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## Chronic Energi Deficiency Factor`s In Pregnant Women: Literature Review

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### Abstract

Chronic Energy Deficiency (CED) is one of the condition in where woman age fertile (WUS) experience lack nutrition ( calories and protein) that lasts a long time or chronic . Someone own risk KEK If have size LILA < 23.5 cm. Research method search article This use from Google Scholar and PubMed which then conducted a review with keywords not enough energy chronic and mother pregnant , selected articles is article Indonesian and English English as many as 8 journals that can be accessed . Research results obtained that intake energy , intake carbohydrates , fat intake , protein intake , disease infections that occur in mothers , education mother , job mother , income family , nutritional status before pregnant , and age Mother is factor risk occurrence of KEK in mothers pregnant.

**Keywords:** KEK, mother pregnant

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## INTRODUCTION

Sustainable Development Goals (SDGs) are a series of goals set by Union Nations (UN) For reach the life that more Good And more sustainable for all person. Wrong One SDGs development indicators are the implementation of good health. The goal of this indicator is to ensure a healthy life and promote well-being for all people at all ages. One of the expected targets is to reduce the maternal mortality ratio to less than 70 per 100,000 birth life on year 2030 (SDGs, 2023).

World Health Organization (WHO) state number death Mother very high. Around 287,000 women died during pregnancy and childbirth. on year 2020. Almost 95 percent from all over death Mother occurred in low- and middle-income countries in 2020 (WHO, 2023). Causes of maternal death are related to bleeding, infection, high blood pressure during pregnancy, and other complications (WHO, 2023).

Pregnant women with poor nutritional status can cause chronic energy deficiency (CED). Chronic energy deficiency (CED) is one of the One condition in where woman age fertile (WUS) experience chronic or chronic malnutrition (calories and protein) (Thamaria, 2017). Somebody own risk KEK If have size LILA < 23.5 cm (Hardinsyah and Supriasa, 2016). The prevalence of malnutrition in pregnant and lactating women in Pakistan is 16.1 percent and in non-pregnant couples is 12.5 percent, while in Indonesia, 12-22 percent of women suffer from chronic energy deficiency (WHO, 2019). Report Research Health Base (Basic Health Research) year 2018 show The prevalence rate of KEK in pregnant women in Indonesia is 17.3 percent of cases (Ministry of Health, 2018).

Nutritional problems in pregnant women are multidimensional problems that are influenced by various factors, such as economic, educational, socio-cultural, and health factors. *The United Nations Children's Fund* (UNICEF) developed the concept that malnutrition is caused by direct causes, household-level problems and root causes. Economic crisis, political, And social is root problem national from incident malnutrition. At the household level, malnutrition is caused by low household food security, environmental sanitation and inadequate health services. Lack of food consumption and the presence of infectious diseases are direct causes of nutritional problems

(Thamaria, 2017). Based on this description, researchers are interested in studying the factors that influence KEK in pregnant women

## RESEARCH METHODS

This study uses a *literature review method*. Data search tools with the help of *search engines*, namely *Google Scholar* and *PubMed* which use national and international journals. The search uses the keywords " chronic energy deficiency and pregnant women ". In data collection, the author uses articles with the following inclusion criteria: *free full text*, year of publication with a span of 5 years (2019-2024), using Indonesian or English, has a relationship with keywords. While the exclusion criteria are articles that have no relationship with keywords, do not have full text access, use languages other than Indonesian and English. The results of the literature obtained were 8 literatures with 1 journal from *PubMed* and 7 journals from *Google Scholar*.

## RESULTS AND DISCUSSION

Table 1. List of articles

No	Author Name / Title	Method	Results	Database/ Year
1.	Wati, Murwani, Kartasurya, Sulistiyani/ Determinants of chronic energy deficiency (CED) incidence in pregnant women: A cross-sectional study in Banyumas, Indonesia.	<i>Cross-sectional</i>	extreme maternal age (OR; 3.49; 95%CI: 1.10–11.05), low educational attainment (OR: 4.12; 95%CI: 1.37–12.33), short pregnancy interval (OR; 7.30; 95%CI: 1.84–28.99), low frequency of ANC (OR: 3.06; 95%CI: 1.01–9.19) and low protein intake (OR: 6.80; 95%CI: 1.62–28.59) were associated with CED incidence.	Pubmed /2024
2.	Andini/ Connection Socio-Economic and Age Factors Pregnancy With Incident Lack Energy Chronic In Pregnant Women In Health Center Prambontergayang Regency Tuban .	<i>Cross-sectional</i>	Age mother, education, income and work own connection with KEK incident with sig value < 0.05.	google scholar/ 2020
3.	Marjan, Aprilia, and Fatmawati / Analysis Determinant Related Factors with Energy Deficiency Event Chronicle (KEK) on	<i>Cross-sectional</i>	There is connection variable age, parity, knowledge nutrition, intake energy and intake protein with KEK incident in mother pregnant. From results multivariate show that intake energy is the most dominant	google scholar/ 2021

	Mother Pregnant in the Mountain Region Sindur , Bogor.		factor relate with KEK.	
4.	<b>Putra and Dewi/ Risk Factors for Low Energy Chronic (CED) in Pregnant Women in Cikembar Regency Sukabumi .</b>	<i>Cross-sectional</i>	There is significant relationship between IMT pre - pregnant with incidence of CED (p<0.05) and is present meaningful difference based on pre-pregnancy BMI in both group subjects (p<0.05).	google scholar/2020
5.	Mustafa, Nurjana , Widjaja, Widayati / Risk Factors Dominant Affecting Lack of Energy Chronic Obesity (CED) in Pregnant Women in Indonesia in 2018	<i>Cross-sectional</i>	Medical history TB infection is factor the most dominant risk to incident KEK on mother pregnant in Indonesia based on 2018 Riskesdas data .	google scholar/2021
6.	Latif, Rahayu, and Mansyur/ Related Factors with Lack Energy Chronic (CED) in Pregnant Women in Working area Tosa Health Center City Tidore Archipelago Year 2018.	<i>Cross-sectional</i>	Intake energy and income family influential significant with KEK in the mother pregnant with the P value is p=0.01 and p=0.00 less from 0.05 whereas protein intake , fat, knowledge , age Mother pregnant , and distance birth No relate with KEK on Mother pregnant .	google scholar/2019
7.	<b>Sustainable/ Risk Factors for Low Energy Chronic in Pregnant Women at the Health Center Mount Pati</b>	<i>Case control</i>	Nutritional status before pregnant , disease accompanying , pregnancy No planned , job status moment pregnant and income family is factor risk of KEK in mothers pregnant in the work area Health Center Mount Pati .	google scholar/2021

Purpose of doing this literature review For know factors that influence occurrence of KEK in mothers pregnant . Deficiency Energy Chronicle is condition Mother pregnant woman suffering lack food that lasts a long time with various the emergence disturbance health (Novitasari, Wahyudi and Nugraheni, 2019) . The type of anthropometry used For measure risk of chronic KEK in mothers pregnant is circumference arm above ( LiLA ). The target is women aged 15 to 55 years consisting of from teenager , mother pregnant , breastfeeding and couples age fertile ( PUS). LiLA threshold with the risk of CED is 23.5 cm. If LiLA not enough from 23.5 cm means woman the have KEK risk and estimated will giving birth to LBW ( Supariasa , 2016).

One of The cause of KEK is intake Eat the individual who will influence nutrients consumed. The occurrence of KEK in mothers pregnant generally due to Because low intake substance nutrition Mother during pregnancy No only have an impact on the mother and the baby she gives birth to , but also other factors risk death mother (Husna, Andika, and Rahmi, 2020).

Viewed in a way overall review results of 8 articles the show that Mother pregnant women who suffer from KEK experience intake undereating , which is a possibility due to Because existence imbalance intake nutrition ( energy and protein), so that substance required nutrition body No sufficient . Based on results from to 8 articles research , in each article explain that one of The cause of KEK is consumption eat something that is not Enough contain energy and protein as well availability food families who are lacking . Intake energy is one of the reason incident not enough energy chronic (CED) in mothers pregnant . Intake low energy will impact on nutritional status . Lack of intake energy will affect availability substance nutrition such as protein, fat and carbohydrates which are source energy alternative , if body lack energy so carbohydrates , protein or fat will experience changes . If function main from third substance nutrition the decreases , then will influential big on the nutritional status of KEK especially woman who is pregnant (Latif, Rahayu, and Mansyur, 2018). Fat intake is closely related with circumference arm on someone , where when We consume foods that contain fat, then will happen storage in body . According to Latif, et al. (2018) fat intake is also related with KEK incident in mother pregnant . In theoretical protein intake is related with size circumference arm above , if sufficient protein intake , then He will functioning as energy alternative final after carbohydrates and fats are used because protein is multi- functional that is can look after network body and also increase organ growth ( Ministry of Health of the Republic of Indonesia, 2014). Research conducted by Marjan, Aprilia, and Fatmawati (2021) stated that there is a relationship between protein intake and KEK in pregnant women. In addition to food intake, the direct factor causing KEK is infection in pregnant women. According to Mustafa, et al. (2018), TB infection is one of the risk factors for KEK in pregnant women.

Apart from direct factors, the causative factors of KEK also come from indirect factors. According to Lestari (2021), nutritional status before pregnant , pregnancy No planned , job status moment pregnant and income family is factor risk of KEK in mothers pregnant . According to Andini (2020) the age mother , education , income and work own connection with KEK events . Age mothers at risk the occurrence of KEK is age Mother pregnant at risk that is under 20 years and over 35 years . Low maternal education is also a factor factor the occurrence of KEK. Low education sometimes associated with knowledge mother . I am pregnant with pre-pregnancy BMI condition skinny category will at risk experiencing KEK compared to Mother pregnant with pre-pregnancy BMI normal category . In general , women who have The big LiLA so will have a large BMI . This is because of LiLA consists of from muscle , fat, and bone . Pre-pregnancy BMI or during pregnancy will increase when LILA's size increased by 1 cm and age increased by 1 year . Every 1 cm increase in LILA size then will increase BMI by 0.815 kg/m<sup>2</sup> (Putra and Dewi, 2020).

## CONCLUSION

Based on results literature review of article said , shows that causes of KEK in mothers pregnant consists of from factor direct and factors No direct . Direct factors originate from intake eat ( intake) energy , intake carbohydrates , fat intake and protein intake ) and disease infection that occurs in the mother . Factors not direct like education mother , job mother , income family , nutritional status before pregnant , and age Mother.

## REFERENCES

- Andini, FR (2020). The Relationship Between Socioeconomic Factors and Gestational Age With Incident Lack Energy Chronic On Mother Pregnant In Prambontergayang Health Center, Tuban Regency. *Amerta Nutrition* , 4(3). p. 218.
- Hardinsyah., Thank you, IDN (2016). *Knowledge Nutrition Theory & Application* . Jakarta: Medical Book Publisher (EGC)
- Husna, A., Andika, F., Rahmi, N. (2020). Determinants of Chronic Energy Deficiency (CED) Incidence in Pregnant Women at Lam Hasan Health Center, Peukan Bada District, Aceh Besar Regency. *Journal of Healthcare Technology and Medicine* , 6(1), p. 608
- Ministry of Health. (2014). *Survey Consumption Food Individual Indonesia 2014* . Indonesian Health Research and Development Agency.
- Ministry of Health of the Republic of Indonesia. (2018). *National Basic Health Research* . National Research Agency And Development Health Ministry Republic of Indonesia Year 2018, 1– 67
- Latif, U., Rahayu, A., Mansyur, S. (2019). Factors Related to Lack Energy Chronic (SEZ) on Mother Pregnant in Region Work of Tosa Health Center, Tidore Islands City in 2018. *Biosciences and Technology Journal* , 1(01), pp. 83–94.
- Sustainable, A. (2021). Factor Risk Not enough Chronic Energy in Pregnant Women at the Health Center Mount Pati. *Sport and Nutrition Journal* , 3(2), pp. 1–13.
- Marjan, AQ, Aprilia, AH, Fatmawati, I. (2021). Analysis of Determinant Factors that Relate with Incident Not enough Energy Chronicle (SEZ) on Pregnant Women in the Gunung Sindur Area, Bogor. *Integrated Health Journal* , 12(1), pp. 39–47.
- Mustafa, H., Nurjana, MA , Widjaja, J., Widayati, AN (2021). Risk Factors Dominant Affecting Lack of Energy Chronic Obesity (CED) in Pregnant Women in Indonesia in 2018. *Health Research Bulletin Vol. 49, No. 2, June 2021: 105- 112*
- Novitasari, YD, Wahyudi, F. Nugraheni, A. (2019) 'Causes of KEK in pregnant women at the Rowosari Health Center, Semarang', *Diponegoro Medical Journal* , 8(1), pp. 562–571.
- Putra, MGS, Dewi, M. (2020). Risk Factors for Chronic Energy Deficiency (CED) in Pregnant Women in Cikembar, Sukabumi Regency. *ARTERY: Journal of Health Sciences* , 1(4), pp. 319–332.
- Thank you, I. D. N. (2012). *Evaluation Status Nutrition*. Jakarta: EGC
- Sustainable Development Goals Indonesia (2023). *Agenda 2030 For Sustainable Development* . Retrieved 10 March 2024.
- Thamariah N. (2017). *Evaluation Status Nutrition* . Ministry Health Republic of Indonesia
- Wati, EK, Murwani, R., Kartasurya, M., Sulistiyani. (2024). Determinants of chronic energy deficiency (CED) incidence in pregnant women: A cross-sectional study in Banyumas, Indonesia. *Narra J* 4(1):e742. doi: [10.52225/narra.v4i1.742](https://doi.org/10.52225/narra.v4i1.742)
- World Healt Organizations (2023). *Maternal mortality* . Accessed 14 March 2024. <https://www.who.int/news-room/fact-sheets/detail/maternal-mortality>