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journal homepage: www.midwifery.iocspublisher.org

Factors Associated with the Incidence of Chronic Energy Deficiency (CED) in Pregnant Women in the Working Area of the UPT Health Center Inpatient Banding Agung in 2021

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ARTICLEINFO

Keywords:

Energy,
Chronicles,
Economics,
Eat.

ABSTRACT

Background: Chronic energy deficiency is a condition where a pregnant woman suffers from a lack of food intake that lasts for a long time (chronic or chronic) which results in health problems, so that the increased nutritional needs during pregnancy cannot be met. The purpose of the study was to know the factors associated with the incidence of chronic energy deficiency in pregnant women in the work area of the Appeal Agung Inpatient Health Center in 2021. The research method was a quantitative research type of descriptive research using a cross sectional approach. using accidental sampling technique. The population in the study amounted to 245 people and the number of samples was 71 respondents. The results of the univariate analysis of respondents based on chronic energy deficiency were 48 people (67.6%), respondents based on economic status were 43 people (60.6%), respondents based on diet were 45 people (63.4%). Respondents based on knowledge amounted to 45 people (63.4%). The results of the bivariate analysis were a significant relation, honor between economic status with ap value of 0.000 <0.05, knowledge with ap value of 0.009 and eating patterns with ap value of 0.000 statistically proven. The conclusion is that there is a relationship between economic status, knowledge and eating patterns in the Working Area of the Great Appeal Inpatient Health Center in 2021. Suggestions for health workers Improve the quality of health services, especially services in antenatal care services. The need for counseling as often as possible about the nutrition of pregnant women to prevent chronic energy deficiency. Respondents based on diet were 45 people (63.4%).

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1. Introduction

Chronic energy deficiency is a condition in which a pregnant woman suffers from a lack of food intake that lasts for a long time (chronic or chronic) which results in health problems, so that the increased need for nutrients during pregnancy cannot be met (Kemenkes, 2015) [1] There are several forms of causes of maternal death and the most frequent as the main cause of death is known as the "triasclassic" namely bleeding, infection, and gestosis. In addition to these main causes, there are several other factors that can cause maternal death in Indonesia, one of which is pregnancy with chronic energy deficiency (KEK) (Kemenkes, 2015). [1].,

In 2019, according to the World Health Organization (WHO), the maternal mortality rate (MMR) was still high, around 295,000 women died during and after pregnancy and childbirth [2]..

In general, the maternal mortality rate in Indonesia has decreased from 390 to 305 per 100,000 live births. In 2019, the maternal mortality rate in Indonesia was still high, at 305 per 1,000 live births. (Ministry of Health, 2020) [3].

Women of childbearing age (WUS) in Indonesia are 13.6 percent suffering from CED, while based on the Indonesian health map the prevalence of pregnant women suffering from CED is 16.8 percent [2].

According to the Indonesian Health Profile data, it is known that 53.9% of pregnant women experience an energy deficit <70% of the energy adequacy rate (AKE). For protein adequacy, 51.9% of mothers had a

protein deficit of <80% and a protein adequacy rate (AKP) of 18.8% had a mild deficit of 80-99%. The high maternal mortality rate occurs due to several factors, both directly and indirectly. One of the indirect factors that play a major role in complications in pregnant women and childbirth is KEK (Chronic Energy Lack). (Ministry of Health RI, 2017) [4].

One of the four main nutritional problems in Indonesia is Chronic Energy Deficiency or hereinafter referred to as SEZ. SEZ in pregnant women is a condition of the mother's chronic (chronic) lack of food which results in health problems for the mother. Pregnant women are known to suffer from chronic energy deficiency, which can be seen from the measurement of the upper arm circumference (LILA), while the LILA limit for pregnant women with the risk of CED is less than 23.5 cm (Depkes RI, 2010). [5].

Based on data from the South Sumatra Health Office, the Maternal Mortality Rate decreased from 120 cases in 2018 to 69 cases until October 2019 [6].The incidence of pregnant women experiencing SEZ in the South Sumatra region in 2018 was 8607 mothers, in 2019 there were 18,849 mothers and in 2020 there were 20,617 mothers [7].

In 2020, from monthly report data from the South OKU District Health Office, the number of cases of pregnant women with KEK (Chronic Energy Deficiency) was 2209 out of a total of 7514 pregnant women, and in 2021 in January to June there were KEK pregnant women (Chronic Energy Deficiency). 82 of the total 6055 pregnant women [8].

Economic factors relate to the level of income and give birth to the purchasing power of a person or group of people if the income level is balanced with the number of family members who are the burden. The size of a family as well as the composition of a family and the level of family income are associated with the quality and quantity of diet prevailing in the family (Muliawati 2013). [9].

Mothers who have a high economy, then they will always try to meet the needs of the family by prioritizing quality. They can also follow every officer's recommendation to consume a variety of nutritious foods and drink milk 2 times a day, so that the nutritional needs of pregnant women can be met. For pregnant women with low economics and SEZ does not occur because they already have good nutrition since before pregnancy and during pregnancy they do not have problems with eating, so that nutritional intake during pregnancy can be fulfilled properly. [10].

Based on Febriyeni's research in 2017, Factors Associated with Chronic Energy Deficiency Incidence in Pregnant Women The results of the chi-square statistical test obtained p value = 0.005 (p < 0.05) meaning that there is an economic relationship with the incidence of KEK in pregnant women in the working area of the Banja Health Center Laweh Regency Fifty Cities in 2017. [10].

The level of knowledge is usually associated with a person's level of education which will affect the selection of food ingredients and the fulfillment of nutritional needs. Knowledge or cognitive is a very important domain in shaping one's actions. Education that does not hinder a person's development of newly recognized values (Notoadmojo, 2007). [11].

Palimbo's research, 2014, entitled The Relationship of Knowledge and Attitudes of Pregnant Women to the Incidence of Chronic Energy Deficiency (KEK). The results of statistical tests show the value of = 0.002 that there is a relationship between knowledge and the incidence of SEZ. [12].

Eating behavior is a form of disease prevention behavior, namely a complete response to disease prevention and efforts to maintain and improve their health, such as in the context of preventing KEK in pregnant women [13]., A good diet always refers to balanced nutrition, namely the fulfillment of all nutrients according to needs and in balance. Meanwhile, there are six nutritional elements that must be fulfilled, namely carbohydrates, protein, fat, vitamins, minerals and water. Carbohydrates, proteins and fats are macronutrients as a source of energy, while vitamins and minerals are micronutrients as regulators of the body's metabolism (Wirjatmadi, 2012). [14].

Previous research by Amri, 2018 entitled The Relationship between Diet and Chronic Energy Deficiency (KEK) in Pregnant Women in Datuk Bandar Timur District, Tanjung Balai City in 2017 found that statistical analysis using chi square analysis showed that there was a significant relationship between the pattern eating with the incidence of Chronic Energy Deficiency (CED) in pregnant women (p<0.000). [15].

Based on the Monthly Report of the Nutrition Program of the UPT Inpatient Health Center Appeal Agung in 2020, the number of cases of pregnant women with KEK (Chronic Energy Deficiency) was 34 out of a total of 504 pregnant women, and in 2021 in January to June there were KEK pregnant women (less EnergiKronik) 26 people out of a total of 245 pregnant women (Nutrition Report of UPT Public Health Center Inpatient Banding Agung) [16]..

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2. Method

This study uses analytical quantitative research using a cross-sectional research design, the study was conducted in August 2021, the sample of this study was partly from pregnant women who experienced Chronic Energy Deficiency (KEK). in the Working Area of the UPT Puskesmas Inpatient Banding Agung, the number of samples in this study was 71 people.

3. Results and Discussion

3.1 Research result

a. Univariate Analysis

Table 1
Frequency Distribution of Respondents Based on Chronic Energy Deficiency
in the Work Area of the UPT Inpatient Health Center in Banding Agung in 2021

Chronic Energy Deficiency	N	%
Yes	48	67.6
Not	23	32.4
Tbrain	*71*	100.0

BerBased on table 1, it was obtained from 71 respondents who experienced Chronic Energy Deficiency totaling 48 respondents (67.6%), while respondents who did not experience Chronic Energy Deficiency amounted to 23 respondents (32.4%).

Tabel 2
Frequency Distribution of Respondents Based on Economic Status
in the Work Area of the UPT Inpatient Health Center in Banding Agung in 2021

Economic Status	N	%
Low	43	60.6
Tall	28	39.4
Tbrain	*71*	100.0

Berbased on table 2 of 71 respondents who experienced low economic status totaled 43 respondents (60.6%), while respondents with high economic status were 28 respondents (39.4%).

Table 3
Frequency Distribution of Respondents Based on Knowledge
in the Work Area of the UPT Inpatient Health Center in Banding Agung in 2021

Knowledge	N	%
Not good	45	63.4
Good	26	36.6
Tbrain	*71*	100.0

Berbased on table 3 of 71 respondents who have poor knowledge totaling 45 respondents (63.4%) while respondents who have good knowledge are 26 respondents (36.6%).

Table 4
Frequency Distribution of Respondents Based on Diet
in the Work Area of the UPT Inpatient Health Center in Banding Agung in 2021

Dietary habit	N	%
Good	45	63.4
Not good	26	36.6
Tbrain	*71*	100.0

Based on table 4 of 71 respondents with a good eating pattern totaled 45 respondents (63.4%) while respondents with a poor diet were 26 respondents (36.6%).

b. Bivariate Analysis

Table 5
Relationship between Economic Status and Chronic Energy Deficiency
In the Working Area of the UPT Inpatient Health Center, Banding Agung in 2021

No	Economic Status	Chronic Energy Deficiency				Tbrain		*p* Valu	*OR*
		KEK		Not KEK					
		n	%	n	%	N	%		
1.	Low	39	90.7	4	9.3	43	100.0	0.000	20.583
2.	Tall	9	32.1	19	67.9	28	100.0		
	Tbrain	48	-	23	-	*71*	-		

PaIn table 5, data is obtained from 43 respondents with low economic status experiencing SEZ, totaling 39 people (90.7%) and those not experiencing chronic energy deficiency as many as 4 people (9.3%). while the 28 respondents with high economic status experienced chronic energy deficiency as many as 9 people (32.1%) and 19 people who did not experience chronic energy deficiency (67.9%). The results of statistical tests using chi-square show that there is a significant relationship between economic status and chronic energy deficiency with a p value of 0.000 <0.05. From the results of the analysis obtained the value of OR = 20,583means respondents who experience ilow economic statushave a chance 20.583 times to experience KEK.

Table 6
Relationship of Knowledge with Chronic Energy Deficiency
In the Working Area of the UPT Public Health Center for Inpatient Appeals in 2021

No	Knowledge	Chronic Energy Deficiency				Tbrain		*p*-Value	OR
		KEK		Not KEK					
		N	%	N	%	N	%		
1.	Not good	39	78.0	11	22	50	100.0	0.006	4,727
2.	Good	9	42.9	12	57.1	21	100.0		
	Tbrain	48	-	23	-	*71*	-		

Table 6 shows data from 50 respondents who have poor knowledge of chronic energy deficiency as many as 39 people (78.0%) and who do not experience chronic energy deficiency as many as 11 people (22%). Meanwhile, 9 people (42.9%) of 21 respondents who had good knowledge experienced chronic energy deficiency and 12 people who did not experience chronic energy deficiency (57.1%). The results of statistical tests using chi-square show that there is a significant relationship between knowledge and chronic energy deficiency with a p value of 0.006 <0.05. From the results of the analysis obtained the value of OR = 4.727means respondents who experience poor knowledgehave a chance20.583times to experience SEZ.

Table 7
Relationship between diet and chronic energy deficiency
In the Working Area of the UPT Inpatient Health Center, Banding Agung in 2021

No	Dietary habit	Selection of 3 Months Injectable KB				Tbrain		*p*- Value	OR
		KEK		No KEK					
		n	%	n	%	N	%		
1.	higher education	39	86.7	6	13.3	45	100.0	0.000	12,278
2.	Low education	9	34.6	17	65.4	26	100.0		
	Tbrain	48	-	23	-	*71*	-		

In table 7, data obtained from 45 respondents with poor eating patterns experienced chronic energy deficiency as many as 39 people (86.7%) and 6 people (13.3%) who did not experience chronic energy deficiency. Meanwhile, from 26 respondents with a good diet, 9 people (34.6%) experienced chronic energy deficiency and 17 people (65.4%) did not experience chronic energy deficiency. The results of statistical tests using chi-square show that there is a significant relationship between diet and chronic energy deficiency with a p value of 0.000 <0.05. From the results of the analysis obtained the value of OR = 12,278means respondents who experience poor diethave a chance12,278 times to experience SEZ.

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3.2 Discussion

a. Relationship of Economic Status with Chronic Energy Deficiency

In this study, the number of samples studied was 71 people, the economic status was divided into two categories, namely low and high. Based on the univariate analysis, of the 71 respondents with low economic status, 43 respondents (60.6%), while the respondents with high economic status were 28 respondents (39.4%).

Based on bivariate analysis, 39 respondents (90.7%) with low economic status experienced SEZ and 4 people (9.3%) who did not experience chronic energy deficiency. while the 28 respondents with high economic status experienced chronic energy deficiency as many as 9 people (32.1%) and 19 people (67.9%).

The results of statistical tests using chi-square show that there is a significant relationship between economic status and chronic energy deficiency with a p value of 0.000 <0.05. From the results of the analysis obtained the value of OR = 20,583means respondents who experiencelow economic statushave a chance20.583times to experience KEK.

This study is in line with the research conducted by Febriyeni in 2017, entitled Factors Associated with the Incidence of Chronic Energy Deficiency in Pregnant Women. The results of the chi-square statistical test obtained p value = 0.005 (p < 0.05) meaning that there is an economic relationship with the incidence of SEZ in pregnant women in the working area of the Banja Laweh Health Center, Lima Puluh Kota Regency in 2017. [10].

This research is also in line with the research conducted by Andini, 2020 entitled The Relationship of Socio-Economic Factors and Gestational Age with the Incidence of Chronic Energy Deficiency in Pregnant Women at the Prambontergayang Health Center, Tuban Regency, which shows that the value of = 0.000 (p < 0.05). that there is a relationship between income and the incidence of SEZ in the working area of the Prambontergayang Health Center. (Andini, 2020). [17].

This research is in line with the theory that economic factors are related to the level of income and give birth to the purchasing power of a person or group of people if the income level is balanced with the number of family members who are the burden. The size of a family and the composition of a family and the level of family income are associated with quality and quantity. diet that applies in the family (Muliawati 2013).). [9].

This is in line with the theory that the higher the family income, the more capable the family will be to meet good nutritional intake. Likewise, the lower the family income, the more difficult it will be to meet the nutrients and nutritional intake needed by the body. Economic factors are related to the level of income and give birth to a person's purchasing power if the income level is balanced with the number of family members who are the burden. Mothers who have a high economy will always try to meet the needs of the family by prioritizing quality.[10].

This research is also in line with the theory that food consumption should be within the reach of family finances and contain the necessary nutrients. Estimate the food ingredients needed and their prices, if they cannot be purchased with existing finances, they can be reduced gradually. Ways to reduce expenses can be done by lowering the quality of the rice purchased because the nutritional value of high quality and low quality rice is the same, replacing staple food ingredients with non-rice rice, using side dishes that are not too expensive, and reviewing vegetables and fruit for dessert. how to choose cheaper types of vegetables and fruits without reducing their quality. Certain vegetables and fruit can be grown in the yard of the house to reduce costs,

Researchers assume that the higher a person's economic status, the easier it is for that person to fulfill their needs, and vice versa, the lower a person's economic status will indirectly affect income and also affect the lack of fulfillment of nutritional needs during pregnancy.

b. Relationship of Knowledge with Chronic Energy Deficiency

In this study, the number of samples studied was 71 people, knowledge was divided into two categories, namely less good and good. Based on the univariate analysis, of the 71 respondents with poor knowledge, 45 respondents (63.4%) were found, while the respondents with good knowledge were 26 respondents (36.6%).

Based on bivariate analysis, it was found that from 50 respondents who had poor knowledge experienced chronic energy deficiency as many as 39 people (78.0%) and 11 people (22%). Meanwhile, 9 people (42.9%) of 21 respondents who had good knowledge experienced chronic energy deficiency and 12 people who did not experience chronic energy deficiency (57.1%).

The results of statistical tests using chi-square show that there is a significant relationship between knowledge and chronic energy deficiency with a p-value of 0.006 <0.05. From the results of the analysis, the value of OR = 4.727means respondents who experience poor knowledgehave a chance 20.583 times to experience SEZ.

This study is in line with research conducted by Palimbo, 2014, entitled The Relationship of Knowledge and Attitudes of Pregnant Women to the Incidence of Chronic Energy Deficiency (KEK). The results of statistical tests show the value of = 0.002 that there is a relationship between knowledge and the incidence of KEK.. [12].

This study is in line with research conducted by Aprilianti, 2018, entitled The Relationship of Knowledge, Attitude, Energy and Protein Intake to the Risk of Chronic Energy Deficiency (KEK) in Women of Childbearing Age in Hibun Village, Sanggau Regency entitled Based on the results of the chi-square statistical test, it was obtained that p=0.19 (p>0.05), this indicates that there is no relationship between knowledge and the risk of SEZ in WUS. [19].

This research is in line with the theory that the level of knowledge is usually associated with a person's level of education which will affect the choice of food ingredients and the fulfillment of nutritional needs. Knowledge or cognitive is a very important domain in shaping one's actions. Lack of education hinders a person's development of newly recognized values (Notoadmojo, 2007) [11].

This research is also in line with the theory that high education makes it easier for someone to receive more information than low education. High knowledge of health supports healthy living behavior in fulfilling maternal nutrition during pregnancy. Health education is essentially an attempt to convey health messages to communities, groups, or individuals. With the hope that with this message the public can gain knowledge about the importance of nutritional intake during pregnancy. Knowledge is also the result of knowing and this occurs after people have sensed a certain object. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell,

c. Relationship between diet and chronic energy deficiency

In this study, the number of samples studied was 71 people, eating patterns were divided into two categories, namely good and not good. Based on the univariate analysis, from 71 respondents with a good diet, 45 respondents (63.4%) had 26 respondents (63.4%) while respondents with a poor diet were 26 respondents (36.6%).

Based on bivariate analysis, it was found that from 45 respondents with a poor diet experiencing chronic energy deficiency as many as 39 people (86.7%) and 6 people who did not experience chronic energy deficiency (13.3%). Meanwhile, from 26 respondents with a good diet, 9 people (34.6%) experienced chronic energy deficiency and 17 people (65.4%) did not experience chronic energy deficiency.

The results of statistical tests using chi-square show that there is a significant relationship between diet and chronic energy deficiency with a p value of 0.000 <0.05. From the results of the analysis obtained the value of OR = 12,278means respondents who experience poor diet have a chance 12,278 times to experience SEZ.

This research is in line with research conducted by Amri, 2018 entitled The Relationship between Diet and Chronic Energy Deficiency (KEK) in Pregnant Women in Datuk Bandar Timur District, Tanjung Balai City in 2017 it was found that statistical analysis using chi square analysis, shows that there are There was a significant relationship between diet and the incidence of Chronic Energy Deficiency (KEK) in pregnant women (p<0.000). [15].

This research is in line with the research conducted by Yunita, 2021 entitled The Relationship of Diet and Family Income with Chronic Energy Deficiency Incidence (KEK) in Pregnant Women in the Working Area of the Kertak Hanyar Health Center, based on the results of statistical analysis, diet has a significant relationship (p =0.001) with the incidence of chronic energy deficiency (KEK) in the working area of the Kertak Hanyar Health Center. [20].

This research is also in line with the theory that food consumption behavior is a form of disease prevention behavior, namely a complete response to disease prevention and efforts to maintain and improve health, such as in the context of preventing SEZ in pregnant women. [13].

This study is also in line with the theory that adequate food consumption for pregnant women is one that if consumed every day can meet the nutritional needs of both quality and quantity. Diet affects the incidence of CED in pregnant women, the daily eating pattern of pregnant women is also influenced by the existence of a belief that abstains from certain foods to be consumed on the grounds that if consumed during pregnancy will result in defects in the baby being born so that food intake in pregnant women becomes not enough.

This research is also in line with the theory that a good diet always refers to balanced nutrition, namely the fulfillment of all nutrients according to needs and in balance. Meanwhile, there are six nutritional elements that must be fulfilled, namely carbohydrates, protein, fat, vitamins, minerals and water. Carbohydrates, protein and fat are macronutrients as a source of energy, while vitamins and minerals are micronutrients as a regulator of the smooth functioning of the body's metabolism (Wirjatmadi, 2012) [14].

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Researchers assume that respondents who have a poor diet because they do not apply balanced nutrition every day, an adequate diet for pregnant women is if consumed by pregnant women every day can meet the nutritional needs in quality and quantity.

4. Conclusion

There is a simultaneous socio-economic relationship with the incidence of chronic energy deficiency in pregnant women in the work area of the UPT Health Center Inpatient Banding Agung in 2021.

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