Analysis of Factors Affect the Incidence of Chronic Energy in Pregnant Women in Puskesmas Samata Gowa

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ABSTRACT

Chronic energy deficiency is a lack of energy over a considerable period. Pregnant women who experience chronic energy deficiency will cause complications in the mother and the baby. Incidence Chronic Energy Deficiency in pregnancy globally is 35-75%. 40% of maternal deaths in developing countries are related to chronic energy shortages. Indonesia was the fourth largest after India with the prevalence of 35.5% where south Sulawesi is one of the provinces where there are pregnant women chronic energy deficiency with 17.2% then in Samata Gowa Health Center, there are still 14.4% of pregnant women who experience Chronic Energy Deficiency. The purpose of this study was to find out the factors that influence the incidence of Chronic Energy Deficiency in pregnant women in Samata Gowa Health Center. The research method was observationally analytical with a cross-sectional approach and sampling using a total sampling technique of 60 samples. This study was conducted in February-May 2021 using a data retrieval format. Bivariate analysis using Multiple Linear Regression α=0.05. The results of the bivariate analysis showed there was no meaningful influence between age, parity, occupation, and hemoglobin levels and the incidence of Chronic Energy Deficiency in pregnant women. Although the statistical analysis on each variable there is no meaningful influence. In fact, from the number of 60 samples, there are still 21.7% of pregnant women who experience chronic energy deficiency. Chronic energy deficiency in pregnant women is one of the contributors to maternal and child mortality so it needs attention.

Keywords: Chronic Energy Deficiency Age, Work, Parity, Hemoglobin levels

INTRODUCTION

Achieving good quality of life for families and communities is largely determined by the health of mothers and children where pregnant women are one of the groups prone to nutritional problems. The World Health Organization (WHO) reports that the prevalence of Chronic Energy Deficiency (CED) in pregnancy globally is 35-75%. 40% of maternal deaths in developing countries are related to chronic energy shortages.

The incidence of CED in developing countries is 15-47% with a Body Mass Index (BMI) <18.5%. The country that experienced the highest incidence of CED in pregnant women was Bangladesh at 47%, while Indonesia was the fourth largest after India with a prevalence of 35.5% and the lowest was Thailand with a prevalence of 15-25%. (WHO, 2015).

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According to data from basic health research (RISKESDAS) in 2018, the percentage of CED in pregnant women in Indonesia based on age (year) is: 15-19 years 33.5%, 20-24 years 23.3%, 25-29 years 16.7%, 30-34 years 12.3%, 35-39 years 8.5%, 40-44 years 6.5%. 45-49 years 11.1%. The percentage of CED in pregnant women in south Sulawesi as much as 17.2% indicates that the percentage of chronic lack of energy in pregnant women in south Sulawesi is still high. (Riskesdas, 2018)

According to data obtained from The Samata Gowa Health Center in 2018 the number of pregnant women who experienced CED was 236 people (19%) from a total of 1242 pregnant women, then in 2019 decreased to 142 people (11.3%) from a total of 1251 pregnant women and in 2020 increased to 149 people (14.4%) from a total of 1034 pregnant women.

According to the results of research conducted by Andriani and Susilawati in 2019, 38 respondents with a risky age there were as many as 23 people (60.5%) respondents who experienced CED and of 44 respondents with an age that is not at risk there were 12 people (27.3%) respondents who experienced CED. The results of the spastic test obtained a significant relationship between the age of the mother and the incidence of CED in pregnant women.

According to the results of research conducted by Nurul Istiqomah, et al in 2020, it was stated that from a population of 486 respondents with a sample of 83 respondents, there were 44 respondents (53.0%) who experienced CED, as many as 42 respondents of multipara parity (50.6%), mothers did not work as many as 64 respondents (77.1%) and a history of anemia as many as 43 respondents (51.8%). The results of theastiktic test obtained a significant association between parity, maternal employment status and anemia with the incidence of CED in pregnant women.

Based on the data above the incidence of CED in pregnant women is still relatively high near the target that has been set for CED pregnant women in 2020 which is 16% so that researchers are interested in conducting research on Factors That Affect The Incidence of Chronic Lack of Energy in Pregnant Women in the Working Area of Puskesmas Samata Gowa in 2020.

MATERIAL AND METHOD
Types of research
The type of research used is analytic observational with cross sectional design.
Research Location and Time

This research is located at the Samata Health Center. The research was carried out in February - May 2021.
Population and Sample
The population in this study were 1034 pregnant women with a sample of 60 pregnant women obtained from total sampling data collection techniques.
Data collection
Data collection is done by using using secondary data with research instruments using a data collection format. Data were obtained from the 2020 pregnant women cohort register book.

RESULT AND DISCUSSION
Statistical data processing using SPSS computer software. The statistical test used is Multiple Linear Regression to determine the effect of each independent variable on the dependent variable. If the p-value <0.05 indicates that there is an influence between the independent variable and the dependent variable and vice versa if the p-value> 0.05 indicates that there is no effect between the independent variable and the dependent variable. Data analysis will be carried out using computerized techniques using SPSS. This study uses a significant level of 95%.
RESULT
Univariate Analysis
From the univariate results of each variable, the distribution is obtained as shown in the following table.

Table 1 Frequency Distribution Based on the age of pregnant women at the Samata Gowa Health Center in 2020.

Age	Frequency (n)	Presentation (%)
High risk	17	28.3
Low Risk	43	71.7
Amount	60	100

Based on table 1 shows that from 60 respondents, there are 17 (28.3%) respondents who are classified as high risk age, while respondents with low risk age are 43 respondents (71.7%).

Table 2 Distribution of Frequency Based on Parity of Pregnant Women at the Samata Gowa Health Center in 2020

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parity	Frequency (n)	Presentation (%)
High risk	7	11.7
Low Risk	53	88.3
Amount	60	100

Based on table 2 shows that from 60 respondents, there are 7 respondents (11.7%) who have parity classified as high risk, while respondents with parity classified as low risk as many as 53 respondents (88.3%).

Table 3 Distribution of Frequency Based on LILA Measurement Results for Pregnant Women at the Samata Gowa Health Center in 2020

LILA Measurement Results	Frequency (n)	Presentation (%)
CED pregnant women	13	21.7
Pregnant women are not CED	47	78.3
Amount	60	100

Based on table 3 shows that from 60 respondents, there are 13 people (21.7%) respondents who experience CED, while respondents who do not experience CED are 47 people (78.3%).

Table 4 Frequency Distribution by Employment of Pregnant Women at the Samata Gowa Health Center in 2020

Work	Frequency (n)	Presentation (%)
Does not work	55	91.7
Work	5	8.3
Amount	60	100

Based on table 5.4 shows that of the 60 respondents, there were 55 respondents (91.7%) who did not work (housewives), while the working mothers (traders, tailors and electronic shop keepers) were 5 respondents (8.3%).

Table 5 Distribution of Frequency Based on Hemoglobin Levels of Pregnant Women at the Samata Gowa Health Center in 2020

Hemoglobin levels	Frequency (n)	Presentation (%)
Normal	52	86.7
Anemia	8	13.3
Amount	60	100

Based on table 5 shows that from 60 respondents, there are 52 people (86.7%) who have normal Hb levels, while 8 respondents who have anemia (13.3%).

Bivariate Analysis

From the bivariate results of each variable, the distribution is obtained as shown in the following table

Table 6 Results of the analysis of the effect of age with the incidence of CED in pregnant women in the working area of the Samata Gowa Health Center in 2020

Age	Pregnant Women				Total		Statistics
	CED		No CED				
	F	%	F	%	F	%	
High risk	4	6.7	13	21.6	17	28.3	
Low Risk	9	15	34	56.7	43	71.7	P = 0.921
Amount	13	21.7	47	78.3	60	100	

Based on table 6 shows that from 60 respondents there are 17 respondents (28.3%) who are classified as high risk age, 4 respondents (6.7%) of them have CED and 13 respondents (21.6%) who do not experience CED, while 43 respondents with low risk age are 43. respondents (71.7%), 9 respondents (15%) of whom experienced CED and 34 respondents (56.7%) who did not experience CED.

Based on the results of statistical analysis, the value of P = 0.921, so that p > , the research hypothesis (Ha) is rejected, meaning that there is no significant relationship between maternal age and the incidence of CED in pregnant women in the

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working area of the Gowa Public Health Center in 2020.

Table 7 Results of the analysis of the effect of parity with the incidence of CED in pregnant womenin the working area of the Samata Gowa Health Center in 2020

| Parity | Pregnant Women | | | | Total | | Statistics |
| | CED | | No CED | | | | |
	F	%	F	%	F	%	
Risk parity	2	3.3	5	8.3	7	11.6	
Risk parity	11	18.4	42	70	53	88.4	P = 0.595
Amount	13	21.7	47	78.3	60	100	

Based on table 7 shows that from 60 respondents there are 7 respondents (11.6%) with high risk parity, 2 respondents (3.3%) of whom experience CED and 5 respondents (8.3%) who do not experience CED, while low risk parity is 53 respondents (88.4%), 11 respondents (18.4%) of them experienced CED and 42 respondents (70%) did not experience CED.

Based on the results of statistical analysis, p value = 0.595, so that p > , the research hypothesis (Ha) is rejected, meaning that there is no significant relationship between maternal parity and the incidence of CED in pregnant women in the working area of the Samata Gowa Health Center in 2020.

Table 8 Results of the analysis of the influence of work with the incidence of CED in pregnant women in the working area of the Samata Gowa Health Center in 2020

| Work | Pregnant Women | | | | Total | | Statistics |
| | CED | | No CED | | | | |
	F	%	F	%	F	%	
Does not work	11	18.4	44	73.3	55	91.7	
Work	2	3.3	3	5	5	8.3	P = 0.468
Amount	13	21.7	47	78.3	60	100	

Based on table 8 shows that from 60 respondents there are 55 respondents (91.7%) who do not work, 11 respondents (18.4%) of whom experience CED and 44 respondents (73.3%) who do not experience CED, while as many as 5 respondents (8.3%) who work. 2 respondents (3.3%) of whom experienced CED and 3 respondents (5%) who did not experience CED..

Based on the results of the analysis, the value of p = 0.468, so that p > , the research hypothesis (Ha) was rejected, meaning that there was no significant relationship between mother's work and the incidence of CED in pregnant women in the working area of the Samata Gowa Health Center.
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Table 9 Results of Analysis of the Effect of hemoglobin levels with the incidence of CED for pregnant women in the working area of the Samata Gowa Health Center in 2020

| HB level | Pregnant Women | | | | Total | | Statistics |
| | CED | | No CED | | | | |
	F	%	F	%	F	%	
Normal	10	16.7	42	70	52	86.7	
Anemia	3	5	5	8.3	8	13.3	P = 0.203
Amount	13	21.7	47	78.3	60	100	

Based on table 9, it shows that of the 60 respondents, there are 52 respondents

(86.7%) who have normal Hb levels, 10 respondents (16.7%) of whom have CED and

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42 respondents (70%) who do not experience CED, while those who experience anemia are as many as 8 respondents (13.3%), 3 respondents (5%) of whom experienced CED and 5 respondents (8.3%) who did not experience CED.

Based on the results of statistical analysis, the value of p = 0.203, so that p > , the research hypothesis (Ha) is rejected, meaning that there is no significant relationship between hemoglobin levels and the incidence of CED in pregnant women in the working area of the Samata Gowa Health Center in 2020.

DISCUSSION

1. The effect of maternal age on the incidence of CED in pregnant women in the working area of the Samata Gowa Health Center in 2020.

Table 6 shows that of the 60 respondents there were 13 people who experienced CED. 4 people from high risk age and 9 people from low risk age. When viewed from the number of low-risk ages who experience CED more than high-risk ages. This is because the number of respondents aged low risk is more than respondents aged high risk. However, 4 people of high risk age who experience CED are 23.5% of the total 17 respondents of high risk age, while 9 people of low risk age who experience CED are 20.9% of the total 43 respondents of low risk age. After the statistical test, the p value = 0.921 (P>α) means that there is no significant effect between age and the incidence of CED in pregnant women.

The age factor is not the main factor in the occurrence of CED in pregnant women, but pregnant women with a high risk age (<20 years and age> 35 years) are more at risk for experiencing CED. At the age of the mother <20 years, the reproductive organs are still immature so that apart from the mother requiring extra energy for her pregnancy, the mother also needs energy for the maturation of her reproductive organs, while the pregnant women aged >35 years have decreased organ function, one of which is the digestive organ so that it can affect the nutritional status of the mother. the pregnant. However, those at low risk also have the opportunity to experience CED because the pathophysiology of CED in pregnant women is the lack of energy intake from macronutrients (carbohydrates, protein, fat) and micronutrients, especially vitamin A, vitamin D, folic acid, iron, zinc, calcium, iodine and other micronutrients that begin at childbearing age in adolescence and continue into pregnancy which is characterized by low energy reserves for a long time which can be measured by upper arm circumference (LILA). (Ministry of Health RI, 2015)

This is in line with research by Yayuk Dwi Novitasari, DKK (2019). Based on a sample of 76 people, 18 people (23.6%) had CED and 58 (76.4%) did not. Statistical test results obtained P Value = 0.173 (P>α) so that there is no significant relationship between age and the incidence of CED in pregnant women.

2. The Effect of Parity with the Incidence of CED in Pregnant Women

Table 7 shows that of the 60 respondents there were 13 people who experienced CED. 2 people from high risk parity and 11 people from low risk parity. When viewed from the number of low risk parity who experienced CED more than high risk parity. This is because the number of low risk parity respondents is indeed more than high risk parity respondents. However, 2 high-risk parity people who experienced CED were 28.6% of the total 7 parity-high risk people, while the 11 low-risk parity people who experienced CED were 20.8% of the total 53 low-risk parity respondents. After the statistical test was carried out, the value of p = 0.595 (P>α) meant that there was no significant effect between parity and the incidence of CED in pregnant women.

The high number of parity illustrates the high rate of pregnancy that can cause risks in pregnancy, including CED in pregnant women. The more the number of children owned by the mother, this can affect the fulfillment of the nutritional status of the mother because the time that the mother has is more used to take care of her children, thereby reducing the time to take care of herself, one

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of which is about setting a balanced diet and choosing a balanced diet. the mother must consume during pregnancy so that this can increase the risk of the mother experiencing CED during her pregnancy. (Amiruddin and Hasmi, 2014)

This research is in line with research conducted by Rahmat, et al (2019). Based on a sample of 34 people, 19 people (55.9%) had CED and 15 (44.9%) did not. Statistical test results obtained P Value = 0.968 (P>α) so that there is no significant relationship between parity and the incidence of CED in pregnant women.

3. The Effect of Work with CED Incidence on Pregnant Women

Table 8 shows that of the 60 respondents there were 13 people who experienced CED. 2 of the respondents work and 11 of the respondents do not work. When viewed from the number, respondents who do not work who experience CED are more than respondents who work. This is because the number of respondents who do not work is more than the number of respondents who work. 2 of the working respondents experienced CED by 40% of the total 5 working respondents, while 11 of the unemployed respondents who experienced CED by 20% of the total 55 respondents did not work. After statistical tests were carried out, the value of $p = 0.468$ (P>α) means that there is no significant effect between work and the incidence of CED in pregnant women.

The work done by the mother can affect the health status of the mother, one of which is the nutritional status. Mothers who have a large workload can cause a lack of free time to take care of themselves, one of which is in regulating their diet which will have an impact on the nutritional status of the mother during pregnancy. (Setiadi et al. 2017)

This research is in line with research conducted by Gotri, et al (2017). Based on a sample of 74 people, 27 people (36.4%) had CED and 47 (63.6%) did not. Statistical test

CONCLUSION

Based on the results of research and discussion of the factors that influence the

results obtained P Value = 0.272 (P>α) so that there is no significant relationship between occupation and the incidence of CED in pregnant women.

4. Effect of Hemoglobin Levels with CED Incidence in Pregnant Women

Table 9 shows that of the 60 respondents there were 13 people who experienced CED. 10 people from respondents with normal Hb levels and 3 respondents from respondents who are anemic. When viewed from the number, respondents with normal Hb levels are more prone to CED than respondents who are anemic. This is because the number of respondents with normal Hb levels is indeed more than respondents who are anemic. However, 3 anemic respondents who experienced CED were 37.5% of the total 8 anaemic respondents, while 10 respondents with normal Hb levels experienced CED by 19.2% of the total 52 respondents with normal Hb levels. After statistical tests were carried out, the value of $p = 0.203$ (P>α) meant that there was no significant effect between Hb levels and the incidence of CED in pregnant women.

Lack of Hb levels in the body can cause anemia, resulting in low physical abilities because the body's cells do not get enough oxygen supply. In pregnant women, anemia increases the frequency of complications in pregnancy and childbirth. The risk of maternal death, premature birth, low birth weight, and perinatal mortality increases. With a weak mother's condition, it can also affect the nutritional status of the mother which can increase the risk of CED in her pregnancy. (Fathonah, 2016)

This research is not in line with the research conducted by Istiqomah, et al (2020). Based on a sample of 83 people, 44 people (55%) had CED and 39 people (45%) did not. Statistical test results obtained P Value = 0.000 (P <) so that there is a significant relationship between anemia and the incidence of CED in pregnant women.

incidence of Chronic Energy Deficiency in pregnant women in the working area of the Samata Gowa Health Center in 2020. It can be concluded that:

1. There is no significant effect between age and the incidence of CED in pregnant women. However, from 60 respondents there were still 13 people who experienced CED. 4 respondents (23.5%) out of a total of 17 respondents aged at high risk and 9 respondents (20.9%) from a total of 43 respondents aged at low risk.

2. There is no significant effect between parity and the incidence of CED in pregnant women. However, from 60 respondents there were still 13 people who experienced CED. . 2 respondents (28.6%) out of a total of 7 high risk parity respondents and 11 respondents (20.8%) out of a total of 53 low risk parity respondents.

3. There is no significant effect between work and the incidence of CED in pregnant women. However, from 60 respondents there were still 13 people who experienced CED. . 2 respondents (40%) of the total 5 respondents worked and 11 respondents (20%) of the total 55 respondents did not work.

4. There is no significant effect between Hb levels and the incidence of CED in pregnant women. However, from 60 respondents there were still 13 people who experienced CED. . 3 respondents (37.5%) from a total of 8 respondents were anemic and 10 respondents (19.2%) from a total of 52 respondents had normal Hb levels.

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