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ANALYSIS OF FACTORS RELATED TO THE INCIDENT OF CHRONIC ENERGY DEFICIENCY (CED) IN PREGNANT WOMEN

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ABSTRAK : ANALISIS FAKTOR YANG BERHUBUNGAN DENGAN KEJADIAN KURANG ENERGI KRONIS (KEK) PADA IBU HAMIL

Latar Belakang : Kurang energi kronis (KEK) pada kehamilan merupakan masalah gizi di Indonesia. Kontribusi dan terjadinya KEK pada ibu hamil akan memengaruhi tumbuh kembang janin. Ibu hamil dengan masalah gizi dan kesehatan berdampak terhadap kesehatan dan keselamatan ibu dan bayi serta kualitas bayi yang dilahirkan. Prevalensi risiko KEK di kota Bandar Lampung pada wanita hamil sebesar 17,36% dan wanita tidak hamil 17,02%. Salah satu puskesmas di Kota Bandar Lampung yakni Puskesmas Way Kandis di tahun 2022, terdapat ibu hamil dengan KEK sebanyak 48 ibu hamil.

Tujuan : Menganalisis faktor yang berhubungan dengan kejadian KEK pada ibu hamil di wilayah Puskesmas Way Kandis Kota Bandar Lampung.

Metode : Penelitian ini dilakukan dengan pendekatan *cross sectional,* dengan sampel ibu hamil KEK di Wilayah Puskesmas Korpri. Analisis statistik yang akan digunakan dalam penelitian ini adalah uji *chi-square.*

Hasil : hasil penelitian menunjukkan bahwa variabel yang paling berhubungan dengan kejadian KEK yaitu ibu hamil dengan Paritas > 2 anak dengan nilai p 0,001<0,05, kemudian ibu hamil dengan gizi kurang nilai p 0,001<0,05, dan ibu hamil dengan infeksi penyakit, nilai p 0,004 <0,05. Untuk variabel yang tidak berhubungan adalah umur, jarak kelahiran, serta usia kehamilan.

Kesimpulan : variabel yang paling berhubungan dengan kejadian KEK yaitu ibu hamil dengan Paritas > 2 anak dengan nilai p 0,001<0,05.

Saran : Pentingnya pendidikan kesehatan mengenai asupan gizi pada ibu hamil dalam mencegah terjadinya kejadian Kurang Energi Kronis (KEK) pada ibu hamil, dapat memengaruhi tumbuh kembang janin, sehingga dapat mencegah terjadinya komplikasi pada saat persalinan.

Kata kunci : Ibu hamil, KEK, malnutrisi

ABSTRACT

Background: Chronic energy deficiency (CED) in pregnancy is a nutritional problem in Indonesia. The contribution and occurrence of CED in pregnant women will affect the growth and development of the fetus. Pregnant women with nutritional and health problems have an impact on the health and safety of the mother and baby, as well as the quality of the baby born. The prevalence of CED risk in the city of Bandar Lampung in pregnant women is 17.36% and in non-pregnant women is 17.02%. One of the community health centers in Bandar Lampung City is the Community Health Center Way Kandis. In 2022, there were 48 pregnant women with CED.

Objective: To analyze factors related to the incidence of CED in pregnant women in the Way Kandis Community Health Center area, Bandar Lampung City.

Method: This research was conducted using a *cross-sectional approach* with a sample of KEK pregnant women in the Korpri Community Health Center area. The statistical analysis that will be used in this research is the *chi-square test.*

Results: The results of the study show that the variables most related to the incidence of CED are pregnant women with parity > 2 children with a p value of 0.001<0.05, then pregnant women with malnutrition with a p value of 0.001<0.05, and pregnant women with infectious diseases. with a p value of 0.004<0.05. Unrelated variables are age, birth interval, and gestational age.

Conclusion: The variable most related to the incidence of CED is pregnant women with parity > 2 children, with a p value of 0.001 <0.05.

Suggestion: The importance of health education regarding nutritional intake for pregnant women in preventing the occurrence of chronic energy deficiency (KEK) in pregnant women can affect the growth and development of the fetus so that it can prevent complications during childbirth.

Keywords: pregnant women, KEK, malnutrition

INTRODUCTION

Chronic energy deficiency (CED) in pregnancy is a nutritional problem in Indonesia. The contribution and occurrence of CED in pregnant women will affect the growth and development of the fetus. Pregnant women with nutritional and health problems have an impact on the health and safety of the mother and baby, as well as the quality of the baby born. The condition of pregnant women with Chronic Energy Deficiency (CED) risks reducing the muscle strength that helps the birth process, which can result in prolonged labor and postpartum bleeding, even maternal death. The risk to babies can result in fetal death (miscarriage), prematurity, birth defects, low birth weight (LBW) babies, and even baby death. The causes of the high prevalence of CED that are most often found in society are behavioral factors such as lifestyle, eating patterns, and socio-economic factors.

Chronic energy deficiency in pregnant women, which is characterized by an upper arm circumference of 23.5 cm, is one of the nutritional problems in Indonesia that is often experienced by pregnant women. Pregnant women who suffer from CED have the risk of giving birth to babies with low birth weight, stunted fetal brain growth and development, which is associated with a decrease in the child's intelligence in the future, and the possibility of abnormal birth length is also associated with stunting (Alfarisi et al., 2019).

The maternal mortality rate (MMR) based on SUPAS in 2015 was 305 per 100,000 live births. The 2020 Lampung Province Health Profile Report states that the number of maternal deaths has increased compared to 2019, namely from 110 cases to 115 cases. One of the main causes of AKI is bleeding. By early detection and analyzing the factors related to the incidence of CED in pregnant women, it is hoped that we can reduce the risk of bleeding during childbirth, thereby reducing the maternal Mortality Rate.

RESEARCH METHODS

This research is quantitative research using a *cross-sectional approach*. This research was carried out by collecting data on the independent variable and the dependent variable once at the same time. The population in this study were 70 pregnant women in the Way Kandis Community Health Center area, Bandar Lampung City. The research employed a total sampling technique. The sample that will be used in this research are pregnant women in the Way Kandis health center area, with a minimum sample size of 70 pregnant women. The inclusion criteria for this study were pregnant women who lived in the working area of the Way Kandis Community Health Center and were willing to take part in the research. This research was carried out in June–December 2023. Data collection was carried out by filling out questionnaires, which were distributed directly through posyandu and home visits. Analysis data bivariate use test statistics *chi-square.*

RESEARCH RESULTS

Univariate analysis

The following are the characteristics of pregnant women at the Way Kandis Community Health Center in Bandar Lampung:

Table 1.
Characteristics of Pregnant Women at Way Kandis Community Health Center Bandar Lampung in 2023

Characteristics	Frequency	Percentage (%)
Mother's Age		
20-29 years old	46	65.7
30-39 year	23	32.9
>39 years	1	1.4
Education		
middle/high school	48	68.6
College	22	31.4
Work		
Work	24	34.3
Doesn't work	46	65.7
Family Income		
≤ Minimum wage	28	40.0
>UMR	42	60.0
Parity		
Primipara	25	35.7
Multiparous	45	64.3

Based on Table 1, it is known that most respondents aged 20-29 years were 46 people (65.7%). Regarding education, there were 48 people (68.6 %) with junior high school/high school education, most of the respondents' jobs were not working, 46 people (65.7%). There were 42 people (60%) whose income was > UMR, and there were 45 people (64.3%) who were multiparous.

Bivariate analysis

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For internal factors related to the incidence of CED in pregnant women at the Way Kandis Community Health Center, Bandar Lampung, can be seen in the table below :

Table 2.
Internal Factor Analysis of the Incidence of CED in Pregnant Women at the Way Kandis Community Health Center, Bandar Lampung in 2023

Independent Variable	KEK incident				*p value*
	SEZ		Not KEK		
	N	%	N	%	
Age					
20-29 years old	16	22.8	30	42.8	0.767
30-40 year	8	11.4	15	21.4	
>39 years	0	0	1	1.4	
Parity					
Primipara	1	1.4	24	34.2	0.001
Multiparous	24	34.2	21	30	
Birth Distance					
< 2 years	16	22.8	37	52.8	0.202
>2 years	8	11.4	9	17	
Nutritional status					
Malnutrition	24	34.2	6	8.5	0.001
Good Nutrition	2	2.8	38	54.2	
Disease Infection					
There is	3	4.2	1	1.4	0.004
There isn't any	20	28.6	46	65.7	
Gestational Age					
TM I	5	7.14	10	14.2	0.862
TM II	13	18.5	22	31.4	
TM III	6	8.5	14	20	

Table 3
Analysis of External Factors on the Incidence of CED in Pregnant Women at the Way Kandis Community Health Center, Bandar Lampung in 2023

Independent Variable	KEK incident				*p value*
	SEZ		Not KEK		
	N	%	N	%	
Education					
middle/high school	**21**	**30**	**27**	**38.6**	**0.014**
College	**3**	**4.2**	**19**	**27.1**	
Family Income					
>UMR	**11**	**15.7**	**31**	**44.2**	**0.081**
<UMR	**13**	**18.6**	**15**	**21.4**	
Work					
Work	**5**	**7.14**	**19**	**27.1**	**0.087**
Doesn't work	**19**	**27.1**	**27**	**38.6**	

Table 2 shows that the variables most related to the incidence of CED are pregnant women with parity > 2 children with a p value of 0.001< 0.05 , then pregnant women with malnutrition with a p value of 0.001<0.05, and pregnant women with infectious diseases, p value 0.004<0.05. Unrelated variables are age, birth interval, and gestational age .

Based on table 3, it is known that the external variable factor, namely education, is most related to the incidence of CED in pregnant women with a p value of 0.014< 0.05 . The results of this research are

in line with Idealistiana's research in Bekasi, with a p value of 0.002, which shows a significant relationship between education and the incidence of CED in pregnant women. In the educational aspect, it cannot be imagined that the higher a person's level of education, the easier it will be to accept and value new information that is introduced, and ultimately the more knowledge he will have. On the other hand, if the level of education is low, it will hinder the development of a person's attitude towards accepting newly introduced information and values. Most of the education found was junior high school so knowledge and experience were lacking.

Table 4.
Analysis of internal and external factors most related to the incidence of CED in pregnant women at the Way Kandis Community Health Center, Bandar Lampung City

Independent Variable	p value	POR	CI 95%	
			Lower	On
Parity	0.001	0.290	2,533	4,571
Nutritional status	0.001	0.696	3,784	12,467
Disease Infection	0.004	0.116	0.664	2,990
Education	0.013	0.087	2,541	7,637

Based on table 4, it shows that the factors most related to the incidence of CED in pregnant women are maternal parity p-value (0.001), Nutritional Status p-value (0.001) and disease infection with p-value (0.004) respectively.

DISCUSSION

The number of parities shows the level of repeated pregnancies, so there are many risks. It can be said that physically, a high parity number reduces the ability of the uterus as a medium for fetal growth. Damage to the blood vessels of the uterine wall affects the circulation of nutrients to the fetus, where the amount of nutrients will be reduced compared to subsequent pregnancies. Too much parity will also be detrimental to the mother's health. The mother does not get the opportunity to repair her own body; the mother needs sufficient energy to recover after giving birth to her child. By re-containing food, it causes nutritional problems for the mother and fetus or unborn baby. Parity affects the nutritional status of pregnant women because it can influence the optimization of the mother and fetus in the pregnancy they face. In mothers with high parity, reduced vascularization or atrophic changes in the decidua due to previous births so that blood flow to the placenta is insufficient can disrupt its function, which will have an impact on fetal growth.

Research conducted by Imas shows that there is a relationship between parity and the incidence of CED in pregnant women at the Pasundan Garut Community Health Center. The results of this research are also in line with research conducted by Eka Widya, showing that there is a relationship between parity and the incidence of CED in pregnant women in the working area of the Sidopoto Health Center, Surabaya (P-value is 0.000). The results of this study are also in line with research conducted by Ekowati, which showed that there was a relationship between parity and KEK in pregnant women in Situbondo (P = 0.044).

This research is in line with research by Marsedi et al. in Tanjung Pinang; there is a significant relationship between nutritional status and the incidence of CED in pregnant women, with a p value of 0.006 <0x7E> 0.05. In general, the incidence of CED is influenced by all nutrients that can contribute to this incident; however, the influence of energy and protein intake is the strongest predictor of the incidence of CED. Pregnant women need more nutrients than before pregnancy. This is because, apart from pregnant women needing nutrients for the fetus they are carrying, the fetus grows by taking nutrients from the food consumed by the mother and from the nutritional stores in the mother's body. Especially for pregnant women who experience CED, they need intensive treatment through specific and sensitive nutritional interventions on an ongoing basis.

The results of Swastika Renjani's research in Banda Aceh showed a significant relationship between infectious diseases and the incidence of CED, p value 0.000. The effect of infectious diseases with CED depends on the magnitude of the impact caused; if the infection is still acute and the degree of infection is still low, it does not have much influence on the nutritional status of pregnant women. On the other hand, if the infection is chronic and lasts a long time, it can affect the mother's nutritional status. In this study, infection was still low, so it did not have much impact on the nutritional status of pregnant women. Pregnant women who are sick, especially

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those experiencing infectious diseases, will increase their body's metabolism, so the body will need more energy obtained from food. Because mothers who are sick and have a weak body condition are usually affected by a decreased appetite so that the food intake that should be given cannot be fulfilled, causing weight loss.

Infectious diseases can act as a precursor to malnutrition due to decreased appetite, lack of absorption in the digestive tract, or increased nutritional requirements due to disease. The relationship between infectious diseases and nutritional conditions is reciprocal, namely a cause-and-effect relationship. Infectious diseases can facilitate nutritional conditions, and poor nutritional conditions can facilitate infections and infectious diseases related to nutritional status, namely tuberculosis, diarrhea, and malaria.

CONCLUSION

Based on the results of related research and the discussion above, it is concluded that the factors related to the incidence of CED in pregnant women are parity, nutritional status and infectious diseases. The importance of cross-sectoral collaboration between health workers, community leaders, cadres, sub-districts, and local city health offices in handling nutritional intake in pregnant women so that it can prevent the occurrence of CED in pregnant women.

SUGGESTION

The importance of health education regarding nutritional intake for pregnant women in preventing the occurrence of Chronic Energy Deficiency (CED) in pregnant women, can affect the growth and development of the fetus, so that it can prevent complications during childbirth.

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