. The study population was all married women patients diagnosed with breast cancer at the Yogyakarta City Public Hospital in 2016 totaling 248. The sample was a married woman with breast cancer who meet the criteria in Yogyakarta City Public Hospital in 2016 who meet the inclusion and exclusion criteria. The sample size in this study were 94 respondents. Sampling of the population that is done by purposive sampling. The independent variables in this study were age, age of menarche, parity, history of breastfeeding, history of using hormonal birth control and family history. The dependent variable in this study were breast cancer. The data were collected by using primer and secondary data with data collection technique. The data analysis was carried out by using Chi-Square Test.

RESULTS

This study used secondary and primary data to the 94 respondents, using technique purposive sampling. Results of research conducted as follows:
1. Univariate Analysis

Table 1. Characteristics of Respondents

<table>
<thead>
<tr>
<th>No.</th>
<th>Factors</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Breast Cancer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage IV</td>
<td>5</td>
<td>5.3</td>
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<tr>
<td></td>
<td>Stage III</td>
<td>50</td>
<td>53.2</td>
</tr>
<tr>
<td></td>
<td>Stage II</td>
<td>27</td>
<td>28.7</td>
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<tr>
<td></td>
<td>Stage I</td>
<td>12</td>
<td>12.8</td>
</tr>
<tr>
<td></td>
<td>Total</td>
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<tr>
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<tr>
<td></td>
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<td></td>
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<td>100</td>
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<td>History of Using Hormonal Birth Control</td>
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<td></td>
<td>Total</td>
<td>94</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Secondary Data Yogyakarta City Public Hospital in 2016 and Primary

Based on table 1 data showed that the majority of respondents breast cancer patients with stage III of 50 respondents (53.2%), age risk (≥ 40 years) by 76 respondents (80.9%), menarche age risk (<12 years) with 49 respondents (52.1%), Parity no risk (P≥1) of 81 respondents (86.2%), history of breastfeeding risk (P0, P≥1 never breastfeeding) of 52 respondents (55.3%), history of using hormonal birth control risk (using hormonal birth control ≥ 5 years in a row) 60 respondents (63.8%) and family history no risk (no history of cancer) were 66 respondents (70.2%).
## Bivariate analysis

### Table 2. Bivariate Analysis

<table>
<thead>
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<th>Factors</th>
<th>IV</th>
<th>III</th>
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<th>I</th>
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<th>p-value</th>
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<tr>
<td>1</td>
<td>Age</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Risk</td>
<td>5</td>
<td>6.6</td>
<td>42</td>
<td>40.2</td>
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<td>0</td>
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<td>44.4</td>
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<td>16.7</td>
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<td>Total</td>
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<td>5.3</td>
<td>50</td>
<td>53.2</td>
<td>27</td>
<td>28.7</td>
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<tr>
<td>2</td>
<td>Menarche Age</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
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<td>44.4</td>
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Based on table 2 data showed that the results of Chi-square test breast cancer by the age variable obtained p-value = 0.005 (p <0.05), we can infer that there is a relationship between age and breast cancer. In the variables of menarche age obtained p-value = 0.019 (p <0.05), meaning that there is a relationship between the menarche age with breast cancer. Meanwhile, in the variables of parity obtained p-value = 0.354 (p >0.05), it means that there is no relationship between parity with breast cancer. The variables of history of breastfeeding obtained p-value = 0.008 (p <0.05), proves that there is a relationship between breastfeeding and breast cancer history. While in the variables of history of using hormonal birth control obtained p-value = 0.019 (p <0.05), we can conclude that there is a relationship between a history of using hormonal birth control and breast cancer. In the variables of family history variables obtained p-value = 0.014 (p <0.05), meaning that there is a relationship between a family history of breast cancer.

## DISCUSSION

1. Breast Cancer

   The results showed that the highest proportion of breast cancer in any related factors are at stage III. This is consistent with previous studies that show that the highest proportion of breast cancer patients are stage III (49%). Other previous study showed that patients with stage III occupy a percentage of 68.8% of the total...
Other previous studies showed that most who have stage III breast cancer by as many as 41 respondents (44.0%).

The majority of breast cancer patients come to the hospital for a check-up in stage III. This is because in the early stages of breast cancer, usually the patient does not feel pain or no signs at all. In the event of disruption of the breast, a woman initially paid little attention until the situation becomes serious. The highest proportion of stage III shows that a lack of information and awareness of the respondents for breast cancer early detection and treatment of the first symptoms is still very low.

2. Age

The results showed that the majority of respondents with age risk of breast cancer patients (≥ 40 years) by 76 respondents (80.9%). There is a relationship between age and the incidence of breast cancer (p-value = 0.005). This is consistent with results of previous studies that showed an increased risk of breast cancer at the age of 35-44 years (OR = 3.370; 95% CI = 1.390 to 8.170) and 45-54 years (OR = 3.690; 95% CI = 1.558 to 8.739). There are differences in the proportion of aged patients with breast cancer based on clinical stage (p = 0.015).

Breast cancer incidence increases rapidly at reproductive age and thereafter increased at a lower rate. Increasingly aged woman, the greater the likelihood of developing breast cancer. Age women are more often affected by breast cancer are over the age of 40 years. However, it does not mean women under 40 years of age may not be affected by breast cancer, only it happened more frequently. The average age of 40 (± 5) years, the ovaries of women is less receptive to the effects of FSH and LH. The effect of estrogen secretion decreases and fluctuates, so that became more frequent anovulatory menstrual disorders that cause some women in the years before menopause.

3. Menarche Age

The results showed that the majority of respondents with menarche age risk of breast cancer patients (<12 years) with 49 respondents (52.1%). There is a relationship between the menarche age with the incidence of breast cancer (p-value = 0.019). This is consistent with results of previous studies that showed that the menarche age <12 years (p = 0.031; OR = 3.492) had a significant relationship to the incidence of breast cancer in women. Age menarche early(<12 years) (OR = 2.638, 95% CI = 0.735 to 9.466) heightens the risk of breast cancer incidence. Menarche age <12 years associated with the incidence of breast cancer (p = 0.001; OR = 4.41; 95% CI: 1.33 to 14.63).

Menarche early or first menstruation at a relatively young age (<12 years) was associated with an increased risk of breast cancer. Menarche Early lead to exposure to the hormone estrogen becomes faster so that it can trigger the growth of cells in certain body parts are not normal. Menstrual early age associated with the duration of exposure to the hormones estrogen and progesterone in women that affects the tissues including breast tissue proliferation.

4. Parity

The results showed that the majority of respondents with parity no risk of breast cancer patients (P≥1) of 81 respondents (86.2%). There was no relationship between parity with the incidence of breast cancer (p-value = 0.354). This is not in accordance with the results of previous studies showing that parity nulliparous (OR = 4.353, 95% CI = 0.463 to 40.898) heightens the risk of breast cancer incidence.

Nulliparitas can increase the risk of developing breast cancer because of longer exposure to the hormone estrogen. High levels of the hormone estrogen during reproductive years of a woman, especially if it is not interrupted by hormonal
changes in pregnancy, increasing the chances of growth of cells that are genetically damaged and cause cancer.\textsuperscript{15} Nulliparous woman had 4.0 times greater risk than multiparous women for breast cancer (RR = 4.0).\textsuperscript{14} The difference in the results is due to differing criteria taken responder affected and not affected by breast cancer; and for respondents with fewer parity nulliparous (13.8\%) of the multiparous (86.2\%), so that the incidence of breast cancer in this study may be caused by factors other than parity.

5. History of Breastfeeding

The results showed that the majority of respondents with history of breastfeeding risk of breast cancer patients (P0, P≥1 never breastfeeding) of 52 respondents (55.3\%). There is a relationship between History of breastfeeding with the incidence of breast cancer (p-value = 0.008). This is consistent with results of previous studies that showed that a history of breastfeeding <4 month\textsuperscript{3} (p = 0.00; OR = 5.49; Cl = 2.05 to 14.74) can increase the risk of breast cancer.\textsuperscript{7} History is not breastfeeding (OR\textsuperscript{3} = 2.11; 95\% Cl = 0.364 to 12.320) heightens the risk of breast cancer incidence.\textsuperscript{7} Mothers who do not breastfeed associated with the incidence of breast cancer (the p = 0.002; OR = 4.24; 95\% CI: 1.22 to 14.76).\textsuperscript{17}

Women who are breastfeeding lowers cancer compared to women who did not breastfeed. The longer the period of breastfeeding, the greater the protective effect against cancer exists. This is due to a decrease in estrogen levels and secretion of carcinogenic substances during breastfeeding.\textsuperscript{3} Time breastfeed longer have a more positive effect in lowering the risk of breast cancer in which there is a decrease in estrogen and materials expenditure trigger cancer during breast feeding.\textsuperscript{3} Breastfeeding does not protect women from breast cancer but affects levels of estrogen in a woman's body.\textsuperscript{7}

6. History of Using Hormonal Birth Control

The results showed that the majority of respondents with history of using hormonal birth control risk of breast cancer patients (using hormonal birth control ≥ 5 years in a row) 60 respondents (63.8\%). There is a relationship between a history of using hormonal birth control with the incidence of breast cancer (p-value = 0.019). This is consistent with results of previous studies showing that the use of hormonal contraception ≥ 5 years (p = 0.028; OR = 3.266) had a significant relationship to the incidence of breast cancer in women.\textsuperscript{16} The use of hormonal contraceptives is a risk factor for breast cancer (OR = 1.146).\textsuperscript{16} Oral contraceptives role in increasing the risk of breast cancer in premenopausal women.\textsuperscript{3} Women who use oral contraceptives at high risk for breast cancer. The content of estrogen and progesterone in oral contraceptives would give the effect of excessive proliferation in the mammary gland.\textsuperscript{14} The use of oral contraceptives in the long term (> 5 years) cause the risk of developing breast cancer is on the rise.\textsuperscript{4} The use of hormonal contraceptives may cause increased exposure to estrogen in the body that can trigger abnormal cell growth in certain parts, such as the breast.\textsuperscript{16}

7. Family History

The results showed that the majority of respondents with family history no risk of breast cancer patients (no history of cancer) were 66 respondents (70.2\%). There is a relationship between a family history of breast cancer (p-value = 0.014). This is consistent with results of previous studies indicating that family history (OR = 6.938, 95\% Cl = 0.793 to 60.714) heightens the risk of breast cancer incidence.\textsuperscript{8} A family history of breast cancer increases the risk of breast cancer with OR = 8 (95\% Cl: 1.839 to 34.794).\textsuperscript{19}
History of cancer in the family is one of the risk factors of breast cancer. The most common risk factor is a history of breast cancer experienced by first-degree relatives of the mother. One of the main reasons for this risk is an inherited mutation in one of two genes, namely BRCA1 and BRCA2. Family history is an important component in the history of the patient to be implemented screening for breast cancer. There is an increased risk of malignancy in women whose families have breast cancer, the presence of mutations in several genes (BRCA1 and BRCA2).

CONCLUSIONS

Patients with breast cancer in Yogyakarta City Public Hospital in 2016 the majority of respondents breast cancer patients with stage III, age risk, menarche age risk, parity no risk, history of breastfeeding risk, history of using hormonal birth control risk and family history no risk. There is a relationship between the age, menarche age, history of breastfeeding, history of using hormonal birth control and family history of breast cancer occurrence. There was no association between parity with the incidence of breast cancer.

RECOMMENDATION

This study may provide information to health workers, especially midwives about the factors associated with the incidence of breast cancer such as age, menarche age, history of breastfeeding, history of using birth control hormonal and family history so that it can seek to improve health promotion and implementation of the BSE as early detection breast cancer in women and extension factors associated with the incidence of breast cancer, such as breast-feeding her baby at least 6 months and hormonal contraceptive use with the incidence of breast cancer. For further research this study may make reference, should use the study design case-control and by taking samples in larger quantities.

REFERENCES
