Risk Factors of Chronic Energy Deficiency in Pregnant Women in The Working Area of Sungai Jingah Public Health Center Banjarmasin 2019

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Abstract

Chronic Energy Deficiency (CED) is a problem of malnutrition, especially in pregnant women. The prevalence of CED in South Kalimantan Province is 18% and Banjarmasin City has 1296 cases. The highest CED was in the Sungai Jingah Public Health Center of 141 cases. This study was to analyze the relationship of age, knowledge, occupation, income, parity, distance of pregnancy, and the number of family members with CED in pregnant women in the working area of Sungai Jingah Public Health Center, Banjarmasin. The research using a cross sectional with a questionnaire. Statistical analysis using chi square test and multiple logistic regression. The study population were pregnant women at Sungai Jingah Public Health Center month period from January to March the year 2019 a number of 289 mothers and sampling of 103 people. The result showed p-value age (p=1.000), knowledge (p=0.001), occupation (p=0.996), income (p=0.006), parity (p=1.000), space of pregnancy (p=0.371), the number of family members (p = 0.017) to CED in pregnant women. Multivariate analysis showed knowledge (Exp.B=5.050), income (Exp.B=2.402), number of family members (Exp.B=3.644) to chronic energy deficiency (CED) in pregnant women. Knowledge, income, and number of family members have a relationship with CED in pregnant women. Age, occupation, parity, and space of pregnancy were not related to CED in pregnant women. The most dominant factor related to CED was knowledge.

Keywords: *knowledge, income, number of family members, chronic energy deficiency, pregnant women*

Introduction

The proportion of pregnant women with CED in Indonesia was 17.3% and the province of South Kalimantan was currently still above the national scale of 18%.[1] Whereas based on data from the Nutrition Status Monitoring (PSG) of South Kalimantan Province in 2017, the percentage of pregnant women with CED in Banjarmasin was 21.5%.[2] The number of pregnant women who did upper arm circumference (LILA) measurements was 14,087 (97.21%) and the number of pregnant women with CED was 1296 (8.94%). Public health center with the highest CED among pregnant women were in the Sungai Jingah Public Health Center area with a percentage of 141 (12.35%).[3]

Chronic Energy Deficiency (CED) in pregnancy the most common cause of bleeding and infection is a major factor maternal mortality. Bleeding ranks the highest cause of maternal death in Indonesia, amounting to 30.3%. In addition, pregnant women who experience chronic energy deficiency also affect the condition of the fetus they contain. CED is caused by several factors including age, education, knowledge, low economic status, workload, health services, health status/history of illness, parity and space of pregnancy, the amount of food consumed in the household, absorption of food, and consumption of iron tablets.

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Materials and Method

This research is a quantitative study with an analytic observational research design through a cross sectional approach. The research analyze the relationship between independent variables (age, knowledge, occupation, income, parity, pregnancy spacing, and number of family members) with dependent variable (CED in pregnant women).

The research location is the working area of Sungai Jingah Public Health Center, Banjarmasin. Study period start from August to October 2019. The population in this study was the pregnant women in Sungai Jingah Public Health Center month period from January to March 2019 of 289 people. The minimum sample needed in this study was 93 people. To avoid the possibility of samples coming out or missing during the study, it is necessary to increase the number of samples by 10% from what was determined. bringing the total sample to 103 pregnant women. Samples were taken by purposive sampling technique. The instrument in this study will use a questionnaire that has been tested for validity first.

Findings and Discussion

Table 1. Bivariate Analysis Results

Variable	CED				Total		Chi-Square
	Yes		No				
	n	%	n	%	N	%	p-value
Age							
Risky	1	16.7	5	83.3	6	100	1.000
No risk	19	19.6	78	80.4	97	100	
Knowledge							
Lack	11	40.7	16	59.3	27	100	0.001
Good	9	11.8	67	88.2	76	100	
Occupation							
Not work	13	19.4	54	80.6	67	100	0.996
Work	7	19.4	2 9	80.6	36	100	
Income							
Low	14	31.8	30	68.2	44	100	0.006
High	6	10.2	53	89.8	59	100	
Parity							
Grandemultipara	1	25.0	3	75.0	4	100	1.000
Multipara	19	19.2	80	80.8	99	100	
Pregnancy Spacing							
Risky	3	33.3	6	66.7	9	100	0.371
No risk	17	18.1	77	81.9	94	100	
Number of family members							
High	9	37.5	15	62.5	24	100	0.017
Low	11	13.9	68	86.1	79	100	

Relationship   of Age with Chronic Energy Deficiency in Pregnant Women

The Fisher's exact test results with p-value 1.000 (p> 0.05) which means there was no relationship between age and chronic energy deficiency (CED) in pregnant women at Sungai Jingah Public Health Center Banjarmasin in 2019. It can be due to the data based on the age of the respondents at most at the age of 20-35 years (94.2%) which is the best age for pregnant women. Reproductive organ systems and cells in the body are in the healthiest and safest conditions, and minimal risks can occur to the mother and fetus, so it is expected that women can undergo a healthy pregnancy. The results of the study are in line with research Risqah (2017) and Musni (2017), where the p-value is 0.15 which means that age is not associated with CED in pregnant women.[4,5]

Relationship of Knowledge with Chronic Energy Deficiency in Pregnant Women

The Chi-square test results with p-value 0.001 (p <0.05), which means that there is a relationship between knowledge and CED in pregnant women at the Sungai Jingah Public Health Center in Banjarmasin in 2019. Mothers who have good knowledge are able to understand balanced nutritional intake, differentiate the types of nutrients in food that must be consumed every day during pregnancy, know the risks that can occur if mothers experience malnutrition, and understand how to improve nutrition and maintain maternal health and fetus during pregnancy, and be able to apply good attitudes and behavior in the selection of food to meet the intake of nutritious food during pregnancy.

PR results of 5.118 (PR>1) which means that mothers with lack of knowledge 5.1 times will experience CED compared to mothers who have good knowledge. Good knowledge about nutritional health will have an impact on maternal behavior in meeting nutritional needs during pregnancy. This condition will have a direct impact on the health of the mother and fetus. The results of this study are strengthened by Triwahyuningsih (2018) where mothers who have less knowledge are 9.7 times more likely to have CED compared to mothers with good knowledge.[6]

Relationship of Occupation with Chronic Energy Deficiency in Pregnant Women

The Chi-square test results with p-value 0.996 (p> 0.05), which means there was no relationship between occupation and CED in pregnant women at the Sungai Jingah Public Health Center Banjarmasin in 2019. Mother's occupation is not associated with CED because work factors are influenced by other factors, namely lack of mother's knowledge, low family income, and high number of family members. The results of this study are in line with the research of Syarifuddin (2013) which states that there is no meaningful relationship between maternal occupation with CED. It can be caused by the activity factors of the respondents are required to do activities outside the home due to workload so as to make them feel more stressed, lifestyle and irregular eating patterns so that it is not impossible if the respondent can risk chronic energy shortages.[7] Mother's busyness is not one obstacle to meet the adequacy of nutrition during pregnancy.[8]

Relationship of Income with Chronic Energy Deficiency in Pregnant Women

The Chi-square test results with p-value 0.006 (p<0.05), which means there was a relationship between income and CED in pregnant women at the Sungai Jingah Public Health Center Banjarmasin in 2019. Low family income will have an impact on the ability of families to meet nutritional needs in the household, families with low incomes tend to limit food consumption to save family expenses. Result of PR 4.112 (PR> 1) means that income is one of the risk factors for CED in pregnant women. Mothers with low family income 4.1 times more likely to experience CED compared to mothers who have family income high. Families with low economic status have a 5.7 times greater risk of pregnant women experiencing CED. It is because economic status or income has always been one of the determining factors in a healthy pregnancy process.[9] Families with a sufficient economy can check their pregnancies regularly, plan for delivery in health workers, and make other preparations properly. The level of income can determine consumption patterns. Limited family income limits the ability of families to buy nutritious food ingredients, thus the level of income plays an important role in determining the nutritional status of pregnant women.[10]

Relationship of Parity with Chronic Energy Deficiency in Pregnant Women

The Fisher-exact test result with p-value 1.000 (p>0.05), which means there was no relationship between parity and CED in pregnant women at the Sungai Jingah Public Health Center Banjarmasin in 2019. It could be due to the fact that based on existing data there was no risk of multipara of 103 pregnant women. The results of this study are in line with Yulianti (2018) that there was no relationship between parity and CED. Even though the risk of the CED occurrence is pregnant women with risk parity, if basically the mother has good knowledge about the nutritional status of pregnant women which is part of an effort to optimize the ability of mothers. It is expected that pregnant women have good nutritional status as well. Widita (2011) also stated that there was no significant relationship between parity and malnutrition in mothers in the third trimester with p-value 0.361.[11]

Relationship of Pregnancy Spacing with Chronic Energy Deficiency in Pregnant Women

The Fisher-exact test result with p-value 0.371 (p>0.05), which means there was no relationship between the space of pregnancy and CED in pregnant women at the Sungai Jingah Public Health Center Banjarmasin in 2019. It was allegedly because the results of the description of the pregnancy spacing was not at risk ≥ 2 years. The results of this study are in line with Wijanti (2016) which states almost all respondents have no risk from pregnancy spacing because other factors such as age and mother's education. Other factors are associated with CED, namely physical work and family income.[12]

Relationship of Family Members with Chronic Energy Deficiency in Pregnant Women

The Fisher-exact test result with p-value 0.017 (p<0.05), which means there was a relationship between the number of family members and CED in pregnant women at the Sungai Jingah Public Health Center Banjarmasin in 2019. The large number of family members is certainly different from the number of small family members in the distribution and distribution of food, the large number of family members will cause the food consumed is insufficient in terms of quantity.

The PR results are 3.709 (95% CI, 1,307-10,529), means that the number of family members is a risk factor for CED in pregnant women. Mothers who have a high number of family members (>4 people) 3.7 times have risk of CED. There was a relationship between the number of family members in the CED incidence of pregnant women. Mothers with a large number of family members have an 8 times greater chance of experiencing CED. It is due to the number of family members or family size will affect consumption patterns. Nutritional status is influenced by the number of family members. The greater the number of family members, the greater the proportion of family expenses for food, and vice versa. The large number of family members without offset high income results in uneven distribution of food in the family.[13]

The most influential factor with the prevalence of CED

Table 2. Final Models of Multivariate Logistic Regression

Independent Variable	p-value	PR
Knowledge	0.003	5.050
Number of family members	0.023	3.644

The results showed that the factor most associated with Chronic Energy Deficiency (CED) in pregnant women was the knowledge variable (PR=5.050). Knowledge plays an important role in one's life, especially in daily behavior, although mothers have a good family income and a low number of family members, but mothers who lack knowledge will affect the behavior of mothers in choosing nutritious food consumption every day. Mother's knowledge about nutrition and health greatly influences the attitude and behavior of mothers to meet nutritional intake during pregnancy. Mothers who have knowledge can better prepare foods with balanced nutrition for mother and fetus and can understand good nutrition of pregnancy according to the nutritional adequacy rate, whereas mothers who had lack of knowledge can cause a person to perform the selection of food the less careful.

Based on research results mothers with good knowledge are able to understand balanced nutritional intake, as well as differentiating the types of nutrients in food that must be consumed every day during pregnancy. In addition, mothers also know the risks that can occur if mothers experience malnutrition, and understand how to improve nutrition and maintain

health during pregnancy. This study is in line with Febriyeni (2017) which shows that knowledge is the most related factor to CED in pregnant women. It can be seen from the Odds Ratio (OR) that mothers with less risk knowledge 12 times more likely to experience CED. The results of this study are also in line with the research of Taslim (2011) which states that mothers with less knowledge about nutrition are at risk 0.25 times more likely to experience CED than mothers with good knowledge. It is due to mothers who have insufficient knowledge to determine the behavior of mothers in choose foods that are consumed every day.

Conclusion

There was a relationship between knowledge and CED in pregnant women. There was a relationship between income and CED in pregnant women. There was a relationship between the number of family members and CED in pregnant women. There was no relationship between age and CED in pregnant women. There was no relationship between occupation and CED in pregnant women. There was no relationship between parity and CED in pregnant women. There was no relationship between the pregnancy spacing and CED in pregnant women. Knowledge variable is the most related factors to CED in pregnant women at the Sungai Jingah Public Health Center in Banjarmasin.

Ethical Clearance: Before conducting the data retrieval, the researchers conducted a decent test of ethics conducted at the Faculty of Medicine, Lambung Mangkurat University to determine that this study has met the feasibility. Information on an ethical test that the study is eligible to continue. The feasibility of the research was conducted to protect the human rights and security of research subjects.

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Conflict of Interest: The authors declare that they have no conflict interests.

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