

# The Relationship between Consumption Patterns and Nutritional Status of Pregnant Women at the Kuta Padang Layung Health Center

<sup>1</sup>Dian Nabillah, <sup>2</sup>Suci Eka Putri, <sup>3</sup>Khairunnas, <sup>4</sup>Itza Mulyani, <sup>5</sup>Adelina Irmayani Lubis

<sup>1</sup>Universitas Teuku Umar, Indonesia, diannabillah15@gmail.com

<sup>2</sup>Universitas Teuku Umar, Indonesia, suciekaputri@utu.ac.id

<sup>3</sup>Universitas Teuku Umar, Indonesia, khairunnas@utu.ac.id

<sup>4</sup>Universitas Teuku Umar, Indonesia, itzamulyani@utu.ac.id

<sup>5</sup>Universitas Sriwijaya, Indonesia, adelina.irmayani@fkm.unsri.ac.id

**Corresponding author** : Suci Eka Putri, e-mail : suciekaputri@utu.ac.id

## ABSTRACT

Chronic Energy Deficiency (CED) which is defined as a lack of protein and energy consumption is one of the factors causing maternal mortality. The Maternal Mortality Rate (MMR) in the world according to WHO (2019) is 303,000. The maternal mortality rate in ASEAN is 235 per 100,000 live births. The nutritional condition of pregnant women is influenced by several variables, namely food intake, maternal health conditions, gestational age, maternal activity, income, knowledge, cultural food taboos, pregnancy spacing and parity. The purpose of this study was to determine the relationship between eating habits and the nutritional status of pregnant women at the Kuta Padang Layung Health Center. This study describes the correlation using a cross-sectional method using quantitative data, sampling techniques using research instruments, food recall. The results showed that in 2023 the eating habits and nutritional status of pregnant women at the Kuta Padang Layung Health Center had a p-value of 0.000 ( $p < 0.05$ ). For the nutritional status of pregnant women, the majority are in the good category (69.4%), the highest energy intake (65.9%), the highest protein intake (76.5%), the highest carbohydrate intake (67.1%), the highest fat intake (90.6%), and the highest consumption frequency (71.8%) are all in the good category.

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## Introduction

Pregnancy makes women more sensitive to nutritional issues and causes them to seek more information about nutrition. Poor maternal and fetal outcomes have been associated with increased risk of complications such as intrauterine growth retardation, late-life bleeding, diarrhea, neonatal and infant mortality, and morbidity. On the other hand, without nutritional deficiencies, it has been shown to have physiological effects that manifest as causes of stunting and growth in children and chronic diseases in older adults (Mulyani et al. 2020, Mulyani et al. 2023, The World, B; P. Luigi Roco, et al; B. Gebre, et al in Debela, B et. al 2023).

One of the things that affect the nutritional status of pregnant women is diet, parity, cultural dietary restrictions, gestational age, maternal activity, income, and maternal health status (Muliadi et al. 2023, Paramashanti, 2019). Chronic energy deficiency is one of the factors causing maternal mortality (CED). Low birth weight affects fetal growth and development, pregnant women with CED are more likely to give birth to premature babies, which may affect the child's IQ in the future. The role of proper nutrition from the first trimester of pregnancy to the first thousand days of life is very

important. One of the nutritional problems faced by pregnant women is chronic energy deficiency (CED). According to the World Health Organization (WHO), pregnant women in poor countries are more likely to experience chronic energy deficiency (CED) than pregnant women in developed countries. Among pregnant women in Indonesia, one of the most common nutritional problems is a lack of protein calories (Dini et al., 2021).

Chronic Energy Deficiency (CED) is usually suffered by suburban women (WUS). WUS are women whose reproductive systems function well and are at a mature stage of development. The age range of postpartum mothers, prospective brides, young women, and female employees is 15-49 years. Insufficient protein and energy intake is referred to as CED. Changing the upper arm circumference is one way to identify those at risk of CED (LILA). The risk of kinetic energy disorders in the suburban women group is indicated by the use of a cutoff value of less than 23.5 cm. (Angraini, 2018, Marbun et al. 2023).

According to Dagne et al. (2021), several countries in the world have high prevalence rates of CED in 2021, including Uganda (22.3%), Botswana (19.5%), India (19.5%), Malaysia (8.5%), Colombia

(2.8%), and India (26.2%). Based on the 2018 Basic Health Research (Riskesdes) statistics, the prevalence of anemia was around 48.9%, and the prevalence of CED risk is still quite high in Indonesia, namely 17.3% of whom are in the 15–49 year age group. Throughout Aceh, the percentage of pregnant women at risk of CED is 8.5%, while throughout Indonesia the percentage is 9.7% (Maulizar et al. 2023, Ministry of Health, 2021).

In Aceh Province, 20% of pregnant women aged between 15 and 49 years are at risk of experiencing CED, but the risk of CED is more common in women of childbearing age. The frequency of CED risk for WUS is 21% throughout the country. Based on the 2019 Aceh Provincial Health Profile, 11.27% of pregnant women have an arm circumference lower than 23.5 cm, which is a sign of long-term energy deficiency. Based on data from the West Aceh Health Service Profile, there were 151 pregnant women who experienced chronic energy deficiency in 2021 (Lila <23.5), while in 2022 there were 77 pregnant women who experienced similar conditions (Lila ≤ 23.5). (West Aceh Health Office, 2022). Meanwhile, at the UPTD Kuta Padang Layung Health Center, the number of CED mothers was 23 people (27%) out of 85 people.

The typical Indonesian diet is high in non-heme iron (plant) and low in heme iron (animal). One of the main factors causing KEK problems is this eating behavior. Foods high in fiber and phytic acid can cause decreased iron absorption. Women usually pay more attention and attention to the food of the head of the family and their children. To meet the needs of energy, carbohydrates, protein, fat, vitamins, and minerals, a healthy diet for pregnant women must be consumed three times a day. (Toruntju, Akbar, Pitriani & Nurmiaty, 2019).

The frequency of chronic energy deficit (CED) in pregnant women is related to the quantity of macronutrients (energy, protein, fat, and carbohydrates) consumed, according to Hermadani's research (2020). In addition, Dicatara's research (2018) showed a strong correlation between CED in pregnant women and their protein and calorie consumption. According to Kasrida Dahlan's research (2019), pregnant women consume an average of 1,322 calories, which shows that this condition (Aulia et al. 2024, Ellyani Abadi et al. 2020) .

Rada Meldian's research shows a correlation between the nutritional condition of pregnant women and their eating patterns. Because cultural beliefs about food restrictions during pregnancy can affect changes in consumption patterns which can ultimately affect changes in the nutritional status of pregnant women, researchers are interested in understanding the relationship between consumption patterns and the nutritional status of pregnant women. Thirty-six pregnant women or thirty.5% experienced chronic energy deficiency (CED).

The purpose of this study was to determine the relationship between eating habits and the nutritional status of pregnant women at the Kuta Padang Layung Health Center.

## Method

This study uses observational, which is quantitative and describes the relationship using cross-sectional methodology. The sampling method used in this study is non-probability because the population is all pregnant women who visit pregnancy check-ups in the working area of the UPTD Kuta Padang Layung Health Center, Bubon District, West Aceh, totaling 85 people. The tool used for measuring Upper Arm Circumference is the LILA Tape and for dietary data using a 3x24-hour food recall form which is taken by interview. The test used in this study is the Chi-Square test for bivariate data.

## Results

**Table 1.** Frequency Distribution of Age Characteristics of Pregnant Women at the UPTD Kuta Padang Layung Health Center in 2023

Mother's Age (years)	n	%
20-30	66	77.6
31-40	19	22.4
Total	85	100

Table 1 above shows that 66 people (77.6%) were pregnant between the ages of 20 and 30 years, while at the age of 31-40 there were 19 people (22.4%).

**Table 2.** Frequency Distribution of Nutritional Status of Pregnant Women at the UPTD Kuta Padang Layung Health Center in 2023

Nutritional Status of Pregnant Women	Amount	
	n	%
Good	62	72.9
Not enough	23	27.1
Total	85	100

Table 2 shows that each group is in very good and poor category as many as 62 people (72.9%) and 23 people (27.1%) according to the nutritional status of pregnant women.

**Table 3.** Frequency Distribution of Consumption Patterns of Pregnant Women at the Kuta Padang Layung Health Center UPTD in 2023

Energy	Amount	
	n	%
Good	56	65.9
Not enough	29	34.1
Total	85	100
Protein	Amount	
	n	%
Good	65	76.5
Not enough	20	23.5
Total	85	100
Carbohydrate	Amount	
	n	%
Good	57	67.1
Not enough	28	32.9
Total	85	100
Fat	Amount	
	n	%
Good	77	90.6
Not enough	8	9.4
Total	85	100

Frequency	Amount	
	n	%
Good	61	71.8
Not enough	24	28.2
Total	85	100

Based on table 3, it is known that the amount of energy intake consumed by pregnant women based on the good category is 56 people (65.9%), and based on the lacking category is 29 people (34.1%). Meanwhile, the protein intake consumed by pregnant women based on the good category is 65 people

(76.5%), and based on the lacking category is 20 people (23.5%). Meanwhile, the carbohydrate intake consumed by pregnant women based on the good category is 57 people (67.1%), and based on the lacking category is 28 people (32.9%). Meanwhile, the fat intake consumed by pregnant women based on the good category is 77 people (90.6%), and based on the lacking category is 8 people (9.4%), and based on the frequency of eating or consumption patterns of pregnant women based on the good category is 61 people (71.8%), and based on the lacking category is 24 people (28.2%).

**Table 4.** Relationship between Consumption Patterns and Nutritional Status of Pregnant Women at the UPTD Kuta Padang Layung Health Center in 2023

Energy Intake	Nutritional status				Total	OR	p-value
	Good		Not enough				
	n	%	n	%	n	%	
Good	54	63.6	2	2.3	56	65.9	0.014
Not enough	8	9.4	21	24.7	29	34.1	
Total	62	73.0	23	27.0	85	100	
Protein Intake	Nutritional status				Total	OR	p-value
	Good		Not enough				
	n	%	n	%	n	%	
Good	60	70.6	5	5.9	65	76.5	0.009
Not enough	2	2.4	18	21.1	20	23.5	
Total	62	73.0	23	29.0	85	100	
Carbohydrate Intake	Nutritional status				Total	OR	p-value
	Good		Not enough				
	n	%	n	%	n	%	
Good	54	63.5	3	3.6	57	67.1	0.022
Not enough	8	9.4	20	23.5	28	32.9	
Total	59	72.9	26	27.1	85	100	
Fat Intake	Nutritional status				Total	OR	p-value
	Good		Not enough				
	n	%	n	%	n	%	
Good	61	71.8	16	18.8	77	90.6	0.037
Not enough	1	1.1	7	8.3	8	9.4	
Total	59	72.9	26	27.1	85	100	
Frequency	Nutritional status				Total	OR	p-value
	Good		Not enough				
	n	%	n	%	n	%	
Good	49	57.7	12	14.1	61	71.8	206.5
Not enough	10	11.8	14	16.4	24	28.2	
Total	59	69.6	26	30.5	85	100	

Based on table 4, it is known that based on the OR value, pregnant women who consume less energy intake are at risk of experiencing poor nutritional status 0.014 greater than pregnant women who consume good energy intake, while based on the OR value, pregnant women who consume less protein intake are at risk of experiencing poor nutritional status 0.009 greater than pregnant women who consume good energy intake. Based on the OR value, pregnant women who consume small amounts of carbohydrates have a 0.022 greater chance of experiencing poor nutritional status than pregnant women who consume a lot of energy compared to pregnant women who consume a lot of energy, while based on the OR value, pregnant women who consume less fat intake are at risk of experiencing poor nutritional status 0.037 greater than women

who consume a healthy amount of energy during pregnancy. The consumption habits of pregnant women and nutritional status at the UPTD Kuta Padang Layung Health Center are related to the p-value of 0.000 ( $p < 0.05$ ). Pregnant women who have a low meal frequency schedule have a 206.5 greater risk of experiencing poor nutritional status than pregnant women who have a good meal frequency schedule, according to the OR value.

The results of the study revealed that the frequency of eating and nutritional intake of pregnant women had an OR value indicating the potential for low nutritional status. Pregnancy and nutritional status have a relationship, according to data from the UPTD Kuta Padang Layung Health Center in 2023 regarding the right energy intake and nutritional status of pregnant women ( $p = 0.000$ ,  $p < 0.05$ ).

## Discussion

In this study, it was found that the amount of energy intake consumption in the good category was 56 people (65.9%) and the amount of energy intake consumption in the poor category was 29 people (34.1%), Having a healthy diet but poor nutritional status was 2 people (2.3%) and less than satisfactory consumption habits accompanied by low nutritional status were 21 people (24.7%), based on the amount of protein intake in the good category was 65 people (76.5%) and the amount of protein intake in the poor category was 20 people (23.5%), Based on total carbohydrate intake, the number of individuals included in the good category was 57 people (67.1%), and the number of individuals included in the poor carbohydrate intake was 28 people (32.9%). In addition, there were three people in the good category who had poor nutritional status (3.6%) and twenty people in the low category who had poor nutritional status (23.5%), based on the amount of fat consumed by 77 people (90.6%) in the good category and the amount consumed by 8 people (9.4%) in the bad category, with a good consumption pattern of 16 people (18.8%) but poor nutritional status and 7 people (8.3%) had a poor consumption pattern. Researchers found a strong relationship between the eating behavior of pregnant women and their nutritional conditions in 2023 at the UPTD Kuta Padang Layung Health Center, with a p-value of 0.000 ( $p < 0.05$ ), based on the diet of pregnant women. The survey results showed that the bad group was 24 people (28.2%) and 61 people (71.8%). In addition, 12 people (14.1%) had good frequency but poor nutritional status, and 14 people (16.4%) had low frequency but poor nutritional status.

The results of this study are in line with the research of Candraningtyas Hermadani (2020) which found a relationship ( $p = 0.006$ ) between carbohydrate intake of pregnant women and the incidence of KEK in the Gorang Gareng Taji Health Center Work Area. Statistics show that the nutritional health of pregnant women and carbohydrate intake are related to a value ( $p = 0.00$ )  $> 0.05$  (in Selprianti and , Esa Risqianti Yana, Andi Alim 2023)

Research conducted by Alfiana et al. in 2022 provides evidence of a relationship between food consumption patterns and the incidence of KEK. KEK and food consumption habits of pregnant women have a relationship, according to a statistical study conducted at the UPTD Lamepayung Health Center, Kuningan Regency in 2022, with a p-value of 0.000 and  $\alpha = 0.05$ . (Rizki, Rahmayanti, and Kuningan 2023).

Dietary patterns and prevalence of KEK in pregnant women are significantly correlated ( $p < 0.000$ ), according to research by Amri & Faisal (2017). Specifically, KEK occurs more often in pregnant women with irregular eating patterns than in pregnant women with irregular eating patterns. Eat regularly (Amri & Faisal in Mijayanti et al., 2020)

## Conclusion

The nutritional status of pregnant women in the Working Area of UPTD Kuta Padang Layung Health

Center is mostly 69.4% with good nutritional status, while the category of poor nutritional status is 30.6%. The consumption pattern of pregnant women in the Working Area of UPTD Kuta Padang Layung Health Center, based on the amount of energy intake consumption, the most is categorized as good at 65.9% while the category is lacking is 34.1%, based on the amount of protein intake consumption, the most is 76.5%, while the category is lacking is 23.5%, based on the amount of carbohydrate intake consumption, the most is 67.1% while the category is lacking is 32.9%, based on the amount of fat intake consumption, the most is 90.6% while the category is lacking is 9.4%, and based on the frequency of consumption, the most is categorized as good at 71.8% while the category is lacking is 28.2%. In UPTD Kuta Padang Layung Health Center, there is a relationship ( $p < 0.05$ ) between the nutritional status of pregnant women and their consumption habits.

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