

## ***Ca Mammae* Disease in Andi Makkasau Hospital, Parepare City**

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**Abstract:** Breast cancer is a neoplastic disease originating from *the parenchyma*. Indonesia is one of the countries in Asia with the highest incidence of breast cancer with a total of 348,809 cases. The purpose of this study was to determine the factors that can influence the occurrence of breast cancer at Andi Makkasau Hospital, Parepare City. This type of research is observational with a *case control approach*. The population in this study was the entire population diagnosed with *ca mammae* at Andi Makkasau Hospital, Parepare City. the sample in this study was 48 respondents with 24 cases and 24 controls, with the sampling technique using total sampling. Data is processed using SPSS. The results of *the chi square* test for age have a value of  $p = 0.020 < \alpha 0.05$  and  $OR = 4.048$ , obesity has a value of  $p = 1.000 > \alpha 0.05$  with a value of  $OR = 1.000$ , history of breastfeeding has a value of  $p = 0.771$  with a value of  $OR = 0.771$ , family history has a value of  $p = 0.004 < \alpha 0.05$  with a value of  $OR = 13.800$ , use of hormonal birth control has a value of  $p = 0.020 < \alpha 0.05$  with a value of  $OR = 4.048$ , menstrual history has a value of  $p = 0.009 < \alpha 0.05$  with a value of  $OR=5,000$ . It can be concluded that the factors of age, family history, history of using hormonal birth control and menstrual history have a significant effect on the incidence of *ca mammae*, while obesity and history of breastfeeding have no effect but have a risk of *ca mammae events* at Andi Makkasau Hospital, Parepare City. It is recommended to maintain a healthy lifestyle and routinely carry out health checks at health workers.

**Keywords:** *Ca mammae*, age, obesity, breastfeeding, menstrual history, family history

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### **1. Introduction**

Breast cancer (*ca mammae*) is a malignant neoplasm disease originating from *the parenchyma*. The World Health Organization (WHO) classifies them into *the International Classification of Diseases (ICD)*. The frequency of cases of this disease is relatively in developed countries and is a type of cancer that many other types of cancer suffer from (Wahyuni et al., 2019). *Ca mammae* is a cancer that often occurs and is the number two death in the world in women, which is caused by the process of its rapid spread through the blood vessels throughout the body.

Data World Health Organization (WHO) 2019 shows that 78% cancer breast happen on woman 50 years old to top. While the 6% on age not enough of 40 years. Incident disease *ca mammae* estimated the more tall in whole world, meanwhile disease data *ca mammae* with percentage highest, ie by 43.3%, and percentage death consequence *ca mammae* by 12.9%. Prevalence *ca mammae* of 1,677,000 cases Where most cancers suffered by women, there are 794,000 cases happen in country develop And causing 324,000 deaths consequence *ca mammae* (Haryati et al., 2019). WHO predicts in Asia there are 1.6 million new types of cancer and 1.1

million deaths due to *breast cancer* and will increase significantly to around 13.1 million deaths in 2030 (Alfiani & Putri, 2022) .

*The Global Burden Of Cancer Study* (Globocan) from *the World Health Organization* (WHO) noted that the total cases of cancer in Indonesia in 2020 reached 396,914 cases with a total death of 234,511 cases. With the first highest cancer is *ca mammae* with 65,858 cases. Health survey results base from Ministry Health , shows number prevalence tumor or disease *ca mammae* in Indonesia is 4.3 per 1000 population. Lenny added, in 2020 the number of new cases of *breast cancer* in Indonesia reached 68,858 cases (16.6%) of a total of 396,914 new cases of cancer, with the number of deaths reaching more than 22 thousand people (Haryati et al., 2019) . Indonesia, which is one of the countries in Asia, breast cancer is the highest cancer disease with the number of new cases of *ca mammae* in 2018 there were 58,526 cases or around 16.7% of the total number of cancer patients, namely 348,809 cases (Fajar, Heriady, & Aji, 2020)

Data from the South Sulawesi Provincial Health Office (Dinkes), states that cancer attacks the most people is *ca mammae*. as we do Look from case cancer breast on 2012 was recorded as many as 203 cases in House Sick , and 316 in health center . Whereas on 2013 total case cancer breast increase namely 252 cases in House Sick and 600 cases in Puskesmas s. Meanwhile, patients with malignant breast tumors/*ca mammae* in outpatients at the Andi Makkasau Regional General Hospital, Parepare City, in 2017 there were 498 patients, in 2018 there was an increase of 598 sufferers, and in 2019 there was a decrease of 175 sufferers (Magfirah et al., 2021). Then based on data at Andi Makkasau Hospital, Parepare City, breast cancer sufferers in 2020 the number of cases was 119 cases, in 2021 the number of sufferers was 102 cases, then in 2022 it decreased to 24 cases diagnosed with Ca Mammae disease .

There are several factors that cause the emergence of *ca mammae disease* factors such as age, obesity, history of breastfeeding, family history, use of hormonal birth control and history of menstruation (*menarche*). The age factor has a great chance of developing breast cancer because the higher a person's age, the possibility of genetic damage (mutation) also increases, and the ability to repair healing decreases (Age et al., 2021) . Obesity will increase due to increased estrogen synthesis in fat deposits resulting in obesity. High levels of estrogen will affect the growth of breast tissue. Excessive tissue growth and no limit to cell death will cause cells to divide continuously which can cause breast cancer (Irena, University, & Tuanku, 2018) .

Breast-feed reduce risk caught cancer boobs. this will reduce exposure estrogen hormone which body estrogen hormone woman is material main reason cancer breast so that lower risk *ca mammae*. Women who have a family history can increase their chances of developing malignant breast tumors. Because the risk is doubled if you have a blood relationship with cancer sufferers (Kupang et al., 2021) . The use of hormonal contraception for a long period of time can cause an increase in the body's exposure to the hormone estrogen. There is enhancement exposure it is the estrogen hormone that can trigger growth cell in a manner abnormal on part certain , for example breast (Publication, 2022) . U suck first menarche < 12 years risky For caught cancer breast compared to history age first menarche > 12 years. this because Because exposure hormone more estrogen fast and long. *Menarche* happen Because hypothalamus secrete hormones stimulating

gonadotropins gland pituitary For produce hormone *Follicle Stimulating Hormone* (FSH) (Watiningsih & Sugiartini, 2020). The purpose of this study was to determine the determinants or factors that can influence the occurrence of *ca mammae disease* at Andi Makkasau Hospital, Parepare City.

## 2. Materials and Methods

The research method used in this research is *observational research* with the type of analytic research using a *case control approach*. The *case control* research design is an epidemiological study that studies the relationship between exposure to research factors and disease by comparing the case group with the control group based on cases of *Ca Mammae disease* at Andi Makkasau Hospital, Parepare City (Prasasty & Legiran, 2023). This research was conducted at Andi Makkasau Hospital, Parepare City with the aim of looking at the determinant factors that influence *Ca Mammae disease* at Andi Makkasau Hospital, Parepare City.

The population in this study is the entire population diagnosed with *breast cancer* at Andi Makkasau Hospital, Parepare City, with a total population of 24 cases in 2022. The number of samples in this study were the entire population diagnosed with *ca Mammae* at Andi Makkasau Hospital, Parepare City. This study used a group comparison of 1:1, with a total of 24 cases of respondents and 24 cases of control cases, so that the number of samples in this study were 48 samples. This study uses the *Total Sampling technique, Total Sampling*, which is a sampling technique where the population size is the same as the sample size (Mulyorejo & Tel, 2019).

The research instrument was the tool used in this study, namely questionnaires, scales to measure body weight, stature meters to measure height and mobile phones. The data collection technique used was primary and secondary data collection. The data processing techniques are *editing, coding, entry* and *tabulating*. The method of data analysis is to carry out tests using univariate analysis and bivariate analysis to see if there is a relationship or correlation between the independent variables and the dependent variable which is examined by the *chi square test* using the SPSS application. Interpreted the hypothesis test based on the level of significance of the value (*p-value*) with a value ( $\alpha=0.05$ ), and if the *p-value*  $< \alpha$  then  $H_a$  is accepted, conversely if the *p-value*  $> \alpha$  then  $H_o$  is rejected. Presentation of data is done in the form of tables that are equipped with an explanation of each existing table.

## 3. Results and Discussion

This research was conducted at Andi Makkasau Hospital, City by taking data directly from respondents in the Surgery Clinic and indirectly from the medical records of patients who had done an ultrasound examination and were diagnosed by a doctor with *ca mammae disease*. with the number of samples in the study as many as 48 respondents consisting of 24 respondents in the case group and 24 respondents in the control group.

### 3.1 Univariate analysis

#### 3.1.1 Characteristics of respondents

**Table 1.** Frequency Distribution Based on Respondent Characteristics

Characteristics of Respondents	n	%
<b>Last education</b>		
No school	1	2,1
SD or Equivalent	3	6,3
SMP/MTs equivalent	10	20,8
SMA/MA equivalent	17	35,4
College	17	35,4
<b>Work</b>		
IRT	27	56,3
Private employees	7	14,6
Self-employed	4	8,3
Etc	10	20,8
<b>Income</b>		
3,000,000	2	4,2
2,500,000	1	2,1
2,000,000	2	4,2
1,500,000	4	8,3
1,000,000	3	6,3
500,000	5	10,4
0	31	64,6
<b>Total</b>	<b>48</b>	<b>100.0</b>

Source: Primary Data 2023

Frequency distribution of respondents' characteristics based on recent education, where the highest level of education among the respondents was SMA/MA equivalent and tertiary education as many as 17 respondents (35.4%) while the lowest was not attending school as many as 1 respondent (2.1%). Characteristics of respondents based on work that has the most, namely IRT as many as 27 respondents (56.3%), while the lowest is working as an entrepreneur with as many as 4 with a percentage (8.3%). And characteristics based on income where the highest income of the respondent is Rp. 3,000,000 for 2 (4.2%) respondents, while the respondents who have the lowest income are 31 respondents with a total income of Rp.0 or have no income .

### 3.2 Bivariate analysis

**Table 2.** Major distribution of risk Age, Obesity, History of Breastfeeding, Family History, Use of hormonal contraception and menstrual history with *ca mammae events* At RDUS Andi Makkasau, City of Parepare

Variable	<i>Ca Mammae Disease</i>				Total	<i>p-values</i>	OR (95% CI)
	Case		Control				
	n	%	n	%			
<b>Age</b>							
risky	15	68,2	7	31,8	22	100.0	0.020
No risk	9	34,6	17	65,4	26	100.0	

									13,538)
<b>Obesity</b>									
Normal	14	50.0	14	50.0	28	100.0	1,000	1,000	
Obesity	10	50.0	10	50.0	20	100.0		(0.317-3.151)	
<b>Breastfeeding History</b>									
risky	10	47,6	11	52,4	21	100.0	0.771	0.844	
No Risk	14	51.9	13	48,1	27	100.0		(0.270-2.644)	
<b>Family History</b>									
Risky	9	18,8	1	2,1	10	100.0	0.004	13,800	
No Risk	15	31.3	23	47.9	38	100.0		(1,582-120,378)	
<b>Hormonal contraceptive use</b>									
Using	15	68,2	7	31.8	22	100.0	0.020	4,048	
Do not use	9	34,6	17	65,4	26	100.0		(1,210-13,538)	
<b>Menstrual history (menarche)</b>									
Risky	15	71,4	6	28,6	21	100.0	0.009	5,000	
Not risky	9	33,3	18	66,7	27	100.0		(1,448-17,271)	
<b>Total</b>	<b>24</b>	<b>100.0</b>	<b>24</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>			

Source: Primary data

Based on the results of Table 3 statistical test with *chi square*, it was found that there was a relationship between age and the incidence of *breast cancer* with a *p-value* = 0.020 <  $\alpha$  0.05 and OR: 4.048. Increasing age is a risk factor for breast cancer, presumably due to the influence of exposure hormonal effects for a long time, especially the hormone estrogen and there are also influences from other risk factors that take time to induce cancer. This research is in line with research conducted by Ika (2022) which was conducted at Dr. Pirngadi Hospital in Medan, which showed that there was a relationship between age and the incidence of breast cancer. Analysis connection age with incident cancer breast with large risk OR 6.875 (95% CI) , which means that the age factor is very influential with the incidence of breast cancer, where age > 45 or those entering the age of menopause are more at risk of 6.875 times more than age <45 years (Sipayung, Lumbanraja, & Fitria, 2022) .

Obesity has no relationship with the incidence of *breast cancer* with  $p = 1.000 > \alpha 0.05$  and OR: 1.000, the results of this study are in line with research conducted by Theresia Yuliana Dati (2021) which was carried out at Prof. Hospital. WZ Johannes Kupang. From the results analysis got No There is connection between obesity with incident cancer boobs ,  $p$  This proven with ( $p = 0.214 > \alpha = 0.05$ ) of 84 patients who suffered cancer breasts (Dati, Sasputra, Rante, & Artawan, 2021). In contrast to the research conducted by Eka (2020) on women in 13 Provinces Indonesia a, study with use *retrospective case control study* in Tehran, found that woman obesity has enough risk tall to incident cancer breast Where OR values respectively namely 2.53 and 3.21 (Di, Abdul, & Province, 2018). this Possible caused due to balancing heavy body And tall body held only on moment study done No on moment before diagnosed with *ca mammae disease*,

because if respondent has suffer cancer breast can cause respondent become impact stress can cause heavy body respondent decreased or increased.

History of breastfeeding has no relationship with the incidence of *ca mammae* with a value of  $p=0.771 > \alpha 0.05$  and OR value: 0.844. This is in line with research conducted by Theresia Yuliana Dati (2021) at Prof. Hospital. WZ Johannes Kupang Longer breastfeeding times have a stronger effect in reducing the risk of breast cancer. This is due to a decrease in estrogen levels and the secretion of carcinogenic substances during breastfeeding. From the results, there was no relationship between history of breastfeeding and the incidence of breast cancer at Prof. Hospital. Dr. WZ Johannes Kupang (Dati et al., 2021) . In contrast to the research conducted by Ningrum 2021, there are connection in a manner statistics between history breast-feed with breast tumors . Women who don't Once breast-feed risky affected by breast tumors 1.295 times compared to woman ever breastfeeding (Megawati Puspa Ningrum & Info, 2021) . Based on the theory, the factors that cause low rates of history of breastfeeding, related to the breastfeeding process are breastfeeding techniques, frequency and duration, if the breastfeeding technique is good then the lactation process runs smoothly but many breastfeeding mothers do not breastfeed their babies due to mismanagement of lactation, especially with breastfeeding techniques (History et al . al., 2021)

Family history has a relationship with the incidence of *breast cancer* with OR:  $0.004 < \alpha 0.05$  and OR: 13,800. The results of this study are in line with research conducted by Rini Febrianti (2021) At Dr. M. Djamil Hospital, Padang it was found that the proportion of women who had breast cancer was more in the family history at risk. After a statistical test was carried out, there was a significant relationship between family history and the incidence of breast cancer (Megawati Puspa Ningrum & Info, 2021). The risk factor that has the most influence on the incidence of breast cancer is a family history compared to women who do not have a family history of currently or have had breast cancer (Jurnal, Health, Husada, Rukinah, & Luba, 2021) .

The use of hormonal birth control has a relationship with the incidence of *breast cancer* with a value of  $p = 0.020 < \alpha 0.05$  and an OR value of 4.048. The results of this study are also in line with research conducted by Sukmayenti (2019). From the results of statistical tests, it is known that the *odds ratio* is 6.0, This means that there is a relationship between a history of hormonal contraception and the incidence of breast cancer, where respondents with a history of hormonal contraception have a 6 times greater risk of developing breast cancer than respondents with a history of hormonal contraception who are not at risk (Di et al., 2018). This research is also in line with research conducted by Mardhiah (2019) which states that there is a relationship between the use of hormonal contraception and the incidence of breast cancer at Embung Fatimah Hospital, Batam City (Wahdini, Suryamah, Health, & Bandung, 2022) .

and Menstrual history (*menarche*) is associated with the incidence of *breast cancer* with a value of  $p = 0.009 < \alpha 0.05$  and OR value: 5.000. This research is in line with research that was conducted by Ningrum (2021) which stated that there is a relationship between *menarche* and the incidence of cancer In Indonesia, the OR value obtained was 3.4, which means that women with *menarche*  $\leq 12$  years are 3.4 times more at risk than women with *menarche*  $\geq 13$  years (Megawati Puspita Ningrum & Rahayu, 2021). The results of this study are in line with studies in Kenya which

found that breast cancer patients with distant metastases had a normal menarche range of  $13.1 \pm 1.5$  years. 5 However, these results were not in line with the theory which stated that the risk of developing breast cancer is at a young age, where this will prolong the exposure time to the hormone estrogen which in turn triggers a longer development of breast cancer (Reno, Marpaung, & Khambri, 2021)

#### 4. Conclusion

- a. Respondents aged  $\geq 50$  years had a risk of 40.48 times experiencing the risk of *ca mammae* compared to those aged  $< 50$  years at Andi Makkasau Hospital, Parepare City
- b. Respondents who are obese have a risk of 10 times experiencing the risk of *breast cancer* compared to respondents who have normal weight at Andi Makkasau Hospital, Parepare City
- c. Respondents who did not breastfeed had a risk of 8.44 times more experiencing the risk of *ca mammae* than respondents who breastfed at Andi Makkasau Hospital, Parepare City
- d. Respondents who have a family history are at risk of 138 times experiencing the risk of *ca mammae* compared to respondents who do not have a family history At Andi Makkasau Hospital, Parepare City
- e. Respondents who used hormonal birth control had a risk of 40.48 times experiencing the risk of *ca mammae* compared to respondents who did not use hormonal birth control at Andi Makkasau Hospital, Parepare City
- f. Respondents who experience a history of early menstruation (*menarche*) are at risk of 50 times experiencing the risk of *ca mammae* compared to respondents who experience normal menstruation at Andi Makkasau Hospital, Parepare City

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#### Conflict of Interests

All Authors declare no conflict of interest and agree with the contents of the manuscript.

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