



## Affecting factors the incidence of chronic energy deficiency (CED) in pregnant women

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### ABSTRACT

Chronic Energy Deficiency (CED) is a condition due to lack of energy and protein intake or the occurrence of imbalance of energy and protein intake in completing the needs of the body that lasts for a long period of time. The prevalence rate in Lampung of CED risk in pregnant women was 21.3%, still below the National figure. The result of the pre-survey at the Ketapang Public Health Center based on data obtained by researcher from 53 pregnant women with CED was dominated by pregnant women with the age of < 20 years and the first pregnancy was 32 pregnant women (60.37%). The research objective was to know the factors that influence the incidence of Chronic Energy Deficiency (CED) in Pregnant Women at the Ketapang Public Health Center in 2022. This research type is quantitative with a case-control design. The population in this study was 53 mothers with CED and 53 mothers who did not experience CED. The sample in this study was the entire population, namely, 53 mothers who experienced CED and 53 mothers who did not experience CED. The analysis used the chi-square test. Results from the study revealed that there is an age correlation (p-value: 0.012 OR: 3.29) and the incidence of anemia (p-value: 0.046 OR: 2.4) with chronic energy deficiency (SEZ) in pregnant women at the Ketapang Public Health Center in South Lampung Regency in 2022. And there is no parity correlation with chronic energy deficiency (CED) in pregnant women at the Ketapang Public Health Center of South Lampung Regency in 2022 (p-value: 0.09). It is expected for the Ketapang Public Health Center to increase socialization on how to prevent the occurrence of CED in pregnant women

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#### Kata kunci:

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### ABSTRAK

*Kekurangan Energi Kronik (KEK) adalah* suatu keadaan akibat kekurangan asupan energi dan protein atau terjadinya ketidak seimbangan asupan energi dan protein dalam memenuhi kebutuhan tubuh yang berlangsung dalam jangka waktu yang lama. Angka prevalensi di Lampung risiko KEK pada ibu hamil sebesar 21,3%, masih dibawah angka Nasional. Hasil pra survey di Puskesmas Rawat Inap Ketapang Berdasarkan data yang diperoleh peneliti dari 53 ibu hamil dengan KEK didominasi oleh ibu hamil dengan usia < 20 tahun dan kehamilan yang pertama yaitu 32 ibu hamil (60,37%). Tujuan dilakukannya penelitian ini adalah untuk mengetahui Faktor – faktor yang mempengaruhi kejadian Kekurangan Energi kronik (KEK) pada Ibu Hamil Di Puskesmas Rawat Inap Ketapang Tahun 2022. Jenis penelitian ini adalah penelitian kuantitatif dengan desain case control. Populasi dalam penelitian ini adalah seluruh ibu hamil TM I di Puskesmas Rawat Inap Ketapang Tahun 2022 yang berjumlah 315. Sampel pada penelitian ini 53 ibu yang mengalami KEK dan 53 ibu tidak mengalami KEK. Analisis yang digunakan adalah uji chi square. Hasil dari penelitian Ada hubungan usia (p value : 0,012 OR : 3,29) dan kejadian anemia (p value : 0,046 OR : 2,4) dengan Kejadian Kurang Energi Kronik (KEK) pada ibu hamil di Puskesmas Rawat Inap Ketapang Kabupaten

Lampung Selatan Tahun 2022. Dan tidak ada hubungan paritas dengan Kejadian Kurang Energi Kronik (KEK) pada ibu hamil di Puskesmas Rawat Inap Ketapang Kabupaten Lampung Selatan Tahun 2022 ( p value : 0,09). bagi Puskesmas Rawat Inap Ketapang untuk meningkatkan sosialisasi tentang cara pencegahan kejadian KEK pada ibu hamil

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## INTRODUCTION

The genesis of Chronic Energy Deficiency (CED) in Lampung Province 2013 was recorded at around 22%, this data decreased in 2018 where pregnant women who undergo CED were recorded at around 15% where this figure was still above the genesis of CED in Indonesia (Basic Health Research, 2018). While the genesis of CED for South Lampung Regency is 8099 (40.84%) pregnant women with CED from the total number of pregnant women 19.831 mothers.

Based on the Profile of Health Office in South Lampung, the genesis of CED in the Public Health center of Inpatient in Ketapang is higher than that of the Public Health Center of Rajabasa. The number of CED cases in pregnant women at the Public Health center of Inpatient in Ketapang was 53 pregnant women, the target number of K1 (New visit) for pregnant women was 315, while in 2020 only 32 pregnant women undergo CED, while at the Public Health Center of Rajabasa the number of genesis in CED of pregnant women was 15 (3.32 %) of the 451 target number of pregnant women.

The results of the pre-survey conducted on July 2021 at the Public Health center of Inpatient in Ketapang. In this case, the distance between pregnancies that are too close is also a contributor to the genesis of CED, namely 9 (16.98%) mothers have a gestational distance of <2 years and the genesis of anemia pregnant women is 21 (39.62%) pregnant women with anemia.

Chronic Energy Deficiency (CED) is a condition resulting from a lack of energy and protein intake or an imbalance in energy and protein intake in meeting the body's needs that lasts for a long time. Chronic Energy Deficiency is a state of malnutrition. Where the condition of the mother suffers from chronic food shortages that result in health problems for the mother in relative terms or more nutrients. Insufficient energy and protein intake is what causes Chronic Energy Deficiency (CED) in pregnant women. Pregnant women are at risk for CED if they have an Upper Arm Circumference <23.5 cm (Supariasa; 2016).

## METHOD

This type of research was a quantitative research with a case control design. The population in this research were all pregnant women with the first trimester at the Public Health center of Inpatient in Ketapang 2022, totaling 315. The sample in this research was 53 mothers who experienced CED and 53 mothers did not. This research was carried out at the Public Health center of Inpatient in Ketapang, South Lampung Regency 2022. Time of this research was carried out on January 2022. The analysis used the chi square test.

## RESULT AND DISCUSSIONS

### a. The Genesis of Chronic Energy Deficiency (CED)

**Table.1**  
Distribution of Respondents Based on the genesis of CED on pregnant women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021

No	CED	Frequency	%
1	Undergo the CED	53	50,0
2	Not undergo the CED	53	50,0
Total		106	100

Table 1 shows that the distribution of the frequency of the genesis of CED from 106 respondents obtained results with a sampling ratio of 1: 1 so that respondents who experienced genesis of CED were 53 respondents (50.0%) and those who did not genesis of CED were 53 respondents (50.0%). The results of this study are in line with Renjani (2017), entitled factors related to the genesis of CED. The author makes a comparison between the number of case samples and controls 1:1, so the number of control samples in this study were 20 respondents. So the total number of samples in this study were 40 respondents, namely 20 case samples (pregnant women who experienced CED) and 20 control samples (pregnant women who did not experience CED). According to the researchers, many factors are associated with the genesis of CED in pregnant women. Nutritional intake is one of the factors that this study did not measure. The incidence of KEK is a chronic or chronic lack of food, which is marked by Upper Arm Circumference 23.5 cm.

### b. Age

**Table.2**  
Distribution of Respondents based on Age of Pregnant Women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021

No	Age	Frequency	%
1	Risk (20&>35 year)	33	31,1
2	Not Risk (20-35 year)	73	68,9
Total		106	100

Table 2 shows that the frequency distribution based on the variable age of pregnant women is dominated by women with age not at risk (20-35 years), namely 73 respondents (68.9%). According to the researchers' assumptions, maternal age is considered to be related to the maturity of the mother's physiological and psychological factors such as acceptance of child pregnancy so that it affects pregnancy care, Age less than 20 years is the age of risk, this is due to a lack of physiological and psychological maturity so that there is a risk of pregnancy complications, one of which is CED.

c. Parity

**Table 3**  
**Distribution of Respondents Based on Parity of Pregnant Women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021**

No	Parity	Frequency	%
1	Risk (> 3)	10	9,4
2	Not Risk (≤3)	96	90,6
<b>Total</b>		106	100,0

Table 3 shows the frequency distribution based on maternal parity, dominated by mothers with parity not at risk (≤3), namely 96 respondents (90.6%). According to the researcher's assumption, maternal parity is one of the risk factors for CED related to the socio-economic conditions of the family that can affect the fulfillment of nutritional intake during pregnancy. The higher the parity of the mother, the higher the economic needs and this will affect the food consumption pattern of the pregnant woman.

d. The Genesis of Anemia

**Table.4**  
**Distribution of Respondents Based on the Genesis of Anemia at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021**

No	The genesis of anemia	Frequency	%
1	Anemia	41	38,7
2	Not anemia	65	61,3
<b>Total</b>		106	100

Table 4 shows the frequency distribution based on the genesis of anemia, dominated by non-anemic mothers, namely 65 respondents (61.3%). According to the researcher's assumption, iron deficiency anemia can be prevented by maintaining a balance between the intake of nutrients needed to maintain balance, in each mother this varies from woman to woman, depending on her reproductive history and the amount of blood loss during menstruation.

e. Correlation between maternal age of pregnant women and the genesis of CED

**Table.5**  
**The Correlation between maternal age and the genesis of chronic energy deficiency (CED) in pregnant women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021**

Maternal Age	Genesis of CED				N	%	P value	OR
	CED		Not CED					
	n	%	N	%				
Risk	23	43,4	10	18,9	33	31,1	0,012	3,29 (1,37- 7,92)
Not Risk	30	56,6	43	81,1	73	68,9		
<b>Total</b>	<b>53</b>	<b>100</b>	<b>53</b>	<b>100</b>	<b>106</b>	<b>100</b>		

Based on table 5 the results of the analysis of the correlation between the age of pregnant women and the genesis of CED obtained from 53 respondents who experienced CED there were 23 respondents (43.4%) with age at risk and 30 respondents (56.6%) with age not at risk, while from 53 respondents who There were 10 respondents (18.9%) who did not undergo CED and 43 respondents (81.1%) who were not at risk. The results of the chi square statistical test obtained p value = 0.012 < 0.05 meaning that there is a correlation between maternal age and Chronic Energy Deficiency (CED) in pregnant women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021. From the results of the analysis, the OR value is also obtained. = 3.29 which means that respondents at risk age (< 20 years and > 35 years), have a 3.29 times greater risk

of experiencing CED than respondents with age not at risk (20-35 years).(Fauziah et al., 2021)

According to the researcher's opinion, maternal age is at risk for the genesis of CED because mothers with a risk age of <20 years and >35 years are high risk factors in pregnancy. Physiological and psychological maturation in mothers aged < 20 years also has an effect during pregnancy and after birth. In this study, of the 53 respondents who experienced CED, there were 30 respondents (56.6%) with age not at risk, this was due to the multifactorial causes of CED including and direct factors, namely food intake, infectious diseases and food consumption patterns, which in this study did not assessment was carried out.(Fauziah & Maulany, 2021)

f. Correlation between parity with the genesis of CED

**Table.6**  
**Correlation between maternal parity and the genesis of chronic energy deficiency (CED) on pregnant women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021**

Parity	Genesis of CED				N	%	p value
	CED		Not CED				
	n	%	n	%			
Risk (> 3)	8	15,1	2	3,8	10	9,4	0,09
Not Risk (≤ 3)	45	84,9	51	96,2	96	90,6	
<b>Total</b>	<b>53</b>	<b>100</b>	<b>53</b>	<b>100</b>	<b>106</b>	<b>100</b>	

Based on table 6 the results of the analysis of the correlation between parity of pregnant women and the genesis of CED obtained from 53 respondents who experienced CED there were 8 respondents (15.1%) with parity at risk (> 3), and 45 respondents (84.9%) in the category of parity not at risk (3), while from 53 respondents who did not experience CED there were 2 respondents (3.8%) with parity at risk and 51 respondents (96.2%) not at risk. The results of the chi square statistical test obtained p value = 0.09 > = 0.05, which means that there is no parity correlation with Chronic Energy Deficiency (CED) in pregnant women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021.

**Table.7**

**The correlation between the genesis of anemia and the genesis of chronic energy deficiency (CED) in pregnant women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021**

Genesis of anemia	Genesis of Anemia				N	%	p value
	CED		Not CED				
	n	%	n	%			
Anemia	26	49,1	15	28,3	41	38,7	0,046
Not anemia	27	50,9	38	71,7	65	61,3	
<b>Total</b>	<b>53</b>	<b>100</b>	<b>53</b>	<b>100</b>	<b>106</b>	<b>100</b>	

The correlation between the genesis of anemia and the genesis of CED was obtained from 53 respondents who experienced CED, there were 26 respondents (49.1%) with anemia, and 27 respondents (50.9%) without anemia, while from 53 respondents who did not experience CED there were 15 respondents (28.3%) with anemia and 38 respondents (71.7%) with no anemia. The results of the chi square statistical test obtained p value = 0.046 < = 0.05, meaning that there is a correlation between the genesis of anemia and Chronic Energy Deficiency (CED) in pregnant women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2021. From the results of the analysis also obtained a value OR = 2.4, which means that respondents who are anemic have a 2.4 times greater risk of experiencing CED than respondents who do not have anemia. (Riantika et al., 2022)

According to the researcher's assumption, anemia in pregnant women in this study is significantly related to the genesis of CED because the genesis of anemia in pregnant women that often occurs is iron deficiency anemia where in addition to additional Fe supplements, adequate nutritional intake can help reduce the genesis of CED in pregnant women. In this study, from 53 respondents who experienced CED there were 27 respondents (50.9%) with no anemia this is because anemia that often occurs during pregnancy is iron deficiency anemia, where in pregnancy the need for maternal iron intake is added to the consumption of Fe tablets. daily, so that iron needs can be overcome, while the genesis of CED, namely chronic or chronic food shortages, is marked by Upper Arm Circumference 23.5 cm.

**CONCLUSION AND SUGGESTION**

The conclusion of this research are as follows, there is a correlation between age and Chronic Energy Deficiency (CED) in pregnant women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2022 (p value: 0.012 OR: 3.29). There is no correlation between parity with Chronic Energy Deficiency (CED) in pregnant

In the opinion of the researchers in this study, there is no correlation between parity and the genesis of CED because parity is not directly related to CED, where mothers with high parity will affect the distribution of nutritional intake for themselves and other family members. Nutritional intake is a direct factor in the incidence of CED, high parity must be balanced with a high family opinion so that the risk of CED can be prevented because of the fulfillment of nutritional intake for pregnant women.

**g. Correlation between the genesis of anemia and the genesis of CED**

women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2022 (p value: 0.09). There is a correlation between the genesis of anemia and the genesis of chronic energy deficiency (CED) in pregnant women at the Public Health Center of Inpatient in Ketapang of South Lampung Regency 2022 (p value: 0.046 OR: 2.4). On the other hand, the suggestions in this research are to improve midwifery services and provide health education regarding nutritional intake in preventing CED.

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