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--
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12 April 2022 19:56

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Mohon lengkapi etik penelitian dan nomor suratnya

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--
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Terima kasih. Wassalamualaikum. Wr. Wb.

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Breast Cancer Risk Prevention Model (RICANDRA) to Determine the Risk Factors Associated with the Incidence of Breast Cancer in Women of Childbearing Age in Lampung Province

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Abstract

Breast cancer in Indonesia is at the top of the list that occurs in women. Most breast cancer conditions are known to be in an advanced stage. Detection at this advanced stage has a very poor prognosis because cancer cells have spread more widely and faster than when cells were detected in an early stage. There was an increase in the number of breast cancer sufferers, both hospitalized and outpatient in RSUDAM. The objectives of this study are to determine the risk factors associated with the incidence of breast cancer in women of childbearing age in Lampung Province and to develop a breast cancer risk prevention model (RICANDRA). This type of research is quantitative with a cross-sectional design. This research was conducted from March to December 2019 in Lampung Province. The target of this study was all women of childbearing age, a sample of 458 women of childbearing age with purposive sampling. The objects taken are

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A B S T R A C T

Breast cancer in Indonesia is at the top of the list that occurs in women. Most breast cancer conditions are known to be in an advanced stage. Detection at this advanced stage has a very poor prognosis, because at this stage cancer cells have spread more widely and faster than when cells were detected in an early stage. Objectives of this study to determine the risk factors associated with the incidence of breast cancer in women of childbearing age in Lampung Province and to develop a breast cancer risk prevention model (RICANDRA). This type of research is quantitative with a cross sectional design. This research was conducted from March to December 2019 in Lampung Province. The target of this study were all women of childbearing age, a sample of 458 women of childbearing age with purposive sampling. The objects taken are advanced age, first child born at the age of > 30 years, close family ties/hereditary, history of breast tumor, previous diagnosis, early menstruation, late menopause, use of hormones for menopausal symptoms, exposure to radiation, history of cancer, use of contraceptives hormones, obesity and stress. Collecting data using checklist sheets and questionnaires. Data analysis was univariate, bivariate (chi square) and multivariate. A total of 150 (32.8%) respondents were in the high-risk category and as many as 308 (67.2%) respondents were in the alert category. The results showed that the risk factors that influence breast cancer based on bivariate analysis were advanced age (OR = 5.869; 95% CI: 3.831-8.991; p = 0.000), the first child was born at the age of > 30 years (OR = 2.756; 95% CI : 1.8414.125; p = 0.000), close family ties/hereditary (OR = 3.932; 95% CI : 2.607-5.932; p = 0.000), history of breast tumors (OR = 1.629; 95% CI : 1.100-2.413; p = 0.019), Prior diagnosis (OR = 1.672; 95% CI: 1.086-2.576; p =

0.025), Early menstruation (OR = 4.174; 95% CI: 2.761-6.309; p = 0.000), Menopause (OR = 4.696; 95% CI : 3.0917.133; p = 0.000), Hormone use in menopausal symptoms (OR = 2.478; 95% CI: 1.661-3.698; p = 0.000), Exposure to radiation (OR = 7.213; 95% CI: 4.661-11.162 ; p = 0.000), had a history of cancer (OR = 2.226; 95% CI: 1.495-3.315; p = 0.000), used hormonal contraception (OR = 2.264; 95% CI: 1.384-3.705; p = 0.001), obesity (OR = 1.825; 95% CI: 1.223-2.725; p = 0.000), stress (OR = 3.126; 95% CI: 2,086-4,685; p = 0.00), smoking (OR = 1.611; 95% CI: 1.040-2.495; p = 0.042), breastfeeding (OR = 2.385; 95% CI: 1.601-3.552; p = 0.000), and alcohol consumption (OR = 1.711; 95% CI: 1.053-2.778; p = 0.040). The magnitude of the risk of breast cancer based on the probability of the logistic function is obtained by the magnitude of the risk of 98.5% wus experiencing breast cancer and if the risk can be avoided then only 1.5% will experience breast cancer. The Ministry of Health can facilitate regulation on efforts to accelerate efforts to reduce the incidence of breast cancer through making referral designs by strengthening human resources, infrastructure, procedures, or operational methods that can be easily applied to all health workers at the primary level. For women of childbearing age, they must increase their knowledge by participating in activities that can increase knowledge such as mother class activities, reading or viewing pictures in books, so that WUS knows the risks that may occur in women of childbearing age.

INTRODUCTION

Cancer is a disease caused by abnormal growth of body tissue cells into cancer cells. When a number of cells in the breast grow and develop uncontrollably, this is called breast cancer. These cells can attack surrounding tissues and spread throughout the body (Kemenkes, 2015). Breast cancer is the most common cancer experienced by women in 140 of 184 countries worldwide with a mortality rate of 522,000 in 2012 (Society, 2013).

The prevalence of breast cancer has been ranked the highest in the world which occurs in women, followed by cervical cancer and colon cancer. In Indonesia alone, breast cancer is at the top of the list that occurs in women. Most breast cancer conditions are known to be in an advanced stage. Detection in this advanced stage has a very poor prognosis, because at this stage cancer cells have spread more widely and faster than when cells were detected in an early stage (Muhimmah, 2016).

Breast cancer is the second most common cancer in the world and is the most common cancer among women with an estimated 1.67 million cases. Starting from 27/100,000 cases in Central Africa and East Asia, 92/100,000 cases in North America (Ministry of Health, 2015). Early detection through breast self-examination is still rarely done so that patients do not realize their illness and are late for treatment (Zahid Ali Memon, 2015).

The results of the study stated that 65.45% of patients delayed the examination because they did not know if the lump in their breast was malignant (Charate, 2016). This can be caused by the early symptoms of breast cancer that are not so clear, such as a lump in the breast that does not feel pain, so the patient ignores complaints and delays consulting until the complaints they experience worsen or new complaints appear (Keles, Ali & Keles, 2013). After having an examination and being diagnosed with cancer, sufferers are often afraid to take standard medical treatment for fear of surgery and the side effects of standard medical treatment such as chemotherapy (Zahid Ali Memon, 2015). According to research by Djatmiko et al., as many as 23.64% of patients delay treatment because of fear.

Data from the Health Office of Lampung Province, cancer patients who were outpatient and inpatient at hospitals in Lampung Province during 2014 there were 383 cases of cervical cancer and 1,119 breast cancer (Saktiyanto, 2015) from 2015 to 2017 there was an increase in the number of breast cancer patients. both inpatients and outpatients at RSUDAM, where in inpatients in 2015 there were 1033 breast cancer patients, in 2016 there were 1286 breast cancer patients and in 2017 there were 1476 breast cancer patients. In the outpatient unit of RSUDAM in 2015 there were 106 breast cancer patients, in 2016 there were 157 breast cancer patients and in 2017 there were 187 breast cancer patients (RSUDAM Medical Record, 2017).

Until now there has not been found definitive data that is the main cause of tumor / breast cancer. The cause of breast tumors/cancer is thought to be due to a complex interaction of many factors (Buckman R, 2010). Several factors that increase the risk of breast tumor/cancer are old age, early menarche (first menstruation), older age at menopause, older age when first giving birth, never been pregnant, family history of breast cancer (especially mother, sister).), a history of suffering from benign breast tumors, consuming hormonal contraceptive drugs in the long term, consuming alcohol and radiation

exposure to the breast, especially during the period of breast formation (Prawirohardjo S, 2016). Several literature reviews state that hormonal use, obesity, alcohol consumption, first pregnancy in old age, fat intake, especially saturated fat are associated with an increased risk of breast cancer (Kumar V, Cotran RS, 2013). From the description above, researchers conducted a study to determine the risk factor associated with the incidence of breast cancer in women of childbearing age in Lampung Province by using the breast cancer risk prevention model (RICANDRA).

METHOD

This type of research is quantitative with a cross sectional design. Research respondents were 458 women of childbearing age who came to a midwifery clinic in Lampung Province and had met the specified inclusion and exclusion criteria. The number of respondents was obtained from the calculation of the Lemeshow formula. The sample was obtained by purposive sampling technique.
The inclusion criteria set were women who were willing to be respondents, WUS who did an examination at the obstetrics polyclinic or KIA/KB room, the medical record history had demographic data and complete data, obstetric history, health status and history of illnesses suffered which were recorded and documented. The mother/respondent is in the province of Lampung. Respondents who have full awareness and are women of childbearing age > 15 years. While the exclusion criteria are not willing to be a respondent. This research was conducted an ethical review at the Tanjungkarang Health Polytechnic and was declared ethically worthy with certificate number 238/EA/KEPK-TJK/VIII/2019.
The objects taken are advanced age, first child born at the age of > 30 years, close family ties/hereditary, history of breast tumor, previous diagnosis, early menstruation, late menopause, use of hormones for menopausal symptoms, exposure to radiation, history of cancer, use of contraceptives hormones, obesity and stress. Collecting data using a checklist and questionnaire to determine the relationship between each independent variable and the incidence of breast cancer in women of childbearing age, then the most influential variables were tested using logistic regression test. With data analysis univariate, bivariate (chi square) and multivariate.

RESULT AND DISCUSSION

Based on the research results, it is known that from 458 respondents, 150 (32.8%) respondents are in the high risk category and as many as 308 (67.2%) respondents are in the alert category. A total of 298 (65.1%) respondents were of no risk age, as many as 285 (62.2%) respondents gave birth to their first child at the age of < 30 years, as many as 269 (58.7%) respondents had no heredity, as many as 245 953.5%0 respondents had no history of breast tumors, 305 (66.6%) respondents had no history of previous diagnosis, 270 (59.0%) respondents with age at menarche were not at risk, 266 (58.1%) respondents in the age category of menopause are not at risk, as many as 278 (60.7%) respondents do not use hormones, as many as 272 (59.4%) respondents are not exposed to radiation, as many as 244 (53.3%) respondents have no history of cancer, as many as 291 (63.5%) respondents with body weight BMI, as many as 271 (59.2%) respondents were not stressed, as many as 343 (74.9%) respondents did not smoke, as many as 374 (81.7%) respondents did not consume alcohol, as many as 337 (73.6%) respondents using hormonal contraception and as many as 261 (57.0%) respondents breastfeeding 6 months.

Table 1
Frequency Distribution of Breast Cancer Risk Factors

VARIABLE/ CATEGORI	FREQUENCY	PERCENT
Risk Factors High		
Risk	150	32,8
Alert	308	67,2
Age		
At risk	160	34,9
No Risk	298	65,1
First Child Risk		
	173	37,8
No Risk	285	62,2
Descendants Have a		
History	189	41,3
No History	269	58,7

History Of Breast Have a history	213	46,5
No History	245	53,5
Diagnosis Previous Have a history	153	33,4
No History	305	66,6
Menarche Age Risk	188	41
No Risk	270	59
Menopause Risk	184	40,2
No Risk	266	58,4
Hormone Users There Are	180	39,3
No	278	60,7
Exposed To Radiation Exposed	186	40,6
No Exposed	272	59,4
History I Cancer There Are	214	46,7
No	244	53,3
Obesity > IMT	290	63,3
≤ IMT	168	36,7
Stres stres	187	40,8
No stres	271	59,2
Smoking Smoking	115	25,1
No Smoking	343	74,9
Alcohol Consumption Alcohol Consumption	84	18,3
No Alcohol Consumption	374	81,7
Users Of Hormonal Contraceptives Hormonal	337	73,6
Not Hormonal	121	26,4
Breastfeeding		
Breastfeeding < 6 Month	197	43
Breastfeeding ≥6 Month	261	57
Total	458	100

Based on table 2. In the Age variable, the statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between age and breast cancer risk with an OR5,869 value meaning that respondents with age at risk have a 5.9 times greater chance have breast cancer when compared with respondents with age who are not at risk.

Based on table 2. In the first child variable, the statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between age when the first child was born with the risk of breast cancer with a value of OR2.756 meaning respondents with age at risk have a chance of 2 7 times more likely to develop breast cancer when compared to respondents with age when their first child was born without risk.

Based on table 2. In the hereditary history variable, the statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between heredity and the risk of breast cancer with an OR value of 3.932 which means that respondents with a history of heredity have 3.9 times more chance had breast cancer when compared to respondents with no breast cancer offspring.

Based on table 2. In the variable History of breast tumors, the results of statistical tests obtained p-value = 0.019 which means <α, it can be concluded that there is a relationship between a history of breast tumors and the risk of breast cancer with an OR value of 1.6 means that respondents with a history of breast tumors have a 1.6 times greater chance of having breast cancer when compared to respondents with no history of breast tumors.

Based on table 2. In the history of diagnostic variables statistical test results obtained p-value = 0.0025 which means <α, it can be concluded that there is a relationship between previous diagnoses and breast cancer risk with an OR value of 1.672, meaning that respondents with previous diagnoses have a 1.7 times chance more likely to experience breast cancer when compared to respondents with no previous diagnosis

Based on table 2. In the variable age of menarche, the statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between the age of menarche at risk and the risk of breast cancer with an OR value of 4.174, meaning that respondents with the age of menarche at risk have a chance of 4.2 times greater risk of breast cancer when compared to respondents with the age of menarche not at risk.

Based on table 2. In the menopause variable statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between menopause and the risk of breast cancer with an OR value of 4.696, meaning that respondents with menopause have a 4.7 times greater chance of experiencing cancer. breasts when compared with respondents with not yet menopause.

Based on table 2. In the variable use of hormones statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between hormone use and the risk of breast cancer with an OR value of 2.478 which means that respondents with hormone users have 2.5 times more chance more experienced breast cancer when compared to respondents with non-hormones users.

Based on table 2. In the radiation variable statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between exposure to radiation and the risk of breast cancer with an OR value of 7.213 which means that respondents exposed to radiation have a 7.2 times greater chance experienced breast cancer when compared with respondents who

Table 2
Corelation Risk Factors

Variabel	Categori	Risk Factors Cancer Breast				Total		P_value	OR (95%CI)
		High Risk		Alert					
		n	%	n	%	n	%		
Age	At risk	93	58,1	67	41,9	160	100	0.000	5,869
	No Risk	57	19,1	241	80,9	298	100		3,831 8,991
First Child	Risk	81	46,8	92	53,2	173	100	0.000	2,756
	No Risk	69	24,2	216	75,8	285	100		1,841 4,125
Descendants	Have a history	95	50,3	94	49,7	189	100	0.000	3,932
	No History	55	20,4	214	79,6	269	100		2,607 5,932
History Of Breast	Have a history	82	38,5	131	61,5	213	100	0.019	1,629
	No History	68	27,8	177	72,2	245	100		1,100 2,413
Diagnosis Previous	Have a history	111	36,4	194	63,6	305	100	0.025	1,672
	No History	39	25,5	114	74,5	153	100		1,086 2,576
Menarche Age	Risk	96	51,1	92	48,9	188	100	0.000	4,174
	No Risk	54	20,0	216	80,0	270	100		2,761 6,309
Menopause	Risk	100	52,1	92	47,9	192	100	0.000	4,696
	No Risk	50	18,8	216	81,2	266	100		3,091 7,133
Hormone Users	There Are	81	45,0	99	55,0	180	100	0.000	2,478
	No	69	24,8	209	75,2	278	100		1,661 3,698
Exposed To Radiation	Exposed	107	57,5	79	42,5	186	100	0.000	7,213
	No Exposed	43	15,8	229	84,2	272	100		4,661 11,162
History I Cancer	There Are	90	42,1	124	57,9	214	100	0.000	2,226
	No	60	24,6	184	75,4	244	100		1,495 3,315
Obesity	> IMT	69	41,3	98	58,7	167	100	0.004	1,825
	≤ IMT	81	27,8	210	72,2	291	100		1,223 2,725
Stres	stres	89	47,6	98	52,4	187	100	0.000	3,126
	No stres	61	22,5	210	77,5	271	100		2,086 4,685
Smoking	Smoking	47	40,9	68	59,1	115	100	0.042	1,611
	No Smoking	103	30,0	240	70,0	343	100		1,040 2,495
Alcohol Consumption	Alcohol Consumption	36	42,9	48	57,1	84	100	0.040	1,711
	No Alcohol Consumption	114	30,5	260	69,5	374	100		1,053 2,778
Users Of Hormonal Contraceptives	Hormonal	125	37,1	212	62,9	337	100	0.001	2,264
	Not Hormonal	25	20,7	96	79,3	121	100		1,384 3,705
Breastfeeding	Breastfeeding < 6 Month	86	43,7	111	56,3	197	100	0.000	2,385
	Breastfeeding ≥6 Month	64	24,5	197	75,5	261	100		1,601 3,552

were not exposed to radiation. Based on table 2. In the variable history of cancer statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between cancer history and the risk of breast cancer with an OR value of 2.226, meaning that respondents with a history of cancer have 2.3 times more chance had breast cancer when compared with respondents with no history of cancer.

Based on table 2. In the obesity variable, the statistical test results obtained p-value = 0.004 which means <α, it can be concluded that there is a relationship between obesity and the risk of breast cancer with an OR value of 1.825, meaning that respondents with obesity have a 1.9 times greater chance of having cancer. breasts when compared with respondents without obesity Based on table 2. In the stress variable statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between stress and the risk of breast cancer with an OR value of 3.126 which

means that respondents with stress have a chance 3.1 times more likely to experience breast cancer when compared to respondents without stress.
Based on table 2. In the smoking variable, the statistical test results obtained p-value = 0.042 which means <α, it can be concluded that there is a relationship between smoking and the risk of breast cancer with an OR value of 1.611 which means that respondents with smoking have a 1.6 times greater chance of having cancer. breasts when compared with respondents with no smoking.
Based on table 2. In the alcohol consumption variable, the statistical test results obtained p-value = 0.040 which means <α, it can be concluded that there is a relationship between alcohol consumption and breast cancer risk with an OR value of 1.711, meaning that respondents with alcohol consumption have 1.7 times more chance greater risk of breast cancer when compared to respondents with no alcohol consumption.

Table 3.
Variables that are significant in the selected breast cancer risk factors after the multivariate logistic model test

	B	Wald	Sig.	Exp(B)	Lower	Upper
Age	-,137	,038	,845	,872	,221	3,447
First Child age > 30 years	1,728	3,524	,060	5,631	,927	34,214
Descendants	,511	1,369	,242	1,668	,708	3,927
History Of Breast	,019	,002	,960	1,019	,491	2,116
Diagnosis Previous	-,546	2,162	,141	,579	,280	1,199
Menarche Age	,001	,000	,999	1,001	,393	2,550
Menopause	,095	,019	,891	1,099	,284	4,255
Hormone Users	-,852	1,088	,297	,426	,086	2,115
Exposed To Radiation	1,970	15,780	,000	7,172	2,713	18,960
History I Cancer	-,428	,967	,325	,651	,277	1,530
Obesity	,040	,012	,912	1,041	,510	2,128
Stres	,457	1,444	,229	1,579	,750	3,324
Smoking	,417	1,335	,248	1,518	,748	3,081
Alcohol Consumption	1,264	16,337	,000	3,540	1,918	6,534
Users Of Hormonal Contraceptives	-,067	,032	,857	,935	,451	1,940
Breastfeeding	-,926	3,694	,055	,396	,154	1,018
Constant	-1,219	20,530	,000	,296		

Table [1].
Generic formula of RICANDRA modeling of breast cancer risk factors based on logistic model in Lampung

No	Variabel	Catagori	Code	Value B (β)
1	Age	At risk	Answer = 1	-,354
		No Risk	Answer = 0	
2	First Child	Risk	Answer = 1	2,147
		No Risk	Answer = 0	
3.	Descendants	Have a history	Answer = 1	,369
		No History	Answer = 0	
4.	History Of Breast	Have a history	Answer = 1	,039
		No History	Answer = 0	
5.	Diagnosis Previous	Have a history	Answer = 1	,033
		No History	Answer = 0	
6.	Menarche Age	Risk	Answer = 1	-,035
		No Risk	Answer = 0	
7.	Menopause	Risk	Answer = 1	-,096
		No Risk	Answer = 0	
8.	Hormone Users	There Are	Answer = 1	-1,073

[1] .22

% Kejadian kanker payudara 0.01469

% Prediksi kanker payudara 98,5%

		No	Answer = 0	
9.	Exposed To Radiation	Exposed	Answer = 1	2,007
		No Exposed	Answer = 0	
10	History I Cancer	There Are	Answer = 1	-,575
		No	Answer = 0	
11	Obesity	> IMT	Answer = 1	-,081
		≤ IMT	Answer = 0	
12	Stres	stres	Answer = 1	,629
		No stres	Answer = 0	
13	Smoking	Smoking	Answer = 1	,307
		No Smoking	Answer = 0	
14	Alcohol Consumption	Alcohol Consumption	Answer = 1	,500
		No Alcohol Consumption	Answer = 0	
15	Users Of Hormonal Contraceptives	Hormonal	Answer = 1	,622
		Not Hormonal	Answer = 0	
16	Breastfeeding	Breastfeeding < 6 Month	Answer = 1	-,516
		Breastfeeding≥6 Month	Answer = 0	
			Constanta	-1,419
			$Z=\alpha+\sum\beta_i X_i$	
				- Z
			Φ = $1/1+e^{-Z}$	1/1.01469

95% C.I.for EXP(B)

Based on table 2. On the hormonal contraceptive variable, the statistical test results obtained p-value = 0.001 which means <α, it can be concluded that there is a relationship between the use of hormonal contraception and the risk of breast cancer with an OR value of 2.264 which means that respondents with hormonal contraceptive users have a 2.3 chance times greater risk of breast cancer when compared to respondents who are not users of hormonal contraception. Based on table 2. In the breastfeeding variable, the statistical test results obtained p-value = 0.000 which means <α, it can be concluded that there is a relationship between breastfeeding and the risk of breast cancer with an OR value 2,385 means that respondents who breastfeed have a 2.4 times greater chance of experiencing breast cancer when compared to respondents who do not breastfeed.

Of the 16 variables that were tested jointly, the variables exposed to radiation were obtained as the most dominant variable of breast cancer risk factors with p value 0.000 and POR: 7.172; 95% CI (2.713-18.960). Based on the results of the logistic function obtained a value of (98.5%) this means that the probability or prediction of the occurrence of breast cancer risk factors is 98.5%. While the results of the calculation of the logistic function of predicting breast cancer risk, the result is 0.01469 (1.5%). This result can be interpreted that the probability or prediction of breast cancer if all variables of women of childbearing age are in the alert category, then the risk is only 1.5%.

DISCUSSION

Age Relationship with Cervical Cancer

The results showed that there was a relationship between age and risk of breast cancer with a value of OR5,869, meaning that respondents with age at risk had a 5.9 times greater chance of developing breast cancer when compared to respondents with age not at risk. According to Darwinian states that the age of young adulthood, namely the age of 18 to 40 years is often associated with the fertile period. This study differs from Setyarini's finding that respondents aged >35 years are at risk for uterine cancer 4.23 times greater than respondents aged with 35 years (Setyarini, 2009). Research This study found that there is a high proportion of women diagnosed under the age of 40, and with a second primary neoplasm, but with a fairly high average survival rate (Ponticelli, D'Ambrosio, Mastrogiacomo, & Agozzino, 2019) . If there is an association between age at diagnosis and breast cancer survival, we classified age as a categorical variable and organized patients into the following seven groups: younger than 30 years (<30), 30-39 years,

40-49 years, 50-59 years. years, 60-69 years, 70-79 years, and over 80 years (≥80). Patients aged 50-59 years were used as references (Chen, Zhou, Tian, Meng, & He, 2016). This is due to the lack of preventive measures or early detection of cancer in women who are at high risk of developing an advanced stage (Djatmiko, M., Schatzmann, D., Dimitropoulos, X., Friedman, A., & Boreli, 2013). According to researchers, it can be understood that the age of a woman is a risk factor that affects the occurrence of breast cancer. This happens because with increasing age, the cumulative number of exposures received throughout that age is also higher, besides physiologically there is a decrease in organ functions and decreased body resistance. At an age that is not at risk but has breast cancer, this can be caused by other factors such as the use of hormonal contraception, other factors such as heredity that were not taken in this study so that even though the respondent is not included in the risk category, it is breast cancer.

The relationship between the age of the first child and the risk of breast cancer

The results showed that there was a relationship between age when their first child was born with the risk of breast cancer with a value of OR2,756, meaning that respondents at risky age had a 2.7 times greater chance of developing breast cancer when compared to respondents with age when their first child was not at risk. Another study found that women who gave birth to their first child over the age of 30 had twice the risk of developing breast cancer compared to women who gave birth to their first child under the age of 30.
The relationship between childbirth and breast cancer risk is complex. Labor is intrinsically multidimensional "exposure," and understanding its effects requires segregation of age, parity, use of contraceptive and reproductive technology, and breastfeeding, among other factors. Given this complexity, the results of the large and sophisticated analysis by Nichols and colleagues (1) provide important advances in this area. In this examination of nearly 900,000 women under 55 years of age enrolled in a premenopausal breast cancer study, breast cancer risk peaked 5 years after delivery and then gradually declined over at least 2 decades. Because of the large study population, the researchers were also able to examine important subgroups: The effect was not seen in women who had only 1 child or had their first child before age 25, and it was greatest for estrogen receptor-negative cancers and among women with a history of breast cancer family(Learning, n.d.).
Another study stated that the age of first giving birth above 30 years is a risk of breast cancer only in the type of breast cancer that has estrogen receptors and progesterone receptors on its cancer cells, which are commonly written as ER (+) and PR (+). Whereas in cancer types that do not have estrogen receptors or ER (-) , giving birth to their first child over the age of 30 does not increase the risk of breast cancer. ascertained the effect of giving birth to their first child at the age of over 30 years.

The relationship between heredity and cancer risk

The results showed that there was a hereditary relationship with the risk of breast cancer with an OR value of 3.932, meaning that respondents with a history of heredity had a 3.9 times greater chance of developing breast cancer when compared to respondents with no hereditary breast cancer.
Approximately one third of breast cancer patients are diagnosed at the age of 40-50 years (mean age range 49 (2686)); 71% are from rural areas; Positive family history was noted in 7.5%. The patient himself detected a lump in the majority of cases (84%),(Gabr, 2016). In addition to environmental causes, family history has also emerged as an important risk factor in the etiology of this disease (Tazzite, Jouhadi, Saiss, Benider, & Nadifi, 2013). On the other hand, a significant relationship was shown with respect to marital status and education, a history of hormone intake and breast cancer in the family (Alwan, Tawfeeq, Maallah, Sattar, & Saleh, 2017). Among the non-hereditary factors, the most important factors that contribute to breast cancer are the gender and age of the woman. The incidence of age-specific breast cancer increases rapidly starting at age 40. Other risk factors include menarche, age at menopause, age at first birth, number of births, breastfeeding, smoking, radiation exposure, oral contraceptives and postmenopausal hormone use, fatty diet
and obesity (Ozsoy). et al., 2017)

Relationship history of breast tumors with breast cancer risk

The results showed that there was a relationship between a history of breast tumors and the risk of breast cancer with an OR value of 1.6 meaning that respondents with a history of breast tumors had a 1.6 times greater chance of experiencing breast cancer when compared to respondents with no history of breast tumors. The theory states that benign breast tumors that can become breast cancer are

tumors that histopathologically are proliferative lesions, while nonproliferative lesions will not become breast cancer. Early detection of breast cancer can play an important role in reducing its incidence and burden. Breast cancer mortality can be reduced if cases are detected and treated early (Angahar, 2017)

Relationship between previous diagnosis and breast cancer risk

This study found that there was a relationship between previous diagnoses and the risk of breast cancer with an OR value of 1.672, meaning that respondents with a previous diagnosis had a 1.7 times greater chance of developing breast cancer compared to respondents with no previous diagnosis. Under certain conditions, the BRCA gene can mutate into BRCA1 and BRCA2, so that the function as a growth controller is lost so that cell growth becomes uncontrolled or cancer occurs. Because the earlier it is detected, the greater the chance for rehabilitation and return to normal life for women. Of course, it is a big deal when one gets a breast cancer diagnosis. This affects women's states in general; Anxiety and stress are very common in this situation. This can also be caused by a lack of information about breast cancer and its treatment process. This can also cause difficulties in making decisions and choosing better treatment options (Laaksonen & Mitsuk, 2016). There was a significant relationship between the stage of breast cancer diagnosis and the level of family socioeconomic status at the time of diagnosis ($p = 0.024$). Also, the relationship between diagnosis stage and residence (in or out of Tehran) was significant ($p = 0.044$). (Mohaghegh, Yavari, Akbari, Abadi, & Ahmadi, 2014)

The relationship between the age of menarche and a history of breast cancer

The results of this study found that there was a relationship between previous diagnoses and the risk of breast cancer with an OR value of 4.174, meaning that respondents with the age of menarche at risk had a 4.2 times greater chance of developing breast cancer when compared to respondents with age at menarche not at risk. This is in accordance with the USCF (2006) statement that women who experience their first menstruation at the age of less than 12 years have a longer duration of estrogen exposure and a slightly higher risk of breast cancer. In the opinion of the researcher, based on the results of research on women who experienced menarche in at an early age, will have more menstrual cycles than women who menstruate at a normal age. The more menstrual cycles a woman has, the more often she is exposed to increased estrogen in each menstrual cycle, this will further increase the risk of breast cancer.

Menopause is associated with cancer risk

The results of the study found that there was a relationship between menopause and the risk of breast cancer with an OR value of 4.696, meaning that respondents with menopause had a 4.7 times greater chance of experiencing breast cancer when compared to respondents without menopause. Breast cancer is experienced before menopause occurs. One study stated that the age of menopause did not significantly increase breast cancer in women carrying the BRCA1 and BRCA2 genes. Based on research on a family history of breast cancer.

The relationship between hormonal users and breast cancer risk

The results showed that there was a relationship between hormone use and the risk of breast cancer with an OR value of 2,478, meaning that respondents with hormone users had a 2.5 times greater chance of experiencing breast cancer when compared to respondents with non-hormone users. According to Sarwono (2016) the causes of breast cancer include the use of hormonal contraception for a long time. Oral contraceptive use > 7 years is one of the risks of breast cancer (Ministry of Health, 2015). According to the National Cancer Institute (Society, 2013) Using oral contraceptives in the last 10 years can slightly increase the risk of developing breast cancer. The role of health workers plays a very important role in providing good information and counseling to acceptors so that they can provide the information needed that aims to improve the individual's own health status. On the other hand, a significant relationship was shown with respect to marital status and education, history of hormone intake and breast cancer in the family (Alwan et al., 2017)

The Relationship between Radiation Exposure and Breast Cancer Risk

The results showed that there was a relationship between exposure to radiation and the risk of breast cancer with an OR value of 7.213, meaning that respondents who were exposed to radiation had a 7.2 times greater chance of experiencing breast cancer when compared to respondents who were not exposed to radiation. The relationship between radiation exposure and breast cancer has been demonstrated in studies of atomic bomb survivors and women who received high doses of radiation to the chest, especially those exposed at a young age. The risk of breast cancer in women with initial exposure develops 8 years after radiation and increases over 25 years (Kumar V, Cotran RS, 2013). doing so (eg breast cancer screening) will lead to long-term positive health implications as those that start at an early age will continue into adulthood and even throughout life (Swapana & Padmavathy, 2015). However, the magnitude of the risk per unit dose is highly dependent on when the radiation exposure occurred: exposure before age 20 carries the greatest risk. Other characteristics that may influence the magnitude of dose-specific risk include age attained (i.e., age at observed for risk), age at first full-term delivery, parity, and possibly history of benign breast disease, radiation exposure during pregnancy, and genetic factors. (Rockers). , Erdmann, & Land,
2005)

The Relationship of Cancer History with Breast Cancer Risk

The results showed that there was a relationship between a history of cancer and the risk of breast cancer with an OR value of 2.226, meaning that respondents with a history of cancer had a 2.3 times greater chance of developing breast cancer when compared to respondents with no history of cancer. This study is in line with research by Olfah, et al (2013) risk factors associated with breast cancer one of which has a history of cancer, Women who have had a biopsy that show an overgrowth of cells (hyperplasia) in the ducts or lobules have an increased risk breast cancer, especially if abnormal cells appear (a condition called atypical hyperplasia) (Prawirohardjo S, 2016).

Obesity Relationship with Breast Cancer Risk

This study found that there is a relationship between obesity and the risk of breast cancer with an OR value of 1.825, meaning that respondents with obesity have a 1.9 times greater chance of experiencing breast cancer when compared to respondents without obesity. This study is in line with research conducted by Anggorowati (2013), entitled Risk Factors for Women's Breast Cancer in RSUD Kudus, that the majority of women are obese women, namely 55.9%. Obesity has been widely studied as a risk factor for the development of breast cancer. (Rasjid, 2010) Obesity increases the body's production of estrogen by fat cells, excessive production of estrogen creates hormonal imbalances that are associated with an increased risk of cancer. Obesity is an imbalance in the amount of food intake compared to energy expenditure by the body, obesity is also often defined as an abnormal condition or serious excess of fat in adipose tissue that interferes with health (Aprina & Dewi, 2016). Obesity has a relationship with the amount of estrogen hormone stored in fat tissue, the more fat is stored, the more estrogen hormone is trapped in fat tissue, which is the main fuel for breast cancer cell growth (Subagja, 2014). The results showed that there was a relationship between genetic factors (p-value = 0.000), age (p-value = 0.000), early menarche (p-value = 0.001), contraceptive use (p-value = 0.012) and obsession (p-value). = 0.012) to the incidence of breast cancer at the Regional General Hospital dr. H. Abdul Moeloek Bandar Lampung in
2014 (Suryani, Subandriyo, & Yanti, 2015)

Stress Relationship with Breast Cancer Risk

The results showed that there was a relationship between stress and the risk of breast cancer with an OR value of 3.126, meaning that respondents with stress had a 3.1 times greater chance of experiencing breast cancer when compared to respondents without stress. Research conducted (Maria, 2017) The risk of breast cancer in those who are stressed is 2,698 times compared to those who are not stressed. This means that stress can also be a risk factor for breast cancer. The women in Group 1 were found to be more severely depressed, and a statistically significant relationship was detected between depression and body image ($p < 0.05$). In contrast, in Group 2, although many subjects also felt depressed due to distorted or disturbed body image, their depression was less severe ($p > 0.05$) (Cordero et al., 2015). Understanding stress is a condition or state of the body that is disturbed due to psychological pressure, due to the influence of stress, physical illness can arise due to weakness and low endurance at that time. Psychological stress, an emotional factor, may play an important role in the development of breast cancer.

Some studies have shown an association between various psychological factors and an increased risk of developing cancer, although other studies have not. In vitro, in vivo, and clinical studies suggest that stress-related processes may impact pathways associated with cancer development, including immunoregulation, angiogenesis, and invasion. A study found that corticotropin-releasing hormone is associated with stress or emotions and increases human susceptibility to disease and increases infection, inflammation, or tumors (Yeh & Lee, 2016). One of the biggest problems in determining the role of stress is the difficulty of isolating it as a solitary variable. Breast cancer presents a large number of demographic or physiological risk factors. All of these factors have the potential to increase or decrease the psychological impact and vice versa. Stress has a more pronounced effect on young women, who tend to be more responsive to life events and who are also more prone to aggressive tumors. Social support is also involved in stress management and therefore a lack of it can exacerbate the effects of stress. Smoking, alcohol consumption or obesity can also play a role in the effects of stress (Chiriac, Baban, & Dumitrascu, 2018)

Smoking Relationship with Breast Cancer Risk

The results showed that there is a relationship between smoking and the risk of breast cancer with an OR value of 1.611, which means that respondents with smoking have a 1.6 times greater chance of developing breast cancer when compared to respondents who do not smoke. Limited and ongoing research indicates that smoking can increase the risk of breast cancer, especially in long-term smokers, heavy smokers, and in women who started smoking before their first pregnancy. Women who started smoking before giving birth to their first child had a 21% higher risk of developing breast cancer than women who had never smoked (Society, 2013). The negative effects of cigarette smoke on cancer cells have serious implications for cancer patients undergoing treatment. Smoking during treatment is associated with increased mortality and treatment-related complications. In summary, it is reasonable to conclude that smoking in the long term provides a clear risk for breast cancer and worsening of the disease. Several cohort studies have shown that longer duration, increased number, and age at starting smoking are associated with a higher risk of breast cancer.
(Kispert & McHowat, 2017)

The relationship between alcohol consumption and breast cancer risk

The results showed that there was a relationship between alcohol consumption and the risk of breast cancer with an OR value of 1.711, meaning that respondents with alcohol consumption had a 1.7 times greater chance of developing breast cancer when compared to respondents without alcohol consumption. From research conducted by (Fitoni, 2012) only a few have a history of consuming alcohol. Of the 70 subjects, only 14 subjects (20%) had a history of consuming alcohol. The theory states that alcohol can cause obstacles in the metabolism of estrogen levels in the blood. Excessive alcohol consumption can interfere with liver function in metabolizing estrogen, so that estrogen levels remain high in the blood, and this can increase the risk of breast cancer (Society, 2013). Research in America states that alcohol can trigger the risk of breast cancer, especially in women with breast cancer who have positive estrogen receptors (Nelson, 2009).

The Relationship of Breastfeeding with Breast Cancer Risk

The results showed that there was a relationship between breastfeeding and the risk of breast cancer with an OR value of 2,385, meaning that respondents with breastfeeding had a 2.4 times greater chance of developing breast cancer when compared to respondents without breastfeeding. Women who breastfeed their children, especially for more than a year, have a lower risk of developing breast cancer. During breastfeeding, breast cells become more mature (mature). By breastfeeding a person's menstruation will experience a delay, thereby reducing the menstrual cycle. This will reduce the body's exposure to the hormone estrogen, thereby reducing the risk of breast cancer (Handayani L, Suharmiati, 2012). breast cancer among women who have breastfed and, the first research investigation of the combined effect of parity and breastfeeding on the risk of breast cancer with moleculartype moleno.(Fortner et al., 2019) Breast cancer is the most frequently diagnosed cancer and the leading cause of death from cancer among U.S. women. Studies have shown that breastfeeding reduces the risk of breast cancer among parous women, and there is ample evidence that this association may differ by subtype so that breastfeeding may be more protective against some types of invasive breast cancer.

Breastfeeding not only reduces breast cancer risk but also provides other health benefits. to the mother including a reduced risk of endometrial and ovarian cancer. (Anstey et al., 2017)

RICANDRA risk factors

The results of the statistical analysis are poured into a simulator programming to produce a RICANDRA risk factor model that can be used to estimate the risk of breast cancer which can be opened ONLINE WEB-based at the address: modelricandra.com By using this model it will be known early on the risks that will be experienced by women of childbearing age and the interventions obtained and where women of childbearing age should perform early detection of breast cancer.

CONCLUSION AND RECOMMENDATIONS

Conclusion

1. There is a significant relationship between advanced age, first child born at the age of > 30 years, close family ties/hereditary, history of breast tumor, previous diagnosis, early menstruation, late menopause, hormone use for menopausal symptoms, exposure to radiation, history of cancer , Use of hormonal contraceptives, Obesity and stress with risk factors for breast cancer
2. The most dominant variable affecting breast cancer risk factors is the variable exposed to radiation.
3. The magnitude of the risk of breast cancer based on the probability of the logistic function obtained by the magnitude of the risk of 98.5% wus experiencing breast cancer and if the risk can be avoided then only 1.5% will experience breast cancer.
4. The Web-based RICANDRA model can be accessed via a smartphone or computer device by account users/visitors with the web address: modelricandra.com. breast cancer risk factors online test

Recommendations

1. Advocacy to stake holders, socializing all policy makers in 15 Regencies Cities has been carried out on January 12, 2020
2. Facilitating the formation of the Governor's Regulation on 1000 Days of Life in which there are efforts to prevent breast cancer using the Ricandra model.
3. There is a policy of implementing the use of the Ricandra model in primary services throughout the province of Lampung
4. Encouraging an increase in the governor's regulation on 1000 days of life into a regional regulation on the use of the Ricandra model
5. Can be applied and implemented and utilized by IBI organizations and the Ministry of Health, BKKBN

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