



A LITERATURE REVIEW: FACTORS INFLUENCING THE INCIDENCE OF PREGNANT WOMEN WITH CHRONIC ENERGY DEFICIENCY

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Article info	ABSTRACT
<p>Corresponding Author:</p> <p>Rika Triyana rikamamaalya@gmail.com Faculty of Public Health, University of Kediri</p>	<p>Maternal and child health issues are one aspect that needs attention. One of the problems that arise is pregnant women with chronic energy deficiency (CED) caused by a lack of energy intake from macronutrients and micronutrients. The objective of this study is to analyze factors related to the incidence of CED in pregnant women. The method used a library research method by critically reviewing academic-oriented literature. There were 6 research journals adjusted to the literature review problem. The result showed that the prevalence of chronic energy deficiency risk increased in all age groups and conditions of women (pregnant and non-pregnant). In non-pregnant women aged 15-19 years, the prevalence increased by 15.7%. Likewise, in pregnant women aged 45-49 years, it increased by 15.1%. Suggestions addressed to health workers are expected to increase health education efforts in the form of counseling on the dangers of CED in pregnant women and other materials related to the importance of fulfilling nutrition in pregnant women, as well as increasing community empowerment to achieve coverage of pregnancy checks by health workers.</p> <p>Keywords: <i>pregnant women, chronic energy deficiency (CED), pregnancy</i></p>
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INTRODUCTION

Maternal and child health issues are one of the aspects that are considered in the Nawa Cita Program of the President of the Republic of Indonesia currently to improve the quality of life of the Indonesian people. These problems do not stand alone but are related to each other (Triatmaja, 2017). One of the problems that arise is maternal and child health. The problem of maternal nutrition is chronic energy deficiency (CED). According to the Ministry of Health of the Republic of Indonesia (2018), CED is caused by a lack of energy intake from macronutrients and micronutrients in women of childbearing age (adolescence to pregnancy). One of the identifications of CED in pregnant women is upper arm circumference < 23.5 cm. (Directorate General of Public Health, Ministry of Health of the Republic of Indonesia, 2018) (Putra and Dewi, 2020). SKRT data in 2001 showed that 90% of maternal deaths occurred during childbirth and immediately after childbirth. The most common direct causes of maternal death are

bleeding at 28%, eclampsia at 24% and infectious diseases at 11%, while indirect causes are chronic energy deficiency (CED) at 37% and anemia at 40%. The prevalence of CED risk in women in Indonesia (2007) was 19.1%. One of the provinces with moderate CED prevalence is East Java at 21.9% (Riskesdas, 2007). (Mahirawati Vita, 2014).

Several risk factors that influence the lack of energy and protein intake in pregnant women include age, parity, education level, economic status and frequency of Antenatal Care (ANC). Knowledge of nutrition in pregnant women also contributes to the occurrence of CED. (Mulyani et al., 2021).

From the background above, researchers want to analyze the factors related to chronic energy deficiency (CED) in pregnant women. The still high coverage of pregnant women with CED is one of the problems that needs to be resolved. Therefore, it is important to know the factors related to CED in pregnant women.

METHOD

This study is a literature review that aims to determine the factors related to CED in pregnant women. The review process begins by identifying problems in journal articles that are relevant to the research topic. The articles to be reviewed are obtained through a search on Google Scholar.

RESULT AND DISCUSSION

Finding

Literature search through electronic databases using google scholar resulted in 60 articles that have the potential to be reviewed. After identifying the abstracts, 10 articles were selected. And further identification was carried out in more detail to determine relevant articles and meet the inclusion criteria in this literature review. From this identification, 6 articles were obtained to be reviewed in this study.

No	Title	Researcher	Year	Design of Research	Population & Sample	Sampling Technique	Result
1	Risk Factors for Chronic Energy Deficiency in Pregnant Women at Gunungpati Health Center	Ardianti Lestari	2021	analytical observational with case-control design	All pregnant women in the Gunungpati Health Center work area and experienced CED in 2020 amounting to 74 cases. The sample set was 35 cases and 35 controls	purposive sampling	There was a significant relationship between nutritional status before pregnancy (OR=57.30; 95% CI=7.02-471.50; p-value= <0.001), comorbidities (OR=6.60; 95% CI=1.32-32.84; p-value=0.01), unplanned pregnancy (OR=3.06; 95% CI=1.12-8.37; p-value=0.02), employment status during pregnancy (OR=2.87; 95% CI=1.10-7.59; p-value=0.03), and family income (OR=2.84; 95% CI=1.10-7.97; p-value=0.04) with the incidence of CED in pregnant women in the Gunungpati Health Center work area.
2	Risk Factors for Chronic Energy Deficiency (CED) in Pregnant Women in Cikembar, Sukabumi Regency	Muh. Guntur Sunarjono Putra, Mira Dewi	2020	Quantitative with Cross Sectional design	The number of subjects in this study consisted of 35 pregnant women with CED (upper arm circumference <23.5 cm) who met the criteria, 35 pregnant women with normal nutritional status were selected randomly (random sampling) and included in the normal group.	Random Sampling	There was a significant relationship between maternal knowledge and household food security with the incidence of CED in pregnant women (p<0.05), but between the level of energy and protein adequacy showed an insignificant relationship (p>0.05). Multiple logistic regression analysis showed that the factor influencing the incidence of CED in pregnant women was household food security. In addition, the level of knowledge of nutrition and health, food consumption, and household food security in CED pregnant women was in a low or deficit condition compared to normal pregnant women.
3	Factors Related to Chronic Energy Deficiency (CED) Status of Pregnant Women in Kediri Regency	Nining Tyas Triatmaja	2017	cross-sectional study	The number of samples in this study was 70 pregnant women in the third trimester. Meanwhile, the research subjects were calculated using the calculation of the minimum number of subjects with a	Random Sampling	The results of the analysis showed that there was a relationship between the age of the subject and CED status of the subject (p < 0.05). Other subject characteristic variables such as education, occupation, family size, socioeconomic, and parity were not related to the CED status of the subject (p > 0.05). The same thing was also found in the relationship between eating habits and food quality with CED status of the

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					precision of 10% and a prevalence of CED of 7.4% so that the minimum number of subjects was 25 people.		subject
4	Factors Associated with Chronic Energy Deficiency (CED) in Pregnant Women in Kamoning and Tambelangan Districts, Sampang Regency, East Java.	Vita Kartika Mahirawati	2014	Quantitative, Cross-sectional	The research sample was pregnant women registered in the maternal cohort data, which was taken randomly as many as 104 people.	Random sampling	Socioeconomic factors: Pregnant women with CED who had elementary school education were 35.5% and those who had not graduated from elementary school were 29.4%. As many as 39.2% of mothers who had husbands work as farm laborers with an average income of less than 1 million rupiah per month. Maternal factors: as many as 70.6% of pregnant women with CED were between the ages of 21-34 years. Pregnant women with CED who were married under the age of 17 are 41.1%, those who were pregnant for the first time at the age of 18-20 are 31.4%. Pregnant women with CED who had a frequency of eating 3 times per day are 54.9%. As many as 70.6% of pregnant women with CED suffer from anemia. There were 66.7% of pregnant women with CED who took iron pills a day.
5	Factors Associated with Chronic Energy Deficiency (CED) in Pregnant Women at the Sukoharjo Inpatient Health Center UPT, Pringsewu Regency in 2020	Rapih Mijayanti, Yona Desni Sagit, Nur Alfi Fauziah, Yetty Dwi Fara	2020	Quantitative, Cross-sectional	The population was 136 pregnant women who visited the Sukoharjo Inpatient Health Center from August to October 2019.	accidental sampling.	Factors related to chronic energy deficiency (CED) in pregnant women at the Sukoharjo Inpatient Health Center, Pringsewu Regency are education factor p-value = 0.000, consumption pattern factor p-value = 0.000, and food taboo factor p-value = 0.000.
6	Factors influencing the incidence of	Numbi Akhmadi Teguh, Ayu	2019	observational analysis using a case control	The accessible population in this study were	purposive sampling	Approximately 13 respondents (36.1%) were aged <20 years / >35 years with the highest

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	chronic energy deficiency (CED) in pregnant women in the working area of UPT Puskesmas I Pekutatan, Jembrana, Bali	Hapsari, Putu Ria Asprila Dewi, Putu Aryani		study design.	pregnant women recorded in the medical records at the UPT Puskesmas I Pekutatan for the period 01 January-31 May 201 with 36 respondents, 12 cases (CED) and 24 controls (Non-CED).		education being high school graduates, namely 20 respondents (55.6%). Most respondents were unemployed (91.7%) and had low economic status (69.4%). Most respondents had children <2 (69.4%). Economic status (OR=115; 95%CI: 9.3-1418), education level (OR=2.3; 95%CI: 0.5-9.5), age (OR=7.6; 95%CI: 1.6-35.9), pregnancy spacing (OR=11; 95%CI: 1.7-69), number of parities (OR=7.6; 95%CI: 0.7-83.7), and frequency of ANC visits (OR=5; 95%CI: 0.9-26.4).

Discussion

The nutritional status of pregnant women is one of the factors that can affect the condition of pregnancy and fetal health. CED in pregnant women can be caused by age, economic status, low education of pregnant women, pregnancy spacing, gravida, infectious diseases, nutrient intake and others (Andini, 2020).

The characteristic factors of pregnant women are age. Pregnant women who marry at a young age tend to be at risk of experiencing CED. Pregnant women who are under 20 years old have a higher risk of CED, even pregnant women who are too young can significantly increase the risk of CED (Teguh et al., 2019).

Age is too young or too old has a risk of experiencing CED. This means that if the age of pregnant women who are <20 years and> 35 years old has a greater risk in pregnancy, including experiencing CED. Because in pregnant women <20 years old, the condition of the reproductive organs is not yet mature, while in pregnancies> 35 years the condition of the reproductive organs has decreased (Ernawati, 2018).

The results of the study showed that the causative factors of CED were respondents who had a low economy. Looking at the results of the study, pregnant women with low family income (purchasing power), the inability to buy food needed by the family causes a decrease in the quantity and quality of food consumption which can lead to malnutrition (Mijayanti et al., 2020).

In the relationship between education factors and the incidence of CED, it is concluded that there is a relationship between education factors and Chronic Energy Deficiency (CED) in pregnant women. Where mothers with low education will be 16,250 times at risk of experiencing CED compared to mothers with higher education. The low level of education of pregnant women will affect their understanding of the health of their pregnancy, especially regarding food consumption for pregnant women (Mulyani et al., 2021).

The pregnancy spacing factor can affect the occurrence of CED, if the pregnancy spacing is less than 2 years, there is a risk of experiencing CED because the mother does not get the opportunity to improve her own body (Husada et al., 2020). The results of this study showed that there is a relationship between abstinence from eating

and chronic energy deficiency (CED), this is because public beliefs about health and nutritional conspiracies for pregnant women greatly influence the selection of food ingredients. The more foods that are forbidden to eat, the smaller the chance of consuming a variety of foods (Mahirawati Vita, 2014). In this study, it was found that pregnant women who experience infectious diseases are at risk of experiencing CED because infectious diseases will inhibit the absorption of nutrients in the body, so that the food consumed by pregnant women cannot meet the needs during pregnancy. The types of infectious diseases that can cause CED in pregnant women include diarrhea, ARI and asthma (Yuliastuti, 2014).

CONCLUSION

One of the important factors in pregnancy is the nutritional status of the mother. Nutritional intake in pregnant women greatly determines the health of the mother and the fetus she is carrying. From the results of the analysis of the five journals used as sources of the Literature Review, the author can conclude that there are several factors related to chronic energy deficiency (CED) during pregnancy. Factors related to chronic energy deficiency (CED) in pregnancy include nutrient intake factors, age factors, pregnancy spacing, economic status, social and family support, education and knowledge factors, and disease or infection factors.

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