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The Incidence of Chronic Energy Deficiency (KEK) in Pregnant Women at Borong Health Center

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ABSTRACT

Chronic Energy Deficiency (KEK) is one of the issues that might arise during pregnancy when the intake and nutritional demands are out of balance. The Upper Arm Circumference (LiLA) of pregnant women less than 23.5 cm is used to determine Chronic Energy Deficiency (KEK). The goal of this study is to analyze the variables linked to Chronic Energy Deficiency (KEK) in pregnant women in the Borong Health Center's working area in East Manggarai Regency. This type of research quantitative research uses a cross-sectional study approach. This research was conducted in the working area of the Borong Health Center with a sample of 56 pregnant women. The data analysis used was univariable and bivariable analysis with a chi-square statistical test. The results of this study indicate that there is a relationship between the variables of maternal age (p = 0.037), and the close relationship (-0.315), mother's occupation (p = 0.036) and the close relationship (-0.320), family income (p = 0.001) and the close relationship namely (0.474), gestational distance (p = 0.000) and the close relationship (0.559), energy intake (p = 0.017) and the close relationship (0.356), and protein intake (p = 0.001) and the close relationship (0.488) with the incidence of KEK in pregnant women in the working area of the Borong Health Center. Meanwhile, factors that were not related to the incidence of KEK in pregnant women were the mother's level of knowledge (p = 0.244), the mother's education level (p = 0.136), and parity (p = 1,000). The conclusion is that there is a relationship between maternal age, mother's occupation, family income, pregnancy distance, energy intake, and protein intake with the incidence of CED. Pregnant women are expected to receive health education in pregnant women classes to prepare for pregnancy or counseling about nutritional needs before pregnancy and during pregnancy.

Keywords: *KEK incidence; biological factors; socio-economy*

ABSTRAK

Kekurangan Energi Kronis (KEK) merupakan salah satu masalah yang mungkin muncul selama kehamilan ketika asupan dan kebutuhan nutrisi tidak seimbang. Lingkar Lengan Atas (LILA) ibu hamil kurang dari 23,5 cm digunakan untuk menentukan Kekurangan Energi Kronis (KEK). Penelitian ini bertujuan untuk menganalisis variabel yang berhubungan dengan Kekurangan Energi Kronis (KEK) pada ibu hamil di wilayah kerja Puskesmas Borong Kabupaten Manggarai Timur. Jenis penelitian kuantitatif dengan menggunakan pendekatan studi *cross-sectional*. Penelitian ini dilakukan di wilayah kerja Puskesmas Borong dengan sampel sebanyak 56 ibu hamil. Analisis data analisis univariabel dan bivariabel dengan uji statistik *chi square*. Hasil penelitian ini menunjukkan ada hubungan antara variabel umur ibu (p=0,037) dan keeratan hubungannya yaitu (-0,315), pekerjaan ibu (p=0,036) dan keeratan hubungannya yaitu (-0,320), pendapatan keluarga (p=0,001) dan keeratan hubungannya yaitu (0,474), jarak kehamilan (p=0,000) dan keeratan hubungannya yaitu (0,559), asupan energi (p=0,017) dan keeratan hubungannya yaitu (0,356), dan asupan protein (p=0,001) dan keeratan hubungannya yaitu (0,488) dengan kejadian KEK pada ibu hamil di wilayah kerja Puskesmas Borong. Sedangkan faktor yang tidak berhubungan dengan kejadian KEK pada ibu hamil adalah tingkat pengetahuan ibu (p= 0,244), tingkat pendidikan ibu (p = 0,136), dan paritas (p = 1,000). Kesimpulan penelitian ada hubungan umur ibu, pekerjaan ibu, pendapatan keluarga, jarak kehamilan, asupan energi, dan asupan protein dengan kejadian KEK. Ibu hamil diharapkan mendapatkan penyuluhan kesehatan di kelas ibu hamil untuk persiapan kehamilan ataupun konseling tentang kebutuhan gizi sebelum hamil dan selama kehamilan.

Kata Kunci: kejadian KEK; faktor biologi; sosial ekonomi

INTRODUCTION

The good nutritional status of pregnant women greatly determines the development and growth of the fetus which will also affect the smooth delivery process. The good nutritional status of pregnant women can be obtained with a balance between intake and nutritional needs. If during pregnancy the nutritional intake is not balanced with nutritional needs, the mother and fetus will experience various

problems, including the fetus can experience defects, low birth weight (LBW) which is less than 2500 grams, anemia during pregnancy, and leading ing. Pregnant women who are malnourished will also suffer from Chronic Energy Deficiency (KEK), will experience serious malnutrition, and are at risk of giving birth to babies with low birth weight by 2-3 times greater than pregnant women who are not malnourished and the possibility of infant death. by 1.5 times [(1)]

The Maternal Mortality Rate (MMR) in Indonesia is 305 maternal deaths per 100,000 live births, according to the 2015 Indonesian Health Profile. Complications during pregnancy, childbirth, and puerperium are the most prevalent causes of mortality. Complications that arise, of course, cannot be isolated from the mother's poor nutritional state, which influences her health as well as the health of the fetus being delivered. [(2)] Chronic Energy Deficiency (KEK) is an issue that arises during pregnancy when intake and nutritional demands are out of balance. The upper arm circumference (Lila) of pregnant women who are less than 23.5 cm or in the Lila red band is used to determine chronic energy insufficiency (KEK). Low birth weight (LBW) of less than 2500 grams is the most common complication of KEK. [(3)]

The causes of non-fulfillment of nutritional needs during pregnancy include pregnant women experiencing infectious diseases, maternal age who is too young (<20 years) or at high risk of giving birth (>34 years), low level of education and knowledge, social level low economy, high maternal parity, and the distance between pregnancies is too close so that the mother has not had the opportunity to repair her body after giving birth [(1)]

According to the World Health Organization (WHO), the incidence of chronic energy deficit (KEK) in pregnancy is 35-75 percent worldwide, with the third trimester being much higher than the first and second trimesters. According to the World Health Organization, KEK is responsible for 40% of maternal fatalities in developing nations, with Belgium having the greatest incidence of these instances and Indonesia having the fourth highest prevalence of KEK among many other developing countries, at 35.4 percent [(4)]

Based on the results of Riskesdas in 2013 and 2018, the the prevalence of KEK in pregnant women of childbearing age (15-49 years) nationally was 24.2% in 2013 and in 2018 it decreased to 17.3%. East Nusa Tenggara is one of the provinces that has a high prevalence of KEK in preg women of childbearingring age, namely 45.5% in 2013 and 36.8% in 2018. The high prevalence of pregnant women of childbearing age (15-49 years) who experienced KEK in NTT in 2018, contributed to the total maternal mortality rate (according to total ata from the NTT Health Office in 2018, the maternal mortality rate was 1,265 per 100,000 live births. [(5)]

East Manggarai Regency is one of the areas in East Nusa Tenggara (NTT) Province which has a fairly high Maternal Mortality Rate (MMR), which is as many as 10 deaths per 100,000 live births[(6)] Maternal mortality is certainly inseparable from nutritional problems in pregnant women. According to

data obtained from the Health Office, it is known that as many as 146 pregnant women of childbearing age experience KEK.

Borong Health Center is in the East Manggarai Regency which has a high incidence of. From initial data obtained from the Borong Health Center from January to April 2021, it was found that as many as 21 pregnant women of childbearing age (15-49 years), or around 17.6% experienced Chronic Energy Deficiency (KEK), out of 119 pregnant women. In previous research conducted by Diza Hamzah in 2017 on the Analysis of Factors Influencing the Incidence of Chronic Energy Deficiency (KEK) in Pregnant Women, the results showed that there was a relationship between the age of pregnant women, income, education of pregnant women, the part they, the distance between pregnancies, knowledge of pregnant women. Total food intake with the incidence of KEK.

The discovery of pregnant women who experience chronic energy deficiency (KEK). researchers are interested in researching "Analysis of Factors Associated with Chronic Energy Deficiency (KEK) in the Work Area of the Borong Health Center, East Manggarai Regency in 2021". The specific purpose of this study was to determine the relationship between maternal age, mother's level of knowledge, mother's occupation, family income, mother's education, parity, pregnancy distance, energy intake and protein intake with the incidence of Chronic Energy Deficiency (KEK) in pregnant women.

METHOD

This research is a quantitative analytic research using a cross-sectional research design.[7] This research was conducted in the Working Area of the Borong Health Center, East Manggarai Regency, and was carried out from November 2021 to January 2022. The population in this research was 119 pregnant women and sample of 56 mothers. The sampling technique in this study uses simple random sampling. The collected data will be processed and analyzed with the help of a computer that supports it[9]. Data processing is carried out in the following ways: editing, coding, entry, cleaning, and scoring. Data analysis using univariable and bivariable analysis using chi-Square test. This research has passed the ethical review with Number: 2021186 -KEPK.

RESULTS AND DISCUSSION

1. Characteristics of Respondents

According to the study's findings, the following are the characteristics of pregnant women at the Borong Health Center's working area in East Manggarai Regency

Table 1. Characteristics of Pregnant Women in the Work Area of the Borong Health Center, East Manggarai Regency

No	Characteristics	Total (n)	Percentage (%)
1	**KEK incident**		
	KEK (< 23.5 cm)	30	53.6
	Not KEK (≥23.5 cm)	26	46.4
	Total	56	100.0

2.	**Mother's Age**		
	At-risk (<20 or >35 years)	23	41.1
	No-Risk (20-35 years old)	33	58.9
	Total	56	100.0
3.	**Mother's Knowledge Level**		
	Less (<56 %)	11	19.6
	Enough (56-75%)	32	57.1
	Good (76-100%)	13	23.2
	Total	56	100.0
4.	**Mother's Job**		
	Work (Teachers, Midwives, Private Employees civil servants, police)	17	30.4
	Does not work	39	69.6
	Total	56	100.0
5.	**Family Income**		
	Low (< UMR (1,950,000)	44	78.6
	High (≥UMR (≥1,950,000)	12	21.4
	Total	56	100.0
6.	**Mother's Education Level**		
	Low (SD, SMP)	22	39.3
	College (SMA/SMK, College)	34	60.7
	Total	56	100.0
7.	**parity**		
	Good (≥ 3 times)	12	21.4
	Bad (< 3 times)	44	78.6
	Total	56	100.0
8.	**Pregnancy Distance**		
	At-risk (< 2 years)	23	41.1
	No-Risk (≥ 2 years)	33	58.9
	Total	56	100.0
9.	**Energy Intake**		
	Less (< 80% RDA)	38	67.9
	Enough (≥ 80% RDA)	18	32.1
	Total	56	100.0
10.	**Protein Intake**		
	Less (< 80% RDA)	41	73.2
	Enough (≥ 80% RDA)	15	26.8
	Total	56	100.0

Based on Table 1, shows that the characteristics of mothers with the incidence of KEK at risk (<23.5 cm) are more, namely 30 people (53.6%) compared to respondents with the incidence of KEK, not at risk (≥23.5 cm) which is 26 people (46.4). %). Characteristics of respondents based on maternal age showed that the number of respondents aged 20-35 was 33 people (58.9%) compared to respondents aged <20 or >35 years, namely 23 (41.1%). Characteristics of respondents based on the mother's level of knowledge showed that the number of respondents who had a level of knowledge <56-75% was more, namely 32 people (57.1%) compared to respondents who had a level of knowledge <56%, namely 11 people (19.6%) and knowledge level 76-100%, namely 13 people (23.2%). Characteristics of respondents based on mother's occupation showed that the number of respondents who had jobs as

housewives (IRT) was 39 people (69.6%) compared to respondents who had jobs as teachers, midwives, which were 12 people (21.4%) and respondents who have jobs as civil servants, POLRI is 5 people (8.9%). Characteristics of respondents based on family income showed that the number of respondents who had a family income of < UMR in East Manggarai Regency (<1,950,000) was 44 people (78.6%) compared to respondents who had a family income of UMR in East Manggarai Regency (≥1,950). .000) that is 12 people (21.4%). Characteristics of respondents based on parity showed that the number of respondents with parity 3 times was 44 people (78.6%) compared to respondents with parity < 3 times, namely 12 people (21.4%). Characteristics of respondents based on the distance between pregnancies showed that the number of respondents with a distance between pregnancies (≥ 2 years) was 33 people (58.9%) than respondents with a distance between pregnancies (<2 years) which was 23 people (41.1%). Characteristics of respondents based on energy intake showed that the number of respondents with energy intake in the category <80% RDA was 38 people (67.9%) compared to respondents with energy intake in the category 80% RDA, namely 18 (32.1%). Characteristics of respondents based on protein intake showed that the number of respondents with protein intake in the category <80% RDA was more, namely 41 people (73.2%) than respondents with protein intake in the category 80% RDA, namely 26 people (26.8%).

2. Bivariable Analysis

1. The Relationship between Maternal Research Variables with Chronic Energy Deficiency Incidence (KEK) in Pregnant Women

Table 2. Relationship between Maternal Research Variables with Chronic Energy Deficiency Incidence (KEK) in Pregnant Women

Variable		**KEK incident**						***-value***
		KEK		**No KEK**		**Total**		
		n	**%**	**n**	**%**	**n**	**%**	
Mother's Age	at risk	8	14.3	15	26.8	23	41.1	**0.037**
	Not at risk	22	39.3	11	19.6	33	58.9	
	Total	30	53.6	26	46.4	56	100.0	
Mother's Knowledge Level	Not enough	8	14.4	3	5.4	11	19.6	**0.244**
	Enough	17	30.4	15	26.8	32	57.1	
	Good	5	8.9	8	14.3	13	23.2	
	Total	30	53.6	26	46.4	56	100.0	
Mother's Job	Work	5	8.9	12	21.4	17	30.4	**0.036**
	Not Work	25	44.6	14	25.0	39	69.6	
	Total	30	53.6	26	46.4	56	100.0	
Income Family	Low	29	51.8	15	26.8	44	78.6	**0.001**
	Tall	1	1.8	11	19.6	12	21.4	
	Total	30	53.6	26	46.4	56	100.0	
Mother's Education Level	Low	15	26.8	7	12.5	22	39.3	**0.136**

	Tall	15	26.8	19	33.9	34	60.7	
	Total	30	53.6	26	46.4	56	100.0	
parity	Bad	6	10.7	6	10.7	12	21.4	**1,000**
	Good	24	42.9	20	37.5	44	78.6	
	Total	30	53.6	26	46.4	56	100.0	
Pregnancy Distance	at risk	20	35.7	3	5.4	23	41.1	**0.000**
	Not at risk	10	17.9	23	41.1	33	58.9	
	Total	30	53.6	26	46.4	56	100.0	
intake Energy	Not enough	25	44.6	13	23.2	38	67.9	**0.017**
	Enough	5	8.9	13	23.2	18	32.1	
	Total	30	53.6	26	46.4	56	100.0	
Protein Intake	Not enough	28	50.0	13	23.2	41	73.2	**0.001**
	Enough	2	3.6	13	23.2	15	26.8	
	Total	30	53.6	26	46.4	56	100.0	

According to Table 2, the chi-square test of the maternal age variable with the incidence of KEK yielded a-value of 0.037< (0.05), indicating thatt here is a link be between maternal and the incidence of Chronic Energy Deficiency (KEK) in pregnant women. The tight link between the mother's age variable and the incidence of KEK is (-0.315) based on the value of the correlation coefficient, indicating that the relationship level is low.

Based on the results of the chi-square test of the mother's knowledge level variable with the incidence of KEK, the p-value = 0.244 > (0.05) indicates that there is no relationship between the variable level of mother's knowledge and the incidence of Cofiof n pregnant women.

The obtained p-value = 0.036 < (0.05) indicates that there is a relationship between the mother's work variable and the incidence of KEK in pregnant women in the working area of the Borong Health Center East Manggarai Regency, based on the results of the chi-square test of the mother's occupation variable with the incidence of KEK. The tight link between the mother's job variable and the incidence of KEK is (-0.320) based on the value of the correlation coefficient, indicating a low degree of relationship.

The chi-square test of the family income variable with the incidence of KEK yielded a value of p = 0.001 (0.05), implying that there is a link between family income and the incidence of KEK in pregnant women in the Borong District Health Center East Manggarai working area. The tight link between family income characteristics and the incidence of KEK is (0.474) based on the value of the correlation coefficient, indicating a moderate level of relationship.

The chi-square test of the variable mother's education level with the incidence of KEK yielded a p-value of 0.136 > (0.05), indicating that there is no relationship between the variable mother's education level and the incidence of KEK in pregnant women in the Borong Health Center's work in East Manggarai Regency.

The chi-square test of the parity variable with the incidence of KEK yielded a value of p=1,000 > (0.05), indicating that the parity variable and the incidence of KEK in pregnant women in the working area of the Borong District Health Center East Manggarai have no relationship.

The chi-square test of the pregnancy distance variable with the incidence of KEK yielded a p-value of 0.000 < (0.05), indicating a link between the pregnancy distance variable and the incidence of KEK in pregnant women in the Borong Health Center East Manggarai Regency's working area. The tight link between the variable distance between pregnancies and the incidence of KEK is (0.559) based on the value of the correlation coefficient, indicating a moderate level of relationship.

The chi-square test of the energy intake variable with the incidence of KEK yielded a p-value of 0.017 < (0.05), indicating a link between the energy intake variable and the incidence of KEK in pregnant women in the Borong Health Center East Manggarai Regency's working area. The tight link between the energy intake variable and the incidence of KEK is (0.356) based on the value of the correlation coefficient, which indicates that the level of the relationship is low.

The chi-square test of the protein intake variable with the incidence of KEK yielded a value of p = 0.001 (0.05), indicating a link between the protein intake variable and the incidence of KEK in pregnant women in the Borong Health Center East Manggarai Regency's working area. The tight link between the variable protein consumption and the incidence of KEK (0.488) indicates a moderate level of relationship, according to the correlation coefficient value.

2. The relationship between maternal age and the incidence of chronic energy deficiency (KEK) in pregnant women.

Based on the results of interviews with pregnant women in the working area of the Borong Health Center, East Manggarai Regency, pregnant women who have a risk age who experience KEK are 8 (14.3%) smaller than those who do not experience KEK, namely 15 (26.8 people). %), Meanwhile, pregnant women who are not at risk of experiencing CED, are 22 people (39.3%) which is bigger than those who do not experience KEK, which is 11 people (19.6%). This is because many pregnant women are at risk of experiencing KEK in the working area of the Borong Health Center. After all, many women are married at the age of <20 years. Maternal age greatly affects the nutritional status of pregnant women themselves. A mother who is still very young (<20 years) is still experiencing growth and development. If she is pregnant, the baby she is carrying will compete with the mother for nutrients because they are both experiencing growth and development. This competition then causes the mother to experience chronic energy deficiency. Meanwhile, pregnant women who are too old (> 35 years) also need a lot of energy to support the function of their weakened organs. So that in this condition, the competition for energy will occur again and will be divided between the pregnant woman herself and the baby she is carrying.

3. The relationship between Mother's Knowledge Level and chronic energy deficiency (KEK) in pregnant women.

According to the findings of interviews conducted with pregnant women in the Borong Health Center's operating area in the East Manggarai Regency, the majority of pregnant women had an adequate level of awareness and a good level of understanding regarding nutrition during pregnancy. Good knowledge of pregnancy nutrition is because the majority of the education level of pregnant women in this study were high school and university. Mothers with a high level of education will find it easier to receive and digest information. Pregnant women in the working area of the Borong Health Center generally know about nutrition for pregnant women, but with poor economic conditions and low purchasing power, the nutritional needs of mothers during pregnancy both in terms of quality and quantity have not been met. So that there are still many who experience Chronic Energy Deficiency (KEK).

4. The Relationship between Mother's Occupational Level and Chronic Energy Deficiency Incidence (KEK) in Pregnant Women

Based on the results of interviews with pregnant women in the working area of the Borong Health Center, East Manggarai Regency, it was shown that the number of pregnant women who did not work was 39 people (69.6%). This is because most pregnant women work as housewives (IRT) and many experience KEK because they do not have time to meet the energy needed, besides that mothers do not have access to a lot of information about nutrition because of the lack of time and workload. There are a lot of daily activities such as having to do housework alone, take care of children and take care of husbands, not to mention if pregnant women still live with their mother and father-in-law, so the workload of pregnant women greatly affects the nutritional needs consumed.

5. The relationship between the level of family income and the incidence of chronic energy deficiency (KEK) in pregnant women

Based on the findings of interviews with pregnant women conducted at the Borong Health Center's working area in East Manggarai Regency, shows that the number of respondents who have low family incomes is more, namely, 44 people (78.6%) compared to respondents who have high family incomes, 12 people (21.4 %). One of the factors that can cause low income is work, the level of work of the mother or husband which can affect family income because based on the results of the study, most pregnant women are unemployed. Low income is a barrier that causes people to not be able to buy the food in the required amount. So that the level of income greatly affects the purchasing power of the family for daily food which ultimately affects the mother's nutrition and causes malnutrition in the mother, such as Chronic Energy Deficiency (KEK). Family income is one of the factors that will determine the quantity and quality of food that will be consumed by the family. Income is the main

thing that affects the quality of the menu. That statement seems logical because people can't eat food that they can't afford. Little income also means low purchasing power, so they are unable to purchase the necessary amount of food; this scenario is extremely hazardous to family health and can have a negative influence on the nutritional status of pregnant women.

6. The Relationship between Mother's Education Level and Chronic Energy Deficiency Incidence (KEK) in Pregnant Women

Based on the results of interviews with pregnant women in the working area of the Borong Health Center, East Manggarai Regency, on the variable of the education level of pregnant women, it was found that there was no significant relationship between the mother's education level and the incidence of KEK. This is influenced because pregnant women who have a high level of education are more than pregnant women with a low level of education. High education of pregnant women with low income and low purchasing power resulted in the nutritional needs of mothers during pregnancy both in terms of quality and quantity not being met, eventually, the mother experienced KEK. Education is the main thing in improving human resources. Education level is one of the factors that can affect the quality and quantity of food because a higher level of education is expected to have better knowledge and information about nutrition, especially food consumption. In the interest of family nutrition, maternal education is very necessary so that a person is more responsive to nutritional problems in the family and can take appropriate action. The formal education of housewives often has a positive association with the development of food consumption patterns in the family. Several studies show that if the mother's education is high, her knowledge about nutrition and nutrition practices will improve. So that it can meet their nutritional needs.

7. The Relationship between Parity and Chronic Energy Deficiency (KEK) in Pregnant Women

Based on the results of interviews with pregnant women in the working area of the Borong Health Center, East Manggarai Regency showed that the number of respondents with good parity was 44 people (78.6%) compared to respondents with poor parity, namely 12 people (21.4%) because most of the respondents had poor parity. Most pregnant women have children <3 and are influenced by other factors that influence the incidence of KEK such as maternal age, level of employment, family income, pregnancy interval, energy intake, and protein intake. So it is hoped that prospective mothers will pay attention to nutritional conditions during pregnancy and should not give birth too often or delay pregnancy so that it is not at risk for the baby or the mother herself [(10).]

8. The Relationship between Pregnancy Distance and Chronic Energy Deficiency Incidence (KEK) in Pregnant Women

Based on the results of interviews with pregnant women in the working area of the Borong Health Center, East Manggarai Regency on the pregnancy distance variable, the results showed that pregnant women who had a pregnancy distance was at risk in the KEK group, which amounted to 20 people (35.7%) were greater than the non-KEK group, which was 20 people (35.7%) 3 people (5.4%). This is because the majority of pregnant women in the results of this study have a food intake that is less than the RDA. If the food intake of pregnant women is less than what is needed, then the reserves of nutrients in the mother's body will be used to cover the deficiency. If the next pregnancy is close to the previous pregnancy, then the mother does not have enough time to restore food reserves and will have the potential to cause malnutrition, one of which is KEK.

9. Relationship between Energy Intake and Chronic Energy Deficiency (KEK) in Pregnant Women

Based on the results of the study using a 2×24 hour recall with pregnant women in the working area of the Borong Public Health Center, East Manggarai Regency on the energy intake variable, it is known that pregnant women who have less energy intake who experience KEK are 25 people (44.6%) greater than those with low energy intake. the group that did not experience KEK was 13 people (23.3%). (23.3%). This is because the average KEK pregnant woman consumes less than 2,550 kcal of energy per day. This shows that the average energy consumption of KEK pregnant women is still less than the recommended RDA. Based on the results of interviews with pregnant women, most of the mothers have complaints of not being able to consume food properly or having no appetite, often vomiting, nausea when eating and most importantly, the intake of food consumed daily is varied because most pregnant women only eat consume staple foods, do not eat snacks so that they do not meet balanced nutrition for the mother and her fetus and her family.

10. Relationship between protein intake and chronic energy deficiency (KEK) in pregnant women

Based on the results of interviews using a 2×24 hour recall with pregnant women in the working area of the Borong Health Center, East Manggarai Regency, it shows that there is a relationship between protein intake and the incidence of KEK. This is because the amount of protein consumed by pregnant women is less than 76 grams per day, so it is less than the recommended Nutrition Adequacy Rate (RDA) which has been set, which is 56 grams per day with an additional second and third trimester pregnant women of 20 grams per day. In addition, the average occupation of husbands of pregnant women in the working area of the Borong Health Center is to work as fishermen, because the Borong City area is a coastal area with a large number of fish producers. However, the fish caught by the husband is not consumed by the family but is sold. So that the proceeds from the sale of fish are used to buy staple foods such as rice and the frequency of protein consumption.

For most of the pregnant women in the working area of the Borong Health Center, both vegetables and animals only 2-3 times per week are not consumed every day [(11).]

The implications or benefits of the research for the prevention of KEK Sevents at the Borong Health Center, East Manggarai Regency are the results of this study are expected to be information to determine the factors associated with the incidence of Chronic Energy Deficiency (KEK) in pregnant women at the Borong Health Center and evaluate family health in particular. pregnant mother. So that preventive measures can be taken.

Efforts to overcome KEK can be carried out by providing additional food (PM) programs in the form of biscuits which are distributed not only to pregnant women but also to women of childbearing age (WUS) who experience KEK, giving Fe tablets, and providing counseling to women of childbearing age (WUS) regarding reproductive health and preparation before and during pregnancy.

CONCLUSION

The conclusions from the results of the research on the analysis of factors related to the incidence of chronic energy deficiency (KEK) in pregnant women in the working area of the Borong Health Center, East Manggarai Regency, namely: there is a relationship between maternal age, mother's occupation, family income, pregnancy distance, energy intake, and protein intake with the incidence of KEK in pregnant women in the working area of the Borong Health Center and there is no relationship between the mother's level of knowledge, mother's education level, and parity with the incidence of KEK in pregnant women in the working area of the Borong Health Center, East Manggarai Regency. It is expected that pregnant women will receive health education in pregnant women's classes to prepare for pregnancy or counseling about nutritional needs before pregnancy and during pregnancy so that pregnant women can prepare well.

REFERENCE

1. Diza FH. Analysis of Factors Affecting Chronic Energy Deficiency (KEK) in Pregnant Women in the Work Area of Langsa Health Center, Langsa City, Aceh Province, 2016. Jumantik. 2017;2(2):1–11.
2. Ministry of Health RI. Indonesia Health Profile 2016 [Internet]. Jakarta: Jakarta; 2016. 1-220 p. Available from: http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Profil-Kesehatan-Indonesia-2016.pdf
3. Supariasa ID, B. B, I. F. Assessment of Nutritional Status. Jakarta: Jakarta: EGC Medical Book; 2016.
4. Febriyeni. Factors Associated with Chronic Energy Deficiency in Pregnant Women. 2017;2(3):2528–66510.
5. Riskesdas. Main Results of Basic Health Research 2018 [Internet]. Jakarta: Jakarta: Litbangkes.; 2019. Available from: https://www.litbang.kemkes.go.id/hasil-utama-riskesdas-2018/
6. East Manggarai District Health Office. Profile of the East Manggarai District Health Office. wholesale; 2018.

7. Notoatmodjo S. Health Research Methodology. Cer revision. Jakarta: Jakarta: PT. Rineka Cipta.; 2012. 37–41 p.
8. Atikah, Proverawati & Siti M. Menarche First Menstruation Full of Meaning. Yogyakarta: Nuha Medika; 2009.
9. Notoatmodjo S. Health Promotion and Behavioral Science. Jakarta: Rineka Cipta; 2007. 56–68 p.
10. Kristiyanasari W. Nutrition for pregnant women. Yogyakarta: Yogyakarta: Nuha Medika.; 2010.
11. Master VK. Factors Associated with Chronic Energy Deficiency (KEK) in Pregnant Women in Kamoning and Tambelangan Districts, Sampang District, East Java. 2014;193–202.
12. Musni M, S. M, R. A. Factors related to Chronic Energy Deficiency (KEK) in Pregnant Women at UPTD Ajanggale Health Center. Scientific Journal of Health Diagnosis. 2017;11(1).
13. Novitasari R. Relationship of Parity with Risk of Chronic Energy Deficiency (KEK) in Pregnant Women in Sukowono Village, Sukowono District, Jember Regency. University of Jember; 2016.
14. Simbolon & Bringwaty B. Prevention of stunting in the first 1000 days of life through specific nutritional interventions in pregnant women with Chronic Energy Deficiency. Depublish Y: editor. Yogyakarta; 2019.
15. Wibowo A. 200 Amazing Records of the Indonesian Archipelago. Jakarta: Ufuk Press; 2011.
16. Dictara AA, Angraini DI, Mayasari D, Karyus A. Relationship between food intake and chronic energy deficiency (KEK) in pregnant women in the Sukaraja Health Center in Bandar Lampung City. Majority Journal. 2013;9:1–6.