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The Relationship Between Protein Consumption And Income And The Incidence Of CED In Pregnant Women In The Working Area Of The Lembang Health Center

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ABSTRACT

Chronic energy deficiency is one of the malnutrition problems that often occur in pregnant women and is caused by a long-term lack of protein energy. The study's goal was to determine the relationship between protein consumption and income and the incidence of CED in pregnant women in the Lembang Health Center's working area.This study aims to determine the relationship between protein consumption and income and the incidence of CED in pregnant women in the working area of the Lembang Health Center. An analytical survey with a case control (retrospective) design was used in this study.This study analyzed the relationship between risk factors (protein consumption and income) and the incidence of CED in pregnant women in the working area of the Lembang Health Center. According to the results of this study, there is a relationship between protein consumption and the incidence of CED in pregnant women in the working area of the Lembang Health Center with a moderate level of relationship strength, and there is a relationship between family income and the incidence of CED in pregnant women in the Lembang Health Center work area with a weak level of relationship strength. The author's suggestion for the public, especially pregnant women, is that it is hoped that pregnant women can pay attention to and meet their nutritional needs, so that they avoid SEZs and actively seek information and ask lots of questions so they know more about health, especially related to CED problems.

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1. INTRODUCTION

Chronic energy deficiency is a problem of malnutrition that often occurs in pregnant women and is caused by a lack of protein energy over a long period of time. SEZ in pregnant women in developing countries is the cumulative result of malnutrition from the fetus through infancy, childhood, and adulthood. Pregnant women who are at risk of CED will cause several problems, which have a negative impact on the health level of pregnant women and the fetus (Nurul, 2015).

If the mother's status before and during pregnancy is normal, it is likely that she will give birth to a healthy, full-term baby with a normal weight. So it can be concluded that the quality of babies born is very dependent on the nutritional state of the mother before and during pregnancy. A woman can experience malnutrition due to a number of conditions, from malnutrition in childhood to pregnancy at a young age (Fitrianingsih, 2015).

Based on the 2012 Indonesian Demographic and Health Survey, the maternal mortality rate (MMR) in Indonesia is still the highest at 359 per 100,000 live births. This figure experienced a significant increase from the results of the 2007 IDHS, which were 228 per 100,000 births. The cause of maternal death with the highest percentage (31.8%) is bleeding.Anemia and CED in pregnant women are the main causes of bleeding and infection, which are the main factors of maternal death (Kemenkes RI in Cesia, 2017).

The prevalence of CED risk in women of reproductive age (WUS) in Indonesia is 19.1%. There is diversity in the prevalence of CED risk by province, including those belonging to the severe category found in NTT (40.8%) and the moderate category in five provinces, namely NTB (26.7%), Papua (25.7%), Bangka Belitung (22.4%), Central Java (22.2%), and East Java (21.9%). The prevalence of

SEZ risk for WUS in eastern Indonesia is the highest compared to Sumatra, Java, and Bali. Based on rural and urban areas, the prevalence of CED risk in WUS in rural areas (21.1%) is higher than in urban areas (17.3%). Meanwhile, according to the economic category using the poverty line, it is known that the prevalence of SEZ risk is 23.1% for poor WUS and non-poor WUS (Harahap in Najoan, 2011).

Based on the results of the 2013 Riskesdas, the proportion of pregnant women aged 15–49 years with a LILA of 23.5 cm or at risk of KEK in Indonesia was 24.2%. The lowest proportion is in Bali (10.1%), and the highest is in East Nusa Tenggara (45.5%). Overall, compared to 2007 data, the prevalence of CED risk in pregnant women increased 15.1% in all age groups in 2013.

According to data obtained from the Lembang Health Center from January to May 2020, there were 20 pregnant women who experienced SEZ events out of 246 pregnant women who visited the Lembang Health Center. Based on this, researchers want to dig deeper into the relationship between protein consumption and income and the prevalence of CED in pregnant women in the Lembang Health Center's working area.

2. METHOD

In this study, an analytical survey with a case-control approach (a retrospective) was used.This study analyzed the relationship between risk factors (protein consumption and income) and the incidence of CED in pregnant women in the working area of the Lembang Health Center in 2020. The population was all CED-pregnant women who visited the Lembang Health Center. Banggae Timur District, Majene Regency, will have as many as 40 people in 2020. The sample of pregnant women who experienced CED and was recorded in the medical record based on the LILA measurement results stated that they were less than 23.5 cm, totaling 20 respondents, and 20 pregnant women who were in the working area of the Puskesmas did not experience CED.

3. RESULTS AND DISCUSSION

According to table 5.2, of the 20 respondents in the case group, the highest age group was 17-22 years, with as many as 8 people (40%) and the lowest age group, 41-46 years, with 1 person (2%).Meanwhile, in the control group, the highest age group was 23–28 years with 6 people (30%) and the lowest age group was 41–46 years with 1 person (5%).

Based on table 5.3 above regarding the level of education, it shows that of the 20 respondents in the case group, it is known that the highest level of education is high school graduation or equivalent for as many as 9 people (45%), the level of education that is less attained is elementary school and university graduation, each of which is for 2 people (10%), and the control group is known to have the highest level of education taken by respondents, namely graduating from high school or equivalent for as many as 9 people (45%). Meanwhile, the respondents had a lower level of education, having graduated from junior high school or its equivalent and university, each of which had three people (15%).

Based on table 5.4 above regarding the type of work, it shows that of the 20 respondents in the case group, the majority worked as housewives, namely, 19 people (95%), and 1 person (5%) worked as an honorary worker. Meanwhile, of the 20 respondents in the control group, the majority worked as housewives, namely, 17 people (85%), while only 1 person (5%) worked as a civil servant.

Based on table 5.5, it is shown that of the 20 respondents in the case group, it was found that there were 12 respondents in the second trimester of pregnancy (60%) and there were no respondents (0%) in the first trimester of pregnancy. In the control group, it was known that respondents had 14 pregnancies in the second trimester (70%) and two women (10%) in the first trimester.

Table 5.6 above shows that of the 20 respondents in the case group, it is known that the majority of respondents are in the parity group 0-3, namely 17 people (85%), while only 3 respondents have parity 4-6 (15%). From the 20 respondents in the control group, it is known that the majority of respondents are in parity 0-3, namely 16 people (80%), and respondents with parity 4-6 are only 4 people (20%).

Table 5.7 above regarding the protein consumption of pregnant women in both the case and control groups shows the highest levels in the age group of 30-49 years, respectively, with 2 pregnant women (10%) and 7 (35%), and then the protein consumption of pregnant women was in the poor

category in the case group and the control group in the 19-29 year age group with 12 pregnant women (60%) and 6 pregnant women (30%), respectively, in the control group.

Based on table 5.10 above, it shows that of the 20 respondents in the case group who have sufficient income, there are only 4 people (20%), while 16 respondents (80%) have less income. Meanwhile, it was known that the majority of the 20 respondents in the control group had a family income level in the sufficient category—as many as 11 people (55%)—while respondents with income in the less category were nine people (45%).

Table 5.9 above shows that of the 20 respondents in the case group, 17 (85%) were pregnant women with a low protein consumption level, while only 8 (40%) of the 20 respondents in the control group were pregnant women with a low protein consumption level.

The results of the analysis test between the level of protein consumption and the incidence of CED in this study obtained a significant value of p = 0.034, which means p and a correlation coefficient of 0.455 with a value of = 0.05 using the Chi Square test.So it can be said that there is a relationship between the level of protein consumption and the incidence of CED in pregnant women, with the level of relationship being in the moderate category.

Table 5.10 above shows that of the 20 respondents in the case group, there were 16 (80%) pregnant women with low family income, and of the 20 respondents in the control group, 9 (45%) pregnant women had low income.

In this study, the results of the statistical analysis between income and CED with a value of = 0.05 using the Chi Square test yielded a significant value of p = 0.022, which means p and a correlation coefficient of 0.340.So it can be said that there is a relationship between income and the incidence of CED in pregnant women, with the level of the relationship being in the weak category.

1. CED occurrence in pregnant women described

The results of this study also showed that of the 20 respondents in the case group, it was known that the respondents' pregnancies were mostly in the second trimester, namely for 12 people (60%). Likewise with respondents in the control group, where the most pregnancies were also in the second trimester, as many as 14 people (70%). Meanwhile, regarding parity, it was shown that from the 20 respondents in the case group, data was obtained showing that the highest parity was in group 0-3, with 17 people (85%), as well as parity in the control group, which was also in group 0-3, namely 16 people (80%).

Pregnant women are nutritionally vulnerable; if pregnant women consume less protein, they will be at risk of experiencing CED. Pregnant women who experience CED will have a negative impact on pregnant women and their fetuses. Pregnant women with CED experience complications such as bleeding, not gaining weight normally, and being susceptible to infectious diseases. During labor, the mother will experience labor difficulties and length of time, preterm delivery, increased bleeding, and operative deliveries.

Pregnant women who have CED are more likely to have babies with low birth weight; low birth weight increases the risk of morbidity and mortality because babies are more susceptible to infectious diseases, weak immunity, failure of physical development, future learning disorders, and behavioral disorders, and in severe cases, the baby will die soon after birth.Low-birth-weight babies will make an important contribution to infant mortality and human quality in the future.

2. The Relationship between Protein Consumption and CED Events

In this study, the protein consumption of pregnant women at the Lembang Health Center was categorized into two categories, namely good and poor. It is said to be good if it fulfills the following conditions: 1) If pregnant women in the age group 16-18 consume 79 g of protein per day, 2) pregnant women in the age group 19-29 consume 76 g of protein per day, and 3) pregnant women in the age group 30-49 consume 77 g of protein per day,Likewise, the level of protein consumption is said to be insufficient if: 1) the level of protein consumption is not met (if the protein consumption of pregnant women aged 16–18 years is 79 g/day, 2) the protein consumption of pregnant women aged 19–29 years is 76 g/day, and 3) the protein consumption of pregnant women aged 30-49 years is 77 g/day).

Based on the results of a statistical analysis of the protein consumption level of pregnant women, it was found that out of the 20 respondents in the case group, the majority had a low protein consumption level, namely 17 people (85%). Meanwhile, in the control group, it was found that out of 20 respondents, the highest protein consumption level of pregnant women was in the "good" category, namely, 12 people (60%).

Based on the data that has been obtained, it can be said that most pregnant women consume less protein. This is because pregnant women have problems during early pregnancy, such as nausea and vomiting, and because there are an abundance of respondents at parity 0, who are just experiencing their first pregnancy, and because of the lack of knowledge of respondents on the level of protein consumption and foods consumed, which will have an impact on the nutritional state of pregnant women.

Protein is an important nutrient for the body because it functions as a builder and regulatory substance. Besides that, protein can be used as fuel if energy is needed and the body is not filled with carbohydrates and fats (Winarno in Pujiatun, 2016).

Protein has a function for growth and maintenance of the body and is very efficient in maintaining tissues in the body by utilizing existing proteins and reusing amino acids obtained from breaking down tissues to rebuild the same tissue or other tissues (Almatsier in Pujiatun, 2012).

Protein is a factor causing KEK in pregnant women because it is one of the body's energy sources. If pregnant women eat less protein for an extended period of time, it will harm their health and make them more vulnerable to diseases that can affect mothers who give birth to babies with low birth weight.Pregnant women need to consume protein for fetal growth, especially in the second trimester, because at this stage the growth of the fetus is very fast and the breasts and other organs of the pregnant woman's body are getting bigger, which results in the needs of the fetus also increasing. If the protein requirement is not fulfilled, it will result in a pregnant woman having a lack of energy.

In this study, the results of statistical analysis with a value of = 0.05 using the Chi Square obtained p = 0.034, which means (p) with a correlation coefficient of 0.455, so there is a relationship between the level of protein consumption and the incidence of CED, with the level relationship being in the weak category.In the research results table above, it is known that the incidence of CED in pregnant women is more common with less protein consumption, namely 85%, while there are 60% of pregnant women who do not experience CED with protein consumption in the "good" category.

The results of this study indicate that there are 40% of pregnant women who consume less protein but do not experience CED. Vice versa, there are 15% of pregnant women with good protein consumption who experience CED. This can happen because protein consumption is not the only factor associated with the incidence of CED in pregnant women.

3. The Relationship between Family Income and CED Occurrence in Pregnant Women

Income in this study is the income (salary) that a family gets in a month from various sources of family income in accordance with the UMP (Rp. 2,193,530.00) in West Sulawesi in 2020. The level of family income in this case is divided into two, which are categorized as sufficient if family income is below UMP/month and less if family income is above UMP/month.

In accordance with the results of statistical analysis, it is known that out of the 20 respondents in the case group, the majority of respondents have income levels that are in the lower category, namely 16 people (80%). Whereas in the control group, out of 20 respondents, it could be seen that the majority had sufficient income, namely 11 people (55%).

In this study, the results of bivariate analysis with = 0.05 using the Chi Square yielded p = 0.022, which means (p) with a correlation coefficient of 0.340.With these results, it can be said that there is a relationship between income and the incidence of CED in pregnant women in the working area of the Lembang Health Center, with the level of relationship being in the weak category.

Income is the main thing that affects the quality of dishes. The level of income affects the consumption of food in the family. Low income causes low purchasing power as well, so that they are unable to buy food in the amount needed.

Table 1. Distribution of Respondents by Age at the Lembang Health Center

Age of respondents (years)	Cases		Control		Total	
	n	%	n	%	n	%
17- 22	8	40	4	20	12	30
23-28	6	30	6	30	12	30
29-34	3	15	5	25	8	20
35-40	2	10	4	20	6	15
41-46	1	2	1	5	2	5
Total	20	100	20	100	40	100

Table 2. Distribution of Respondents Based on Education in the Work Area of the Lembang Health Center

Education	Cases		control		Total	
	n	%	N	%	n	%
Completed Elementary s	2	10	5	25	7	17,5
Graduated Middle School/equivalent	7	35	3	15	10	25
Graduated from High School	9	45	9	45	18	45
College	2	10	3	15	5	12,5
Total	20	100	20	100	40	100

Table 3 Distribution of Respondents Based on Education in the Work Area of the Lembang Health Center in

Occupation	Cases		Control		Total	
	n	%	n	%	n	%
IRT	19	95	17	85	36	90
Honorary	1	5	2	10	3	7,5
PNS	0	0	1	5	1	2,5
Total	20	100	20	100	40	100

Table 4 Distribution of Respondents Based on the Age of Pregnancy of Pregnant Women in the Working Area of the 2020 Lembang Health Center

Gestational Age	Cases		Control		Total	
	n	%	N	%	n	%
Trimester I	0	0	2	10	2	5
Trimester II	12	60	14	70	26	65
Trimester III	8	40	4	20	12	30
Total	20	100	20	100	40	100

Table 5 Distribution of Respondents Based on Parity in the Work Area of the Lembang Health Center

Parity	Case		Control		Total	
	n	%	N	%	n	%
0-3	17	85	16	80	33	82,5
4-6	3	15	4	20	7	17,5
Total	20	100	20	100	40	100

Table 6. Distribution of Respondents Based on Protein Consumption Age Group of Pregnant Women in the Work Area of the Lembang Health Center

Consumption Protein	Age (Years)	Cases		Control		Total	
		N	%	n	%	n	%
Good	16-18	0	0	0	0	0	0
	19-29	1	5	5	25	6	15

	30-49	2	10	7	35	9	22,5
	16-18	3	15	0	0	3	7,5
Less	19-29	12	60	6	30	18	45
	30-49	2	10	2	10	4	10
Total		20	100	20	100	100	100

Table 7. Distribution of Respondents Based on Family Income of Pregnant Women in the Working Area of the Lembang Health Center

Income	Cases		Control		Total	
	n	%	n	%	n	%
Enough	4	20	11	55	15	37,5
Less	16	80	9	45	25	62,5
Total	20	100	20	100	40	100

Table 8. Relationship between Protein Consumption and CED in Pregnant Women in the Working Area of the Lembang Health Center

Comsumption of Protein	Cases		Control		Total		*P value*	*Contigency Coefisient*
	n	%	N	%	N	%		
Good	3	15	12	60	15	37,5	0,034	0,455
Less	17	85	8	40	25	62,5		
Total	20	100	20	100	40	100		

Table 9. Relationship between Family Income and SEZ Occurrence in Pregnant Women in the Work Area of the Lembang Health Center

Income	Cases		Control		Total		*P value*	*Contigency Coefisient*
	n	%	n	%	n	%		
Enough	4	20	11	55	15	37,5	0,022	0,340
Less	16	80	9	45	25	62,5		
Total	20	100	20	100	40	100		

4. CONCLUSION

There is a relationship between protein consumption and the incidence of CED in pregnant women in the working area of the Lembang Health Center with a moderate level of relationship strength, and there is a relationship between family income and the incidence of CED in pregnant women in the Lembang Health Center work area with a weak level of relationship strength.

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