

Determinants of Chronic Energy Deficiency in Pregnant Women in Ogan Ilir District

Junisa Anggraini¹, Feranita Utama², Rini Anggraini³
^{1,2,3} Public Health Study Program, Faculty of Public Health,
Sriwijaya University, Ogan Ilir, South Sumatra, Indonesia
Email: rinianggraini@fkm.unsri.ac.id

Abstract

In 2023, South Sumatra Province recorded a quality score of the Food Pattern of Hope (PPH), reaching 94.2, surpassing the national average. However, cases of Chronic Energy Deficiency (CED) among pregnant women remained, with a percentage of 7,4%. CED in pregnant women can lead to the birth of babies with low birth weight (LBW), disrupt fetal growth, and increase the risk of anemia during pregnancy, which can indirectly contribute to prematurity. This study aims to identify the determinant characteristics of CED in pregnant women during the second and third trimesters in Ogan Ilir Regency, South Sumatra Province. The method used is quantitative descriptive analysis. The results of the analysis showed that CED among pregnant women in their second and third trimesters in Ogan Ilir Regency was ten people (9,5%) which occurred in determinant groups with no risk of pregnancy spacing (8,9%), sufficient antenatal care history (11,1%), non-risk maternal age (10,9%), and non-working mothers (9,8%). For the parity variable, five pregnant women with CED (11,9%) were from the high-risk parity category. Regarding the high-risk determinant characteristics, CED was found in low maternal education (15,2%) and low family income (11,2%). Future research is recommended to explore the determinant characteristics of CED more complexly. Additionally, optimal antenatal care (ANC) should be conducted in quantity and quality, emphasizing the importance of enhancing maternal health knowledge. Implementing the recommendation of at least two pregnancy check-ups by a doctor should also be strengthened.

Keywords: Determinant, Chronic Energy Deficiency (CED), Pregnant Woman

INTRODUCTION

The third agenda of the National Medium-Term Development Plan (RPJMN) 2020-2024 aims to improve the quality and competitiveness of human resources by enhancing the health sector (Peraturan Presiden Republik Indonesia Nomor 18, 2020). To achieve this goal, the Ministry of Health of Indonesia focuses on improving various health programs, including maternal health. Improving

maternal health plays a crucial role as a strategic step in supporting the achievement of the RPJMN objectives (Kementerian Kesehatan Republik Indonesia, 2020). One of the maternal health challenges still faced by Indonesia is Chronic Energy Deficiency (CED) among pregnant women. CED occurs when an individual experiences a decline in nutritional status due to a long-term or chronic lack of macro-nutrient

intake (Widyawati & Sulistyoningtyas, 2020). The Mid Upper Arm Circumference (MUAC) measurement, which results in less than 23.5 cm, can indicate pregnant women experiencing CED (Teguh et al., 2019).

The government has taken significant steps to address CED in pregnant women through various programs, such as supplementary feeding (PMT), the distribution of iron tablets (TTD), and strengthening antenatal care (ANC) services at least six times Kementerian Perencanaan Pembangunan Nasional, 2021). In addition, the program to improve food quality in Indonesia has also been implemented, showing positive results, as evidenced by the increase in the Food Pattern of Hope (PPH) score, which rose from 92.9 in 2022 to 94.1 in 2023 (Badan Pangan Nasional, 2024). The prevalence of CED in pregnant women decreased from 11.6% in 2022 to 8.81% in 2023. Although the rate has decreased, this issue must be addressed (Kementerian Kesehatan Republik Indonesia, 2023). In 2023, South Sumatra Province achieved a PPH score of 94.2, surpassing the national average (Badan Pangan Nasional, 2024). The percentage of CED in South Sumatra Province decreased from 7.6% in 2022 (Dinas Kesehatan Provinsi Sumatera Selatan, 2022) to 7.4% in 2023 (Dinkes Provinsi Sumatera Selatan, 2023).

However, this shows that although the food quality in South Sumatra Province has improved, the challenge of CED in pregnant women still exists and requires attention.

Chronic Energy Deficiency (CED) in pregnant women can result in the birth of babies with low birth weight (LBW) (Rusmiati et al., 2023), disrupt fetal growth (Kusumastuti et al., 2023), and increase the risk of anemia during pregnancy (Sandhi & ED, 2021), which can indirectly contribute to prematurity (Delima, 2022). During the first, second, and third trimesters, pregnant women need to receive optimal nutrition to prevent CED and its associated consequences. In the second and third trimesters, the energy needs of pregnant women increase due to the increased blood circulation required to support fetal growth, making this phase more susceptible to CED (Andarwulan et al., 2020);(Humairoh et al., 2023).

CED in pregnant women can be caused by two factors: direct and indirect causes (Angraini et al., 2021). Direct determinants of CED include food intake (C. I. Lestari et al., 2021) and infectious diseases (Aryanti, 2023). Indirect determinants include education (Mijayanti et al., 2020), knowledge (Panjaitan et al., 2022), income (Hayati et al., 2024), occupation (Widyawati & Sulistyoningtyas, 2020), parity (Suryani et al., 2021), age risk, and pregnancy spacing (Sulastri et al.,

2023). Several studies have attempted to identify the causes of CED in pregnant women, but the results are often inconsistent. For example, a study in Pringsewu Regency (Mijayanti et al., 2020) indicated that education significantly influenced CED, while another study at Putri Ayu Health Center (Hasanah et al., 2023) reached the opposite conclusion. Additionally, inconsistencies regarding parity were observed in research conducted in Simpang Limbur Village (Rosita & Rusmimpong, 2022), which found that parity was associated with CED. However, this finding contradicted the results of a study at Cibugel Health Center (Yeti et al., 2023), which reported no link between parity and CED in pregnant women. Differences influence these inconsistencies in population characteristics.

Ogan Ilir Regency in South Sumatra Province has limited research on CED in pregnant women. Although the Food Pattern of Hope (PPH) in this province has shown improvement over the years, the phenomenon of CED in pregnant women persists and requires further investigation into the indirect determinants contributing to this issue. Therefore, this study aims to explore the determinant characteristics of CED in pregnant women during the second and third trimesters in Ogan Ilir Regency.

RESEARCH METHOD

This study is a quantitative descriptive research aimed at describing the determinant characteristics of Chronic Energy Deficiency (CED) in pregnant women. The data used comes from secondary data obtained from research grants from lecturers of the Faculty of Public Health, Sriwijaya University, conducted in May-June 2024. This data includes information on the characteristics of pregnant women in Ogan Ilir Regency, which covers the subdistricts of Pemulutan, Indralaya, Tanjung Raja, Indralaya Utara, and Indralaya Selatan, with a total of 110 respondents. The secondary data used is from the population of pregnant women in the second and third trimesters in Ogan Ilir Regency, and the sample was selected using purposive sampling from respondents who agreed to participate in the study.

In this study, the determinant characteristics of Chronic Energy Deficiency (CED) include family income, antenatal care history, maternal age, pregnancy spacing, maternal occupation, maternal education, parity, and pregnancy check-ups. Data for these variables were collected through direct interviews with respondents, supplemented by supporting notes. The CED variable was measured using Mid Upper Arm Circumference (MUAC), which was directly measured using a MUAC tape measure on the

respondents. The sample size for this study included all respondents with complete data, resulting in 105 out of 110 respondents being included in the data analysis. Five respondents were excluded due to incomplete data on income and antenatal care history variables.

The data were first categorized to analyze the determinant characteristics of CED in pregnant women. Family income was categorized based on the Ogan Ilir Regency's Minimum Regional Wage (UMK) of IDR 3,456,874 (Upah Minimum Kabupaten Ogan Ilir, 2024), with low income ($<$ UMK) and high income (\geq UMK). Maternal age was categorized as high-risk ($<$ 20 years and $>$ 35 years) and non-high-risk (20-35 years) (Kementerian Kesehatan Republik Indonesia, 2021). Pregnancy spacing was categorized as first pregnancy, high-risk ($<$ 24 months), and non-high-risk (\geq 24 months) (Kementerian Kesehatan Republik Indonesia, 2021). The maternal occupation was classified as working and not working. Maternal education was divided into low (Elementary School or up to Junior High School) and high (Senior High School or up to University or college) levels (A. Lestari, 2021). Parity was categorized as high-risk (first pregnancy or parity $>$ 3) and non-high-risk (parity 1 to 3) (Hayati et al., 2024); (Harismayanti et al., 2021). Antenatal care history was categorized as sufficient (if the

second-trimester respondent had at least one visit during the first trimester and the third-trimester respondent had at least one visit during the first trimester and at least two visits during the second trimester) or insufficient (if the minimum visit requirement was not met) (Peraturan Menteri Kesehatan RI Nomor 6, 2024). The CED variable was categorized based on MUAC, with CED indicated by a MUAC $<$ 23.5 cm and no CED with MUAC \geq 23.5 cm (Kementerian Kesehatan Republik Indonesia, 2023). The respondent characteristic analysis categorized the age variable into $<$ 20 years, 20-35 years, and $>$ 35 years. The income variable was categorized into \leq IDR 1,500,000, $>$ IDR 1,500,000–IDR 2,500,000, $>$ IDR 2,500,000–IDR 3,500,000, and $>$ IDR 3,500,000 (Ramadhan et al., 2023). The parity variable was categorized as primigravida (first pregnancy), primipara (1 birth), and multipara (more than one birth) (Des Mones University, 2024). The antenatal care history variable was distributed based on the history of visits during the pregnancy trimesters according to the gestational age of the respondent at the time of the interview. The pregnancy check-up variable was differentiated into those who had and had not visited a doctor or midwife for a pregnancy check-up. This study has obtained ethical approval from the

Research Ethics Committee with the number 384/UN9.FKM/TU.KKE/2024.

RESEARCH RESULT AND DISCUSSION

RESULT

Table 1. Frequency Distribution of Respondents' Sociodemographic Characteristics

Variable	Frequency (n=105)	Percentage (%)
Age		
<20 Years	2	1,9
20-35 Years	92	87,6
>35 Years	11	10,5
Income		
≤Rp1.500.000	39	37,1
>Rp1.500.000-Rp2.500.000	26	24,8
>Rp2.500.000-Rp3.500.000	24	22,9
>Rp3.500.000	16	15,2
Education		
Low	46	43,8
High	59	56,2
Mother's Occupation		
Working	13	12,4
Not Working	92	87,6

Data Source: Secondary Data from the Faculty of Public Health, Sriwijaya University Faculty Grant Research

The univariate analysis results in Table 1 show the sociodemographic characteristics of the respondents. Most respondents (87,6%) were pregnant at a non-risk age, specifically between 20-35 years. Most respondents (37,1%) had an income of ≤ IDR 1,500,000. A total of 59

respondents (56,2%) had higher education, with most of them having completed senior high school (SMA) or equivalent and some having attended higher education institutions (PT). Nearly all respondents (87.6%) were unemployed or engaged in household duties.

Table 2. Frequency Distribution of Respondents' Obstetric History

Variable	Frequency(n=105)	Percentage (%)
Pregnancy Trimester		
Trimester II	49	46,7
Trimester III	56	53,3
Caterogy CED		
CED	10	9,5
Not CED	95	90,5
Pregnancy Interval		
First Pregnancy	41	39
Risky (<24 monts)	8	7,6
Not Risky (≥ 24 monts)	56	53,3
Parity		
Primigravida (First Pregnancy)	41	39,1
Primipara (One Previous	29	27,6

Birth)		
Multipara (More Than One Previous Birth)	35	33,3

Data Source: Secondary Data from the Research Grant Study by the Faculty of Public Health, Universitas Sriwijaya.

The analysis results in Table 2 show that out of the total number of respondents during the study period, 49 (46,7%) were in the second trimester of pregnancy, and 56 (53,3%) were in the third trimester. Meanwhile, ten respondents (9,5%)

experienced Chronic Energy Deficiency (CED). Most respondents (53,3%) had a pregnancy interval considered low risk, and most respondents were pregnant with their first child or were primigravida, with 41 individuals (39,1%).

Table 3. Frequency distribution of respondents' Antenatal Care (ANC) history*

History Antenatal Care (ANC)	Trimester II*	Trimester III*	Total
First Trimester ANC Visit (Min.1x)			
Yes	45 (91,8%)	51 (91,1%)	96 (91,4%)
No	4 (8,2 %)	5 (8,9 %)	9 (8,6%)
Total	49 (100%)	56 (100%)	105 (100%)
Second Trimester ANC Visit (Min.2x)			
Yes	49 (100%)	48 (85,7%)	97 (92,4%)
No	0 (0%)	8 (14,3 %)	8 (7,6%)
Total	49 (100%)	56 (100 %)	105 (100%)
Pregnancy Check-up			
	Trimester II*	Trimester III*	Total
Doctor			
Ever	12 (24,5%)	14 (25%)	26 (24,8%)
Never	37 (75,5%)	42 (75%)	79(75,2%)
Total	49 (100%)	56 (100%)	105 (100%)
Midwife			
Ever	49 (100%)	56 (100%)	105 (100%)
Never	0 (0%)	0 (0%)	0 (0%)
Total	49 (100%)	56 (100%)	105 (100%)

* The pregnancy age of the respondents at the time of the interview

Source of data: Secondary data from the Faculty of Public Health, Sriwijaya University Lecturer Grant Research.

The analysis results in Table 3 of the respondents' Antenatal Care (ANC) history show that among respondents in their second trimester, 45 (91,8%) met the recommended ANC visits during the first trimester, with at least one visit. Among respondents in their third trimester, 51 (91,1%) met the recommended ANC visits

during the first trimester, and 48 (85,7%) met the recommended ANC visits during the second trimester. For respondents in their second trimester, 12 (24,5%) had visited a doctor for a pregnancy check-up, while 14 (25%) in their third trimester had visited a doctor. All respondents (100%) had visited a midwife for a pregnancy

check-up.

Table 4. Characteristics of Chronic Energy Deficiency (CED) Determinants in Pregnant Women in the Second and Third Trimester in Ogan Ilir District

Variable	Category CED		Total
	CED	Not CED	
Pregnancy Interval			
First Pregnancy	5 (12,2%)	36 (87,8%)	41 (39%)
Risky	0 (0%)	8 (100%)	8 (7,6%)
Not Risky	5 (8,9%)	51 (91,1%)	56 (53,3%)
Category ANC			
Insufficient	0 (0%)	15 (100%)	15 (14,3%)
Sufficient	10 (11,1%)	80 (88,9%)	90 (85,7%)
Education			
Low	7 (15,2%)	39 (84,8%)	46 (43,8%)
High	3 (5,1%)	56 (94,9%)	59 (56,2%)
Mother Age			
Risky	0 (0%)	13 (100%)	13 (12,4%)
Not Risky	10 (10,9%)	82 (89,1%)	92 (87,6%)
Income			
Low (<UMK)	10 (11,2%)	79 (88,8%)	89 (84,8%)
High (≥ UMK)	0 (0%)	16 (100%)	16 (15,2%)
Parity			
Risky	5 (11,9%)	37 (88,1%)	42 (40%)
Not Risky	5 (7,9%)	58 (92,1%)	63 (60%)
Mother's Occupation			
Working	1 (9,5%)	12 (92,3%)	13 (12,4%)
Not Working	9 (9,8%)	83 (90,2%)	92 (87,6%)
Pregnancy Check-up			
Doctor	0 (0%)	26 (100%)	26 (24,8%)
Midwife	10 (10%)	69 (87,3%)	79 (75,2%)
Total	10 (9,5%)	95 (90,5%)	105 (100%)

Source of data: Secondary data from the Faculty of Public Health, Sriwijaya University Lecturer Grant Research

The results of the analysis of the characteristics of Chronic Energy Deficiency (CED) in pregnant women can be seen in Table 4. The highest number of respondents experiencing CED was among those with low education (elementary school or up to junior high school), with seven respondents (15,2%). All respondents experiencing CED had low income, totaling ten people (11,2%). Among all categories of risky parity (first pregnancy or primigravida, and parity > 3 children), 5 of them experienced CED (11,9%). The

respondents who did not experience CED followed the recommendation of having pregnancy check-ups with a doctor (100%).

DISCUSSION

The results of this study highlight that the characteristics of the determinants of chronic energy deficiency (CED) are primarily found in the non-risk group. Based on the analysis, CED occurred in mothers of non-risk age (20-35 years) with ten respondents (10,9%). According to existing studies, the mother's age is related

to CED in pregnant women. Risky ages <20 or >35 years result in poor maternal health, as the physical condition of young mothers may not be fully developed, and older mothers (>35 years) may not have the same physical condition as mothers aged 20-35 years (Yeti et al., 2023). However, some studies reveal that the mother's age is not always correlated with CED, such as the study at Puskesmas Pegayut in Ogan Ilir, which found no relationship between the mother's age and the occurrence of CED in pregnant women (Suryani et al., 2021).

The variable of employment is often associated with CED. However, in the study at Puskesmas Menggamat in South Aceh, CED was not related to whether the mother worked during pregnancy. It is suspected that other factors that influence CED or mothers who do not work may have a heavier physical activity load in their daily routines (Safitri & Husna, 2022). This study shows that nearly all cases of CED occurred in the group of mothers who do not work (homemakers), with nine respondents (9.8%).

Family income, or the amount of money earned to meet the needs of all family members, is often linked to the occurrence of CED in pregnant women. This is because income affects the purchasing power for food within the family. Low income will decrease the ability to purchase food, ultimately

impacting CED in pregnant women (Hayati et al., 2024). However, a study at Puskesmas Rambah found no relationship between income and CED (Aldriana, 2021). In this study, income was categorized based on monthly earnings: low income if \leq Rp1,500,000, medium income if $>$ Rp1,500,000 - Rp2,500,000, high income if $>$ Rp2,500,000 - Rp3,500,000, and very high income if $>$ Rp3,500,000 per month (Ramadhan et al., 2023). According to this classification, most of the respondents had low income. The analysis of CED determinant characteristics for income, based on the Provincial Minimum Wage (UMK) of Ogan Ilir, showed that CED occurred in respondents with low income (<UMK) at 11,2%. Low income is associated with the quantity and quality of food purchases. When the quantity and quality of food are low, the nutritional intake of pregnant women is limited, which can contribute to chronic energy deficiency (CED).

The analysis of this study's findings shows that pregnant women with Chronic Energy Deficiency (CED) mainly belong to the category of pregnancy intervals that are considered non-risk (8,9%) and occur in the group with a first pregnancy (12,2%). However, several studies have found that CED in pregnant women is associated with short pregnancy intervals or risky intervals. Meeting nutritional needs during

subsequent pregnancies becomes more challenging when pregnancies occur close together. In such situations, the mother's body may not be fully prepared, leading to significant energy depletion, and if food intake is inadequate, the risk of CED increases (Alwan, 2023). Some studies also explain that there is no significant relationship between pregnancy intervals and CED, such as a study in Gunung Sindur, which found that the risk of CED in pregnant women occurred in the non-risk pregnancy interval group (≥ 2 years) (Marjan et al., 2021).

Antenatal Care (ANC) visits refer to the number of visits a pregnant woman makes during pregnancy to undergo health checks according to the established standards. The minimum visits include one visits during the first trimester, two visit during the second trimester, and three visits during the third trimester, with at least two visits involving doctor examinations (on visit 1 in the first trimester and visit 5 in the third trimester) (Kementerian Kesehatan Direktorat Jenderal Pelayanan Kesehatan, 2022). Pregnant women with adequate ANC history are those who, when interviewed, had completed at least one pregnancy check-ups during the first trimester if they were in the second trimester, and at least one check-ups in the first trimester and two check-up in the second trimester if they were in the third

trimester. A history of inadequate ANC occurs when a respondent had only one or no check-ups in the first trimester for the second-trimester group or had fewer than one check-ups in the first trimester and fewer than two check-up in the second trimester for the third-trimester group. The majority, 85,7%, of respondents were categorized with adequate ANC history due to meeting the minimum check-up requirements per health service guidelines, as indicated in their KIA (Maternity and Child Health) book. ANC visits are associated with the occurrence of CED in pregnant women because ANC can detect abnormalities in both the mother and the fetus from the early stages, including issues related to CED (D. S. Lestari et al., 2023). However, a study at Puskesmas Betungan in Bengkulu City found no relationship between ANC and CED, as ANC was often not performed. The respondents in this study were not first-time mothers, so they felt it was unnecessary to visit ANC (Khairani et al., 2023). The findings of this study indicate that CED in pregnant women occurred even in those with an adequate ANC history (11,1%). This finding suggests that the quantity of ANC visits may not necessarily identify the occurrence of CED. Although ANC visits were conducted, they may have needed to follow the proper standards or guidelines. The quality of ANC examinations is influenced by the facilities

and services available at health service centers. ANC exams must not only meet the quantitative requirements but also fulfill the quality aspects, which include comprehensive checks like measuring Mid-Upper Arm Circumference (LILA), blood pressure measurement, provision of iron tablets (TTD), immunization, and other necessary examinations (Camelia et al., 2020).

The analysis of this study finds that pregnant women with Chronic Energy Deficiency (CED) are those who have never had their pregnancies checked by a doctor, whether a general practitioner or an obstetrician. This indicates that despite meeting the quantity requirement for Antenatal Care (ANC), some women still need to meet the minimum requirement of having at least two doctor consultations. A minimum of two doctor visits is recommended because these provide more advanced technological facilities and infrastructure, enabling a more specific observation and evaluation of the pregnant woman's health. This type of check-up is also more likely to identify potential risks in pregnancy, such as CED, anemia, and other pregnancy complications. These high-risk conditions can be addressed more effectively and comprehensively during examinations (Kementerian Kesehatan Direktorat Jenderal Pelayanan Kesehatan, 2022).

This study reveals that CED is more prevalent among women with low educational backgrounds (15,2%), particularly those who had only completed elementary school (SD) or junior high school (SMP). Education is often closely linked to a person's health. Knowledge can be enhanced or changed through higher levels of education. As education levels increase, individuals' understanding and awareness also improve (Hasanah et al., 2023). Research shows that education can improve health; individuals with higher education are more likely to accept new information and have broader knowledge. For instance, a study in the United States found that individuals with higher education tend to purchase food with better nutritional quality. This indicates that education is directly related to an individual's nutritional status (Ghazaryan et al., 2023). Education is often associated with the risk of CED in pregnant women. Women with low education (Elementary School or up to Junior High School) are 16,25 times more likely to experience CED compared to those with higher education (Senior High School or up to University or college). This is because higher levels of education correlate with better knowledge about meeting nutritional needs for themselves and their babies (Mijayanti et al., 2020).

The number of children a woman has (parity) is also linked to the occurrence of chronic energy deficiency in pregnant women. This study found that CED occurred in women with risky parity (first pregnancy and parity >3) in 5 respondents (11,9%), and CED was also found in

women with non-risk parity (parity 1 to 3) in 5 respondents (7,9%). Several studies have indicated a relationship between parity and CED. CED is often found in primiparous women (first-time pregnancies) due to the lack of previous pregnancy experience (Hayati et al., 2024). Other studies have found a connection between high parity and CED, as high parity is linked to reduced uterine capacity, where the fetus develops (Rosita & Rusmimpong, 2022). However, some studies have found no correlation between parity and CED (Yeti et al., 2023).

The occurrence of Chronic Energy Deficiency (CED) in pregnant women is a complex phenomenon and requires analysis from multiple perspectives. This study involved various determinants of CED but did not adopt a holistic approach. Many other factors that could contribute to CED in pregnant women remain unexplored. Other studies have identified factors such as Clean and Healthy Behavior (PHBS) (Yeti et al., 2023), cultural food taboos (Alifka, 2020), and spousal support (Mansoben & Gurning, 2022) as determinants of CED. Although the quality of the food pattern expectations (PPH) in South Sumatra Province is high, this reflects a different quality in Ogan Ilir Regency. Therefore, determinants directly related to food intake that were not observed in this study should be explored further.

CONCLUSION

The results of the analysis showed that the number of pregnant women with SEZ in the second and third trimesters in Ogan Ilir Regency was ten people (9.5%). Pregnant women in the second and third trimesters in Ogan Ilir Regency who experience Chronic Energy Deficiency (CED) mostly come from groups with non-risk determinant characteristics. CED was found in pregnant women with non-risk pregnancy intervals (8,9%), adequate Antenatal Care (ANC) history (11,1%), non-risk age groups (10,9%), and women who were not working (9,8%). However, regarding parity, five pregnant women with CED (11,9%) came from the high-risk parity category. The risk determinants were found in education and family income variables, with CED occurring in women with low education levels (15,2%) and low family income (11,2%). CED was also found in respondents who had never had their pregnancies checked by a doctor.

Future research is recommended to examine the determinants of CED in pregnant women more comprehensively. It should not only focus on direct and indirect determinants but also consider cultural and psychosocial aspects and even deeper factors such as daily activity patterns and burdens that mothers experience.

In terms of health services, Antenatal Care (ANC) must be carried out optimally,

addressing both quantity and quality aspects. Additionally, knowledge regarding maternal health needs to be strengthened. The implementation of the Ministry of Health's recommendations should be reinforced, particularly regarding the requirement for at least two doctor visits during pregnancy. This examination aims to monitor the mother's health more specifically so that if high-risk pregnancy conditions like Chronic Energy Deficiency (CED) are detected, immediate and more comprehensive intervention can be provide (Kementerian Kesehatan Direktorat Jenderal Pelayanan Kesehatan, 2022).

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