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### RESEARCH ARTICLE

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## Analysis the different of knowledge and history consumed fastfood junk food between mother breast cancer first stadium and last stadium at RSUD Dr Kanudjoso Djatiwibowo Balikpapan 2016

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### ABSTRACT

Breast cancer is a malignant and deadly disease for women. The high number deaths causes by breast cancer comes second after cerucal cancer, some of the risk factors of breast cancer are fast food or junk food and the lack of knowledge of the symptoms. The purpose of this study was to analyze the different of knowledge and history consumed fast food junk food between mother breast cancer first stadium and last stadium at Dr Kanudjoso Djatiwibowo Hospital, Balikpapan. The approach of this research was *restrospective*. The respondents consisted of 45 people individuals by using accidental sample technique. The data were obtained using questionnaire, then analyzed using Chi square test and logistic regression test. The result with minimum knowledge were 25 (55.6%), who consumed fast food were 34 (75.6%), also there was a correlation between knowledge and breast cancer with p-value of 0.006. Based on the regression test, there was correlation between knowledge and breast cancer, with p-value of 0.04; while the p-value of the correlation between fast food and breast cancer was 0.264. The conclusion that the dominant factors of breast cancer was knowledge. There fore, health professionals, the agencies to give a socialization, giving information about breast health, to consume healthy food for our body as prevention of breast cancer.

**Keywords:** knowledge; breast cancer

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### INTRODUCTION

#### Background

According to WHO, the number of cancer patients in the world is increasing by around 7 million per year and two-thirds of them come from developing countries such as Southeast Asia. If it is not controlled, it is estimated that 26 million people will suffer from cancer and 17 million die from cancer in 2030<sup>(1)</sup>. The prevalence of breast cancer reaches 23% of all malignant events where 14% of them cause death. In the United States, there were 238,130 women diagnosed with breast cancer and 39,520 women died from it.<sup>(2)</sup>

Breast cancer is a malignant tumor most often found in women aged 50 years and over, while the 6% occurs in women aged less than 40 years. According to a report from New South Wales Breast Cancer Institute, fibroadenomas generally around 15% occur in women over 20 years and less than 5% occur at the age above 50 years. Based on research conducted by<sup>(3)</sup>, the results of the study found 144 cases of fibroadenoma in women which were most commonly found in women aged under 30 years (79.90%), 21-25 years (41.70%), and 16-20 years (25.70%)<sup>(4)</sup>.

Based on data from Basic Health Research in Africa and Southeast Asia including Indonesia, breast cancer ranked second highest (0.05%) after cervical cancer (0.08%)<sup>(5)</sup>. According to data from the Dharmais Cancer Hospital in 2010 based on the number of breast cancer patients who came, stage I and II were 13.42%,

stage III was 17% and stage IV was 29.98%<sup>(6)</sup>. Based on data in 2011, the highest number of inpatients with a diagnosis of breast cancer in East Kalimantan was in Balikpapan as many as 616 patients out of 639,031 people, in Bontang as many as 185 patients out of 149,230 people and in Samarinda as many as 174 patients out of 874,972 people<sup>(7)</sup>.

The high number of deaths from breast cancer is caused by several factors consisting of external factors and internal factors. External factors are low knowledge about breast cancer, lifestyle, processed foods containing preservatives such as fast food/ junk food and high-fat food, excessive diet, alcohol consumption, beauty treatment radiation, hormonal treatment such as the use of hormonal birth control methods such as injections and pills, pesticides and environmental pollution (air pollution), and exposure from the workplace (exposure to electromagnetic waves). Internal factors include genetic factors that are family lineages. Breast cancer due to genetic abnormalities is found at 5-10% and usually the ability of hormones in the body metabolizes very quickly. Therefore, it is very important for women to recognize their family history<sup>(8)</sup>.

According<sup>(9)</sup>, the trigger factors for breast cancer are lifestyle, family history, environment, physical factors, cancer-triggering foods, genetics, income and knowledge. Lack of public knowledge and the existence of erroneous myths about breast cancer causes delay in handling breast cancer. To overcome this, providing appropriate information about breast cancer using promotional and preventive methods in implementation is a strategic step and effort to increase public health knowledge so that women are able to detect breast cancer early<sup>(10)</sup>.

Research at the University of Washington DC<sup>2</sup> shows that people who consume fast food/ junk food have higher metabolic phthalates than people who do not consume them. Phthalates are associated with reproductive problems for adults and are associated with low IQ in children<sup>(11)</sup>.

Based on the results of the Medical Record from the Oncology Poly at Dr. Kanudjoso Djatiwibowo Hospital, there were 55 cases of breast cancer in 2014, 65 cases in 2015, 420 cases in 2016 from January to June; 47 cases were treated patients, 373 cases were control patients, and 75 cases were patients who were controlled at the Oncology Poly in July 2016 including those aged 20 years and over (13%).

Based on interviews conducted in July 2016 on 15 people with breast cancer, 5 sufferers did not know about breast cancer and its prevention, 3 sufferers were using hormonal birth control methods, 4 sufferers were affected by their favorite consuming fast food/ junk food, and 3 sufferers affected by other factors.

The formulation research problem is the analysis of differences in knowledge and history of consumption of fast food/ junk food between women with early-stage and end-stage breast cancer in Dr. Kanudjoso Djatiwibowo Hospital of Balikpapan in 2016.

## Purpose

Moreover, the general objective of the research is to know the analysis of differences in knowledge and history of fast food/ junk food consumption between women with early-stage and end-stage breast cancer in Dr. Kanudjoso Djatiwibowo Hospital of Balikpapan in 2016.

## METHODS

### Design and Respondents

This study used a case control design that was by identifying knowledge about fast food in women who had late-stage breast cancer later compared with mothers who had end-stage breast cancer. The research population involved patients aged 20-55 years who were treated at the Oncology Poly of Dr. Kanudjoso Djatiwibowo Hospital of Balikpapan with breast cancer problems. The sampling was carried out by using incidental sampling technique, with the sample size of 45 respondents.

### Variables, Data Collection and Analysis

The independent variable or exposure factor in this study were the knowledge and history of fast food consumption while the dependent variable or the assessed results was the classification of breast cancer stage.

The research instrument was a questionnaire used by providing and distributing a set of questions or written statements made based on indicators of a variable<sup>(13)</sup>. In addition, this study used bivariate analyses with a Chi square test. Furthermore, the study continued with multivariate analysis to see or strengthen the independent variables with categorical dichotomous variables using logistic regression analysis.

## RESULTS

### Respondent Characteristics

The characteristics of the research respondents were age and educational background. Moreover, the independent variable were the knowledge and history of fast food/ junk food consumption while the dependent variable was the classification of breast cancer stage.

Based on Table 2 below, it is found that most respondents aged 40-55 years were 38 people (84.4%) and the least respondents aged 20-35 years were 7 people (15.6%). The highest educational background of respondents was Junior High School as many as 17 people (37.8%), Senior High School education as many as 13 people (28.8%), and the least was Elementary School as many as 7 people (15.6%), College as many as 8 people (17.8%).

Table 1. The Distribution of characteristics of patients based on age and educational background

Number	Characteristics of patients	Frequency	Percentage
1	Age		
	• 20 - 35 years	7	15.6
	• 40 – 55 years	38	84.4
	Total	45	100
2	Educational		
	• Elementary school	7	15.6
	• Junior high school	17	37.8
	• Senior high school	13	28.8
	• College	8	17.8
Total	45	100	

### Descriptive Analysis

Table 2. Distribution of knowledge, history of fast food / junk food consumption and stage of breast cancer

Number	Variables	Frequency	Percentage
1	Knowledge		
	• Good	20	44.4
	• Poor	25	55.6
	Total	45	100
2	Fast Food		
	• Like	34	75.6
	• Dislike	11	24.4
	Total	45	100
3	Breast Cancer		
	• Early-Stage (I-II)	27	60.0
	• End-Stage (III-IV)	18	40.0
	Total	45	100

Based on table 2, it was found that the majority of respondents' knowledge was 'poor' as many as 25 people (55.6%) and the respondents' knowledge was 'good' as many as 20 people (44.4%). The majority of respondents who like fast food/ junk food were 34 people (75.6%) and respondents who do not like it were 11 people (24.4%). Meanwhile, respondents in the classification of end-stage breast cancer (III-IV) were 18 people (40.0%) and respondents in the classification of early-stage breast cancer (I-II) were 27 people (60.0%).

### Bivariate Analysis Results

After the descriptive analysis was carried out, the next step was to conduct a bivariate analysis to determine the correlation between knowledge and the stage of breast cancer. The statistical test in this study was carried out using the Chi square test. To see the extent of the correlation between exposure and the risk of occurrence, the odds ratio (OR) was used with a confidence interval (CI) of 95%.

Table 3. The results of bivariate analysis

Variables	Breast cancer				Total		p-value	OR
	Early-stage	%	End-stage	%	n	%		
Knowledge								
• Good	17	85.0	3	15.0	20	100	0.006	8.500
• Poor	10	40.0	15	16.0	25	100		
Total	27		18		45			
Fast food								
• Like	17	50.0	17	50.0	34	100	0.04	10.000
• Dislike	10	90.0	1	9.1	11	100		
Total	27		18		45			

Based on Table 3, the knowledge column shows that 25 respondents had poor knowledge and had the risk of end-stage breast cancer as much as 60.0%. Meanwhile, 20 respondents had good knowledge and had the risk of early-stage breast cancer as much as 85.0%. After the statistical test was carried out using the Chi-square test with a confidence level of 95%, it obtained a p-value of 0.006 which means  $p < 0.05$ . Thus, there was a correlation between knowledge and the stage of breast cancer in women aged 20-55 years.

The OR of the correlation between knowledge and breast cancer was 0.85, 95% CI = (1.96-3.67). Practically and statistically, it showed a meaningful correlation. Respondents who have poor knowledge have a 0.85 times greater chance of developing end-stage breast cancer compared to respondents who have good knowledge.

It also shows that 34 respondents who like to eat fast food/ junk food and had the risk of end-stage breast cancer were 50.0%. Meanwhile, 11 respondents who did not like to eat fast food/ junk food and had the risk of early-stage breast cancer were 90.0%. After the statistical test was carried out using the Chi-square test and the confidence level of 95%, it obtained p-value of 0.04 which means that  $p < 0.05$ . Thus, there was a correlation between junk food/ fast food consumption and the stage of breast cancer in women aged 20-55 years.

The OR of the correlation between fast food/ junk food and breast cancer resulted was 0.100, 95% CI = (1.15-8.69). Respondents who like fast food/ junk food have a chance of 0.100 times to experience end-stage and early-stage breast cancer compared to respondents who do not like fast food/ junk food.

### The Results of Logistic Regression Analysis

Multivariate analysis test was carried out if the results of the bivariate variable analysis had a significant correlation to obtain p-value = 0.003 (p-value <0.05) which means that it could be continued to multivariate test.

Table 4. The results of the logistic regression analysis

Variable	Model		Exp (B)	p-value
	OR	95 %CI	1.500%	
Knowledge Good Poor	56%	1.079 – 26.358)	5.332%	0.04
Fast food Like Dislike	1.59%	(0.360–41.358)	3.883%	0.264

### Model Analysis

Model 1 looks at the correlation between the independent variables (knowledge and history of fast food consumption) and the dependent variable (breast cancer). The results of statistical test analysis showed a significant correlation between knowledge and the occurrence of breast cancer in which the p-value = 0.04 which means that it is smaller p <0.05 and the results of the analysis data obtain OR = (5.332 – 1.500)/ 1.500 = 2.56%, 95% CI = 1.079 - 26.358. It is concluded that respondents, who have good knowledge, have opportunities for early-stage breast cancer 2.56 times greater than the respondents, who have poor knowledge. The correlation between the history of fast food/ junk food consumption and the occurrence of early-stage and end-stage breast cancer shows that there is no meaningful correlation where p-value > 0.05 with the value of p = 0.264 and the results of analysis data obtain OR = (3.883 - 1.500)/ 1.500 = 1.59%, 95% CI = 0.360 - 41.906. Thus, fast food variable is a risk factor. Meanwhile, knowledge variable has greater opportunity to get the risk of breast cancer than fast food.

## DISCUSSION

### Breast Cancer

The results showed that most respondents were in the early-stage breast cancer (I-II) as many as 27 respondents (60.0%) and the least were in end-stage breast cancer (III-IV) as many as 18 respondents (40.0%). It means that there are still many respondents who do not know and are aware of the early signs and symptoms of breast cancer. Clinical symptoms of breast cancer at an early stage do not cause pain but cause injury. If it is touched, we will feel a lump in which the shape and size of the breast is different from before<sup>(14)</sup>. Early detection is an important step to find out normal or abnormal breast forms; i.e. whether or not there is a change in size by self-examination<sup>(15)</sup>. If cancer cells can be detected early, treatment and healing will be better. However, if it is not treated immediately, the cancer cells will develop into end-stage (III-IV). Data from the Indonesian Cancer Foundation in the last five years stated that the incidence of breast cancer ranked first as much as 32% of the total number of cancer cases. There are 40% of breast cancer patients treated at an early stage and 30% of cancer patients detected at a local end stage, and 30% of cancer patients detected by metastasis<sup>(16)</sup>. Thus, knowing breast cancer early is very important for healing and efforts to handle and prevent it in the right and fast ways. In addition, breast cancer treatment will have a higher percentage of recovery<sup>(17)</sup>.

The results of the study found that 18 respondents (40%) experienced an end stage (III-IV) in which cancer cells had metastasized or further spread the body's tissues, our bodies have a risk of breast cancer. Until

now, the cause has not been known with certainty. However, the possibility of this cancer can be derived from one of the causes, including genetic/ hereditary, age, gender, race and so forth. Based on the results of the study, there were many respondents aged 40 - 55 years experiencing breast cancer as many as 38 people (84.4%). At the age of 39 and above, the level of vulnerability increases to be more at risk of getting the disease and it increases as a person get older, the decline in the immune system is often the case that people will be easily affected by one of them breast cancer. The more the age increases, the higher the stage of breast cancer and the more severe the condition that the sufferer will experience<sup>(18)</sup>. The majority of women with breast cancer were aged 41-55 years as many as 29 people (58.0%) with stage III as many as 15 people (44.1%) and had a high risk of nullipara and grand multiparity. In this case, there is a correlation between age, parity, and stage of breast cancer with a p-value = 0.000<sup>(19)</sup>. The older the age of a woman, the more severe the stage of breast cancer that she suffers. Conversely, the younger the age of a woman, the lighter the stage of breast cancer that she suffers.

### **Correlation of Differences in Knowledge on Women with Early-Stage and End-Stage Breast Cancer**

The results showed that knowledge and occurrence of breast cancer have a significant correlation with a significance level of  $p = 0.006$  ( $p < 0.05$ ). It obtains an OR = 0.85 which means that respondents who have poor knowledge have a chance of 0.85 times greater risk for end-stage breast cancer compared to respondents who have good knowledge. Respondents who have good knowledge have a risk of 0.85 times greater risk of early-stage breast cancer compared to respondents who have poor knowledge. It means that respondents who have poor knowledge are more at risk of developing breast cancer compared with the respondents who have good knowledge even though there are other risk factors that affect it. The risk factors that trigger breast cancer consist of lifestyle, hereditary, genetic, environmental, knowledge, physical factors, fast food/ junk food and socio-economic status<sup>(9)</sup>. This is in line with the research conducted by<sup>(20)</sup>. The impact of consuming fast food is to increase cholesterol & calories, animal protein, addiction, cancer causes and high addictive substances and reduce potassium intake.

Furthermore, the results of the study found that 25 respondents (55.6%) have poor knowledge. Thus, poor knowledge greatly influences the understanding and lack of proper information acquisition, in which increasingly lacks knowledge, the greater the risk of breast cancer and the better the respondent's knowledge of appropriate information about breast cancer, the better the understanding. Knowledge is the result of curiosity and this happens after people have sensed certain objects. Knowledge or cognitive is a very important domain to shape one's actions<sup>(21)</sup>. Action is a real act by doing or practicing what is known or addressed (considered good); for instance, by doing a self-breast examination. This is the initial way to detect and determine whether or not there is lump in the breast and also one way to prevent breast cancer. In addition, it is also important to share experiences and knowledge with other people who are considered important such as families from the mass media that are sources of knowledge information. Found a correlation between knowledge about breast cancer and conscious action with significant results ( $p$ -value 0.000  $< 0.05$ ) and a correlation of 0.873%. Thus, the knowledge of respondents who are good about breast cancer can affect the direct effect of taking immediate action so that breast cancer does not occur. In addition, it helps build awareness of others to do so than respondents who have poor knowledge<sup>(22)</sup>.

### **Correlation of History of Fast Food/ Junk Food Consumption on Women with Early-Stage and End-Stage Breast Cancer**

The results of the calculation of statistical test analysis show that fast food and the occurrence of breast cancer have a significant correlation with a significant level of  $p = 0.040$  ( $p < 0.05$ ) The results of an analysis of the Odd ratio (OR) showed 0.100 meaning that respondents who like to consume fast food have a risk of developing late-stage and early-stage breast cancer than those who don't like fast food Based on the researchers' assumptions, this is possible because most respondents do not know and understand what foods are right and healthy for consumption. They also have the habit of consuming fast food/ junk food such as burgers, pizza, instant noodles, fried chicken and so on with good taste and a fast process without knowing the negative effects of health that can lead to breast cancer. In addition, fast food is practical. Currently, most people are preoccupied with activities outside the home so there is no time to prepare healthy food for consumption. According to WHO<sup>(23)</sup>, there are 10 classes of fast food that are harmful to health which consist of fried, canned, and pickled foods, processed meat, processed cheese, instant noodles, toasted or baked foods, dried and frozen sweets (ice cream). Fast food in addition to containing nutrients needed by the body most also contain additional ingredients such as preservatives, sweeteners, colorings, flavorings that are suspected as carcinogenic ingredients in a certain amount in the human body can potentially caused. Respondents who have less knowledge about fast food are thought to consume more fast food so that the amount of additive that

accumulates in the body has the potential to caused cancer. Mothers who suffer from early-stage cancer do not had good knowledge about the treatment and treatment of breast cancer, so there were an increase in the initial stage to the final stage. Thus, if someone often consumes it in large quantities, he/ she will be at risk of suffering from many diseases such as stroke, high blood pressure, heart disease and cancer. The negative effects of fast food also include heart attack, addiction, obesity, breast cancer, diabetes and high blood pressure<sup>(24)</sup>. Thus, respondents who like to consume fast food can get the risk of direct effects of early-stage and end-stage breast cancer than those who do not like to consume fast food.

### **Regression Analysis Test Results of Differences in Knowledge and History of Fast Food/ Junk Food Consumption on Breast Cancer**

The results of the analysis showed a significant correlation between knowledge and the occurrence of breast cancer with a significant level of  $p = 0.040$  ( $p < 0.05$ ). It means that the respondents' knowledge of breast cancer is good because it is affected by a lot of information they get. In addition, the majority of respondents' educational backgrounds are middle to upper so that many respondents already know about it but their understanding is not deep. Without good knowledge and understanding, respondents could be trapped in wrong opinions about breast cancer so that it causes late handling. In addition, the researchers assumed that respondents considered breast cancer to be a malignant disease and had to be removed and the treatment needed to be quite expensive. Thus, patients delay going to health services and choosing to seek alternative treatment. Well-informed people will strive for abilities and apply their knowledge in daily life<sup>(21)</sup>.

The results of the analysis showed a non-significant correlation between the history of fast food consumption and the occurrence of breast cancer with a significant level of  $p = 0.264$  ( $p > 0.05$ ). It means that the correlation between fast food to respondents affected by breast cancer is not always existing. However, we should be able to analyze and choose the right and healthy foods. We need to make a healthy lifestyle and consume healthy food in order to balance both. In addition, there are other factors, one of which is reproductive factors that may be the cause of breast cancer cells in addition to the use of hormones, especially the estrogenhormone. Women, who routinely get hormone therapy, have a higher risk of breast cancer. Meanwhile, fibrocystic disease, ionization radiation, and obesity play an important role as a cause of breast cancer in women<sup>(25)</sup>.

### **CONCLUSION**

Patients with end-stage cancer had the knowledge to consume fast food were less good than early-stage cancer sufferers

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