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The Relationship between Pregnancy Spacing and Parity with Incidence of Chronic Energy Deficiency (CED) in Pregnant Women

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Abstract. One of the nutritional problems in pregnant women that is important to address is Chronic Energy Deficiency (CED). CED can cause anaemia, bleeding, the mother does not gain weight normally, and contracting infectious diseases. This study aims to determine the relationship between pregnancy spacing and parity with the incidence of CED in pregnant women. Quantitative research with cross-sectional design. The study was conducted on pregnant women in Jambi City in 2024, totalling 98 people. Data analysis using Chi Square test. The results showed that there was a significant relationship between pregnancy distance (0.034) with the incidence of CED in pregnant women. There is no relationship between parity (0.340) with the incidence of CED in pregnant women. It is concluded that there is a relationship between pregnancy spacing and the incidence of SEZ in pregnant women. It is expected for pregnant women to set a safe pregnancy distance that is above 2 years from the previous pregnancy, in addition it is also recommended to the Health Office and Puskesmas to often educate to increase the knowledge of pregnant women about the prevention and treatment of CED .

Keywords: Pregnancy, Spacing, Parity, Severity, Pregnant.

1. INTRODUCTION

One of the nutritional problems in pregnant women that is important to address is chronic energy deficiency (CED). Chronic energy deficiency in pregnant women is a condition in which a mother suffers from a chronic food deficiency that results in health problems, so that the increased nutritional needs during pregnancy cannot be fulfilled. Pregnant women who are at risk of experiencing CED can be seen from the measurement of Upper Arm Circumference (LILA) which is less than 23.5 cm (Utami, et.al, 2020).

Based on data from the World Health Organization (WHO) in 2015, it is known that the prevalence of CED in pregnant women globally is 35%-75%. WHO recorded 40% of maternal deaths related to the incidence of CED. In developing countries, the prevalence of CED (Bangladesh, India, Indonesia, Nepal, Sri Lanka, Myanmar, and Thailand) is 15%-47% with (BMI < 18.5). The highest prevalence of countries experiencing CED is Bangladesh 47% and the fourth largest is Indonesia after India 35% and the lowest is Thailand 15%-25% (Manik & Rindu, 2017).

According to the results of the Basic Health Research (Riskesdas) in 2018, it is known that the prevalence of CED risk in pregnant women in Indonesia is 17.3% found in adolescents (15-19 years old). This figure decreased when compared to the 2013 Riskesdas of 24.2%. However, despite the decrease, CED is still an important nutritional problem to be addressed due to its impact (Kemenkes RI, 2018). In addition, based on the source of routine report data collected from 34 provinces, it shows that the percentage of pregnant women at risk of CED in

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2020 is 9.7%. From this data, it is also known that the number of pregnant women with CED in Jambi Province is 7.2% (Kemenkes RI, 2021).

There are several factors that can influence the incidence of CED in pregnant women. These factors include direct factors (food intake or consumption patterns and infections) and indirect factors (socioeconomic factors including family income, maternal education, maternal knowledge, biological factors including age of pregnant women, pregnancy spacing and behavioural factors) (Supariasa, 2016).

Chronic Energy Deficiency (CED) has various impacts on pregnant women. These include anaemia, bleeding, not gaining weight normally, and infection. Meanwhile, the effect of CED on childbirth can result in difficult and prolonged labour, premature labour, bleeding after childbirth, and surgical delivery tends to increase. Suffocation of pregnant women can affect the process of fetal growth and can cause miscarriage, abortion, stillbirth, neonatal death, congenital defects, anaemia in infants, intrapartum asphyxia (death in the womb), low birth weight (LBW) (Sumantri, 2009).

The number of cases of CED among pregnant women in Jambi Province in the last 3 years was 3,083 cases (2021), 4,290 cases (2022) and 3,752 cases (2023) (BPS, 2024). This shows that there are still many incidences of CED in pregnant women in Jambi Province in general and in Jambi City in particular. In an effort to overcome CED in pregnant women, there has been a Supplementary Feeding Programme (PMT) to meet the nutritional needs of mothers during pregnancy. The coverage of supplementary feeding for pregnant women with CED in 2022 is 96.81%. The six districts with the highest coverage of supplementary feeding for women with CED are Bungo, East Tanjung Jabung, Muaro Jambi, West Tanjung Jabung, Sungai Penuh, and Sarolangun at 100.0%. Meanwhile, the district/city with the lowest achievement was Jambi City at 88.67% (Jambi Provincial Health Office, 2023). However, with the still found cases of CED in pregnant women, this proves that there is still a need for research to explore the various factors that cause CED in pregnant women so that these factors are expected to provide solutions to prevent or treat CED in pregnant women quickly and accurately.

2. LITERATURE REVIEW

There are several previous similar studies related to the relationship between pregnancy spacing and parity with the incidence of chronic energy deficiency (CED) in pregnant women. One of them is research by Nugraha, et.al (2019) on the relationship between the distance of pregnancy and the number of parities with the incidence of chronic energy deficiency (CED) in pregnant women in Kupang City. Then research by Tanjung & Nani (2022) on the relationship between the characteristics and behaviour of pregnant women in fulfilling nutritional needs with the incidence of chronic energy deficiency (CED). Furthermore, there is also research conducted by Mariani, et.al (2023) on the relationship between knowledge and parity with the incidence of chronic energy deficiency (CED) in pregnant women in the South Amuntai Health Centre Working Area of Hulu Sungai Utara Regency.

3. METHODS

The type of research in this study is an analytical survey with a *cross sectional* design. *Cross sectional* research is to see the relationship between independent variables (birth spacing and parity) with the dependent variable (incidence of CED in pregnant women). This study was conducted in the city in 2024. The sample in this study were pregnant women in Jambi City with a total sample of 98 respondents. Data collection was carried out *purposively* and the sample was also selected by considering the inclusion and exclusion criteria. Data analysis was carried out univariately to see the frequency distribution of research variables, bivariate analysis using the Chi Square test.

4. RESULTS

Based on the results of univariate analysis of the research variables. The results of the study can be seen in table 1 below.

Table 1. Frequency Distribution of Research Variables

Variables		n	%
CED	Yes	75	76,5
	No	23	23,5
Age (Year)	< 20 & > 35	31	31,6
	20-35	67	68,4
Education	Low (< high school)	22	22,4
	High (≥ high school)	76	77,6
Revenue	Low	72	73,5
	High	26	26,5
Parity	Nulliparous (0)	51	52,0
	Primiparous (1)	24	24,5
	Multiparous (>1)	23	23,5
Pregnancy Spacing	At risk (≤2)	53	54,1
(Years)	Not at Risk (>2)	45	45,9

In Table 1, it is known that out of 98 respondents, 76.5% of pregnant women experienced SEZ, 68.4% were in the non-risk category (20-35 years old), 77.6% were in the high education category (≥ high school), 73.5% were in the low income category (<UMK Rp3,387,064), 52% were in the nulliparous category (never gave birth), 54.1% were in the risky pregnancy distance (>2 years) .

Analysis of the relationship between the variables of pregnancy spacing and parity with the incidence of chronic energy deficiency (CED) in pregnant women in Jambi City. The results of bivariate analysis using the chi square test can be seen in table 2 below. Relationship between Determinant Variables and the Incidence of SEZ in Pregnant Women

Table 2. Relationship between Determinant Variables and the Incidence of CED in Pregnant Women

Variabel	CED Pregnant Women				P-Value
	Yes		No		
	n	%	n	%	
Parity					
Nulipara	41	80,4	10	19,6	0,340
Primiparous	19	79,2	5	20,8	
Multiparous	15	65,2	8	34,8	
Pregnancy Spacing					
At risk	45	84,9	8	15,1	0,034
Not at risk	30	66,7	15	33,3	

Table 2 shows that there is a significant association between pregnancy spacing (0.034) and chronic energy deficiency (CED) in pregnant women. In contrast, there is no significant association between parity (0.34) and the incidence of chronic energy deficiency (CED) in pregnant women.

5. DISCUSSION

Based on the results of the study, it is known that there is a significant relationship between the distance of pregnancy and the incidence of chronic energy deficiency (CED) in pregnant women. It is also known that there is no significant relationship between parity and the incidence of chronic energy deficiency (CED) in pregnant women. The factor of pregnancy distance can affect the occurrence of CED, if the distance of pregnancy is less than 2 years it will be at risk of experiencing CED because the mother does not get the opportunity to improve her own body (Husada, 2020).

Pregnancy distance is associated with the incidence of chronic energy deficiency (CED) in pregnant women. The results of the study are in line with research by Nugraha, et.al (2019) which found that pregnancy distance has a relationship with the incidence of SEZ in pregnant women with a value of P = 0.000. Likewise, research conducted by Tanjung & Nani (2022) showed that the distance of pregnancy was related to the incidence of CED in pregnant women at the Sigambal Health Centre, South Rantau District, Labuhanbatu Regency (p=0.018). Similarly, Alwan's research (2024) showed that pregnancy spacing is a risk factor for chronic energy deficiency (CED) in pregnant women in the working area of Poasia Community Health Centre, Kendari City. Pregnancy spacing that is too close (< 2 years) will cause low fetal or child quality and will also be detrimental to maternal health. Too close a childbirth interval will cause the mother to not get the opportunity to repair her own body where she needs enough energy to recover after giving birth to her child. Pregnant women have to recover after giving birth which requires a lot of additional energy for the next pregnancy so that this situation can cause mothers to experience chronic energy deficiency (CED) (Baliwati, 2019).

Based on the results of the study, it is known that there is no significant relationship between parity and the incidence of chronic energy deficiency (CED) in pregnant women. Similar results with research conducted by Nugraha, et.al (2019) that the results obtained the number of parities is not related to the incidence of CED in pregnant women (0.968) in Kupang City. However, the results differ from the research conducted by Mariani, et.al (2023) on the

relationship between knowledge and parity with the incidence of chronic energy deficiency (CED) in pregnant women in the South Amuntai Puskesmas Working Area, Hulu Sungai Utara Regency in 2023, where the results show that there is a relationship between parity and the incidence of chronic energy deficiency (CED) in pregnant women. Parity is the status of a woman in relation to the number of children who have been born. However, although in this study it was not significantly related, based on several studies it is known that parity which is included in high risk factors in pregnancy is grandemultipara, where this can lead to conditions affecting the optimisation of the mother and fetus in the pregnancy at hand (Manuaba et al., 2017). High maternal parity or too frequent pregnancies can deplete the body's nutritional reserves, too close a distance of pregnancy causes the mother not to get the opportunity to repair the body after childbirth, pregnant women with high workloads also need more energy because their energy reserves are divided for themselves, the fetus and their work.

6. CONCLUSION

Based on the results of the study, it is known that there is a significant relationship between pregnancy spacing and the incidence of chronic energy deficiency (CED) in pregnant women. Furthermore, it is expected that related parties such as the Puskesmas and the Health Office should routinely provide education/counselling about the health of pregnant women, setting safe pregnancy spacing, including the use of postpartum contraception in order to prevent the risk of increasing maternal mortality rates (MMR).

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