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Determinants of Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women at the Central City Health Center

Citra Nefadillah Pratiwi Djafar[1], Laksmyn Kadir[2], Suardi[3]
[1,2,3]Jurusan Kesehatan Masyarakat, Fakultas Olahraga dan Kesehatan Universitas Negeri Gorontalo

*Email: citranevaa25@gmail.com

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ABSTRACT

Chronic Energy Deficiency (KEK) in pregnant women is still a public health problem that can increase the risk of anemia and low birth weight babies (BBLR). The incidence of KEK is influenced by various factors such as healthy nutritional behavior, number of family members, Antenatal Care (ANC) visits, husband support, compliance with Fe consumption and maternal age. This study aims to determine the determinants of the incidence of Chronic Energy Deficiency (SEZ) in pregnant women at the Central City Health Center.

This study uses an observational analytical method with a cross-sectional design. The research was carried out from January 29 to February 19, 2026 with a sample of 43 respondents. Sampling technique uses accidental sampling method. The research instrument uses a questionnaire that has been tested for Validity and Reliability. Data analysis was carried out univariate and bivariate using the Chi-square test with the value of $\rho < \alpha = 0{,}05$.

The results of the study showed that as many as 39.5% of respondents experienced SEZ incidents and 60.5% did not experience SEZs. There was no association between the number of family members (=0.850), Antenatal Care (ANC) visits (=0.281), and maternal age (=0.151) with the incidence of SEZs. However, there was a relationship between healthy nutritional behavior (=0.000), husband support (=0.000), and compliance with Fe consumption (=0.001) with the incidence of KEK in pregnant women.ρρρρρρ

The conclusion of the study showed that healthy nutritional behavior, husband support, and compliance with Fe consumption were related to the incidence of KEK in pregnant women, while the number of family members, ANC visits, and maternal age were not related to the incidence of KEK in pregnant women at the Central city health center. It is recommended that health workers improve nutrition education, monitor Fe consumption, and involve families, especially husbands, in efforts to prevent KEK in pregnant women.

INTRODUCTION

Pregnancy is an important period that requires the fulfillment of optimal nutrition to maintain the mother's health and support the growth and development of the fetus. Malnutrition during pregnancy can have an impact on both mother and fetus, such as increased risk of miscarriage, congenital abnormalities, low birth weight (BBLR), and child growth disorders. Nutrition is one of the important factors in determining the quality of human resources because the nutritional status of the mother greatly affects the health of the baby born. In addition to physical conditions, the emotional state and health of the mother during pregnancy also affect the development of the fetus and the safety of the mother during childbirth. One of the nutritional problems that often occur in pregnant women is Chronic Energy Deficiency (SEZ) (Handayani, 2021) (Putri Utami, 2022)

Chronic Energy Deficiency (KEK) is a condition of lack of energy intake and macronutrients for a long time, causing the nutritional status of pregnant women to be poor. This condition can increase the risk of anemia, bleeding, infections, and the mother's weight that does not increase normally. The impact of SEZs on the fetus includes abortion, neonatal death, asphyxia, congenital defects, and BBLR which are at risk of causing impaired growth and development of the child. The World Health Organization (WHO) reports that the prevalence of anemia

and SEZs in pregnant women in the world is still quite high, especially in developing countries. The WHO also notes that about 40% of maternal deaths are related to anemia and SEZ. (Fitriah, 2023) (Ningrum and Puspitasari, 2021)

In Indonesia, the problem of KEK in pregnant women is still a challenge in efforts to improve maternal and child health. Based on Riskesdas in 2023, the prevalence of pregnant women at risk of KEK reached 17.3%, indicating that almost one in six pregnant women experienced chronic energy intake deficiency. The high number of SEZs is influenced by various factors, such as low nutritional knowledge, economic limitations, and unbalanced food consumption behavior. Data from the Gorontalo City Health Office in 2025 shows that the Central City Health Center has the highest number of SEZ cases in Gorontalo City, which is 39 pregnant women.

The incidence of KEK in pregnant women is influenced by various factors, one of which is healthy nutritional behavior. Pregnant women who do not implement a balanced nutritious diet tend to have insufficient energy and protein intake, increasing the risk of KEKs. In addition, the number of family members can also affect the nutritional adequacy of the mother because it is related to economic conditions and the distribution of food in the household. Another influencing factor is Antenatal Care (ANC) visits. Mothers who routinely perform ANC have a greater chance of obtaining nutrition counseling, health monitoring, and supplementation so that the risk of KEK can be minimized. (Putri Utami, 2022) (Fakhrurrozaq, 2025)

Husband's support also plays an important role in maintaining the health of pregnant women. Emotional and financial support from husbands can encourage mothers to meet their nutritional needs, live a healthy lifestyle, and comply with the recommendations of health professionals. In addition, compliance with Fe tablet consumption is an important factor in preventing anemia that is closely related to SEZs. Non-compliance with taking Fe tablets can worsen the mother's health condition and increase the risk of pregnancy complications. Therefore, greater attention is needed to the factors that affect KEK in pregnant women so that prevention efforts and nutritional interventions can be carried out appropriately to improve the health status of mothers and children. (Ida Lestari tampubolon, 2024)

Research Objectives

This study aims to analyze factors related to the incidence of chronic energy deficiency (SEZ) in pregnant women at the Central City Health Center

RESEARCH METHODS

This study uses a quantitative method with an analytical observational design through a cross-sectional approach. The research was carried out at the Central City Health Center on January 29–February 19, 2026. The population in this study is all pregnant women who are in the working area of the Central City Health Center. The research sample amounted to 43 respondents who were selected using accidental sampling techniques.

The independent variables in this study included healthy nutritional behavior, number of family members, Antenatal Care (ANC) visits, husband support, compliance with Fe tablet consumption, and age of pregnant women, while the dependent variable was the incidence of Chronic Energy Deficiency (KEK). Data was collected using questionnaires that had been tested for validity and reliability, then analyzed univariate and bivariate. Bivariate analysis was carried out using the Chi-Square test with a significance level of $\alpha = 0.05$ to determine the relationship between the study variables.

RESULTS

Table 1 Characteristics of Respondents

Healthy Nutritional Behavior	**n**	**(%)**
Good	28	65,1
Less	15	34,9
Total	43	100
Number of Family Members	**n**	**(%)**
(Low Risk) ≤ 4 Family Members	22	51,2
(High Risk) > 4 Family Members	21	48,8
Total	43	100
ANC Visit	**n**	**(%)**
(Good) According to the Ministry of Health	34	79,1
(Less) Not Suitable for the Ministry of Health	9	20,9
Total	43	100
Husband's Support	**n**	**(%)**
Good	28	65,1
Less	15	34,9
Total	43	100
Fe Consumption Compliance	**n**	**(%)**

Good	26	60,5
Less	17	39,5
Total	43	100
Mother's Age	**n**	**(%)**
<20 and >35 years old	2	4,7
20-35 years old	41	95,3
Total	43	100
Status KEK	**n**	**(%)**
KEK	17	39,5
No SEZs	26	60,5
Total	43	100

Based on Table 1, most of the respondents had healthy nutritional behaviors in the good category (65.1%), compared to the poor category (34.9%). In terms of the number of family members, the majority of respondents were in the low-risk category with the number of family members ≤ 4 people (51.2%), while the high-risk category with the number of family members > 4 people (48.8%). At the ANC's visit, most of the respondents were in the good category or in accordance with the recommendations of the Ministry of Health (79.1%), while the poor category was (20.9%).

Based on their husband's support, most respondents received good husband's support (65.1%), compared to less husband's support (34.9%). In compliance with Fe tablet consumption, the majority of respondents were in the good category (60.5%), while the poor category was (39.5%). Meanwhile, based on the age of the mother, most of the respondents were in the age range of 20-35 years (95.3%), while the age of <20 years and >35 years was only (4.7%). In general, the characteristics of the respondents showed dominance in good healthy nutritional behavior, ANC visits as recommended, good husband support, and good compliance with the consumption of Fe tablets.

Based on SEZ status, most respondents did not experience SEZ (60.5%), while respondents who experienced SEZ were (39.5%). In general, the characteristics of the respondents showed dominance in good healthy nutritional behavior, ANC visits as recommended, good husband support, and adherence to good Fe tablet consumption, with most respondents not experiencing KEK.

Table 2 Relationship between the Level of Healthy Nutrition Behavior and the Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women in the Working Area of the Central City Health Center

ealthy Nutritional Behavior	**Status KEK**						***P Value***
	KEK		**No SEZs**		**Total**		
	n	**%**	**n**	**%**	**n**	**%**	
Good	4	14,3	24	85,7	28	100	0,000
Less	13	86,7	2	13,3	15	100	
Total	17	39,5	26	60,5	43	100	

Based on Table 2, the proportion of Chronic Energy Deficiency (SEZ) incidence is higher in the category of poor healthy nutritional behavior (86.7%) than in good healthy nutritional behavior (14.3%). The results of the statistical test showed a p-value of 0.000 (p < 0.05), so there was a relationship between nutritional behavior and the incidence of SEZs.

Table 3 Relationship between the Number of Family Members and the Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women in the Work Area of the Central City Health Center

nber of Family Members	**Status KEK**						***P value***
	KEK		**No SEZs**		**Total**		
	n	**%**	**n**	**%**	**n**	**%**	
≤ 4 family members	9	40.9	13	59.1	22	100	0,850

> 4 family members	8	38.1	13	61.9	21	100	
Total	17	39,5	26	60,5	43	100	

Based on Table 3, the proportion of Chronic Energy Deficiency (SEZ) incidence was higher in the group of 4 family members ≤ 4 people (40.9%) and slightly lower in the group of > 4 family members (38.1%). The results of the statistical test showed a p-value of 0.850 (p > 0.05), so there was no relationship between the number of family members and the incidence of KEKs.

Table 4 Relationship between ANC Visits and the Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women in the Work Area of the Central City Health Center

ANC Visit	**Status KEK**						
	KEK		**No SEZs**		**Total**		***p value***
	n	**%**	**n**	**%**	**n**	**%**	
Good	15	13.4	19	20.6	34	100	
Less	2	3.6	7	5.4	9	100	0,281
Total	17	39,5	26	60,5	43	100	

Based on Table 4, the proportion of Chronic Energy Deficiency (SEZ) events was higher in the group of good ANC visits (13.4%) compared to the poor ANC visits (3.6%). The results of the statistical test showed a p-value of 0.281 (p > 0.05), so there was no relationship between ANC visits and the incidence of SEZs.

Table 5 The Relationship between Husband Support and the Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women in the Work Area of the Central City Health Center

Husband's Support	**Status KEK**						
	KEK		**No SEZs**		**Total**		***value***
	n	**%**	**n**	**%**	**n**	**%**	
Good	4	14,3	24	85,7	28	100	
Less	13	86,7	2	13,3	15	100	),000
Total	17	39,5	26	60,5	43	100	

Based on Table 5, the proportion of Chronic Energy Deficiency (SEZ) events is higher in the support group of less husbands (85.7%) than in good husbands (14.3%). The results of the statistical test showed a p-value of 0.000 (p < 0.05), so there was a relationship between husband support and the incidence of SEZs.

Table 6 Relationship between Fe Consumption Compliance and the Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women in the Working Area of the Central City Health Center

Fe Consumption Compliance	**Status KEK**						
	KEK		**No SEZs**		**Total**		***p value***
	n	**%**	**n**	**%**	**n**	**%**	
Obedient	5	19,2	21	80,8	26	100	0,001

Less Compliant	12	70,6	5	29,4	17	100
Total	17	39,5	26	60,5	43	100

Based on Table 6, the proportion of Chronic Energy Deficiency (SEZ) incidents is higher in the Fe consumption compliance group (70.6%) than in the Fe consumption compliance group (19.2%). The results of the statistical test showed a p-value of 0.001 ($p < 0.05$), so there was a relationship between Fe consumption compliance and the incidence of SEZs.

Table 7 Relationship between the Age of Pregnant Women and the Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women in the Work Area of the Central City Health Center

	Status KEK						
other's Age (years)	**KEK**		**No SEZs**		**Total**		***ᵖ value***
	n	**%**	**n**	**%**	**n**	**%**	
< 20	2	100	0	0	2	100	
20 - 35	15	36.6	26	63.4	41	100	0,151
Total	17	39,5	26	60,5	43	100	

Based on Table 7, the proportion of Chronic Energy Deficiency (SEZ) incidence is higher in the maternal age group < 20 years (100%) than in the age group of 20–35 years (36.6%). The results of the statistical test showed a p-value of 0.151 ($p > 0.05$), so there was no relationship between the mother's age and the incidence of KEK.

DISCUSSION

The Relationship between Healthy Nutritional Behavior and the Incidence of Chronic Energy Deficiency (KEK) in Pregnant Women

Based on the results of bivariate analysis using the Chi-Square test, a p-value of < 0.05 ($p = 0.000$) was obtained, which shows that there is a significant relationship between healthy nutritional behavior and the incidence of Chronic Energy Deficiency (SEZ) in pregnant women in the working area of the Central City Health Center in 2026. Respondents with healthy nutritional behaviors experienced more or less SEZ compared to respondents who had good healthy nutritional behavior.

The results of this study are in line with research that states that there is a significant relationship between the nutritional behavior of pregnant women and the incidence of SEZs. This relationship can be explained through the concept of energy balance, which is a condition when energy intake is not balanced with the body's energy needs. During pregnancy, there is an increase in the need for energy and nutrients such as protein, iron, vitamins, and minerals to support fetal growth and maternal physiological changes. If these needs are not met for a long period of time, there will be an energy deficit that will lead to SEZs (Ministry of Health, 2025). In addition, a low understanding of balanced nutrition can also cause pregnant women to be unable to manage their diet in accordance with pregnancy needs. Trisnawati and Mokodompit, (2025)

The results of the field study showed that most of the respondents with poor nutritional behavior had irregular eating habits, did not meet the frequency of eating at least three times a day, and did not consume enough animal protein sources, green vegetables, and fruits. This condition is exacerbated by the low variety of foods consumed so that energy and nutrient intake is inadequate. Daily activities, economic limitations, and lack of knowledge about balanced nutrition are factors that affect the diet of pregnant women. As a result, nutritional needs during pregnancy cannot be met optimally, increasing the risk of SEZs.

In respondents with good nutritional behavior but still experience SEZ, this can be caused by other factors that also affect the nutritional status of pregnant women such as pre-pregnancy health history, comorbidities, and increased higher energy needs in certain trimesters. In addition, the absorption factor of nutrients in the body can also be different from individual to individual so that even if the diet is good, the nutritional status is not necessarily optimal. On the other hand, respondents with poor nutritional behavior but do not experience SEZs may be influenced by the body's energy reserves that are still sufficient, intake support from other factors other than the main food, and metabolic conditions that are still stable so that they do not show a significant energy deficit (Soelistijo, 2021).

These findings are in line with research (Ilham & Artha, 2025) which shows that the incidence of SEZ is not only influenced by nutritional behavior, but also by multifactorial factors such as economic conditions, access to health services, and maternal health status. Research (Ministry of Health, 2020) also states that SEZs are the result of an accumulation of imbalances in energy intake and needs in the long term which are influenced by various risk factors. Therefore, healthy nutritional behavior needs to be the main concern in efforts to prevent SEZs. Nutrition education, pregnancy counseling, and routine monitoring of nutritional status need to be improved as a promotive and preventive effort at the Central City Health Center to reduce the incidence of KEK in pregnant women.

The Relationship between the Number of Family Members and the Incidence of Chronic Energy Deficiency (KEK) in Pregnant Women

Based on the results of bivariate analysis using the Chi-Square test, a p-value of > 0.05 (p = 0.850) was obtained, which shows that there is no significant relationship between the number of family members and the incidence of Chronic Energy Deficiency (SEZ) in pregnant women in the Puskesmas Pusat Tengah Working Area in 2026. Thus, H0 was accepted and Ha was rejected, so that the number of family members was not statistically proven to be related to the incidence of SEZs.

The results of field research showed that the proportion of KEK incidence in pregnant women with a family member of ≤ 4 people (40.9%) was almost the same as that of pregnant women with a family member of > 4 people (38.1%). This condition shows that the number of family members does not make a significant difference to the incidence of KEK in pregnant women.

The number of family members can theoretically affect the distribution of food resources in a household. However, in the field conditions, the fulfillment of the nutritional needs of pregnant women is not only influenced by the number of family members, but also by other factors such as economic conditions, nutritional knowledge, and consumption patterns in the family.

In some cases, families with a large number of members are still able to meet the nutritional needs of pregnant women if they have good economic conditions. On the other hand, in families with fewer members, the incidence of KEK is still found, which shows that other factors such as eating behavior and economic ability play a greater role in determining nutritional status.

Thus, the number of family members cannot be used as the main factor in determining the incidence of SEZs, because the influence is more indirect and influenced by the overall socio-economic condition of the family.

These findings are in line with the research of Sari and Sartika (2022) which states that family size is not significantly related to the incidence of SEZs, as well as research by Fentahun et al. (2021) which shows that household size does not have a meaningful relationship with nutritional status after being controlled by economic factors and food security.

The Relationship between ANC Visits and the Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women

Based on the results of bivariate analysis using the Fisher's Exact Test, a p-value of > 0.05 (p = 0.281) was obtained, which shows that there is no significant relationship between Antenatal Care (ANC) visits and the incidence of Chronic Energy Deficiency (KEK) in pregnant women in the Puskesmas Pusat Tengah Working Area in 2026. Thus, H0 was accepted and Ha was rejected, so that the ANC's visit was not statistically proven to be related to the SEZ incident.

The results of the field study showed that in pregnant women with good ANC visits, there were still 15 people (13.4%) who experienced KEK and 19 people (20.6%) who did not experience SEZ. Meanwhile, in pregnant women with less ANC visits, there were 2 people (3.6%) who experienced KEK and 7 people (5.4%) who did not experience SEZ. This condition shows that the incidence of KEK is still found in both groups, both pregnant women with good or poor ANC visits.

The distribution illustrates that a good ANC visit has not been able to completely prevent the occurrence of SEZs in pregnant women. This shows that the incidence of KEK is not only influenced by the frequency of ANC visits, but also by other factors that are more dominant such as food consumption patterns, economic conditions, and maternal compliance in carrying out health recommendations.

Antenatal Care (ANC) visits are health services that aim to monitor the condition of the mother and fetus during pregnancy, including early detection of nutritional problems such as SEZs. In its implementation, ANC not only focuses on physical examinations, but also includes monitoring nutritional status through LILA measurement, giving Fe tablets, and balanced nutrition education for pregnant women.

However, the results of this study show that even though pregnant women have made good ANC visits, there are still cases of SEZs. This can happen because not all pregnant women optimally apply the information and education provided during the ANC examination, especially related to diet and the fulfillment of nutritional needs during pregnancy.

In addition, other factors such as nutritional behavior, family support, and socioeconomic conditions are thought to have a greater influence on the incidence of SEZs compared to the frequency of ANC visits themselves.

Therefore, a good ANC visit does not always guarantee that pregnant women will avoid KEK if it is not followed by appropriate changes in health behavior.

In theory, the utilization of health services such as ANC can be explained through the Andersen model which states that the use of health services is not only determined by access and frequency of visits, but also by individual behavior in utilizing the health information obtained. In addition, WHO emphasizes that effective ANC services must be comprehensive, including health checkups, nutrition monitoring, supplementation, and education that can be implemented by pregnant women in their daily lives. (Aryaneta, 2024)

The results of this study are in line with the research conducted by Dekis Mahpiroh (2024) which showed that there was no significant relationship between the frequency of ANC and the incidence of KEK in pregnant women ($p = 0.102$). These findings indicate that ANC visits alone are not enough to determine the incidence of SEZs without being supported by behavioral factors and other supporting conditions.

The Relationship between Husband Support and the Incidence of Chronic Energy Deficiency (KEK) in Pregnant Women

Based on the results of bivariate analysis using the Chi-Square test, a p-value of < 0.05 ($p = 0.000$) was obtained, so that there was a significant relationship between husband support and the incidence of Chronic Energy Deficiency (KEK) in pregnant women. Thus, H0 is rejected and Ha is accepted.

The results of the field study showed that in pregnant women with less husband support, most of them experienced SEZs, namely 13 people (86.7%), while those who did not experience SEZs were only 2 people (13.3%). Meanwhile, in pregnant women with good husband support, most of them did not experience SEZs, namely as many as 24 people (85.7%), and only 4 people (14.3%) experienced SEZs. This condition shows a clear difference between the two groups, where pregnant women with good husband support are less likely to experience KEK.

Husband's support in this study includes emotional, informational, and instrumental support, such as attention to the condition of pregnant women, helping to fulfill nutritious food, reminding the consumption of Fe tablets, and accompanying pregnancy checkups. Based on the results of the questionnaire, pregnant women who lack support from their husbands tend to pay less attention to their diet, are less obedient in consuming supplements, and are less motivated to maintain health during pregnancy.

Lack of husband support can reduce the motivation of pregnant women in meeting their daily nutritional needs, so that it has the potential to cause inadequate nutritional intake and increase the risk of SEZs. On the contrary, good husband support can increase maternal compliance with health recommendations, especially in fulfilling nutrition and regular pregnancy checkups. This shows that husband support has an important role in shaping pregnant women's health behaviors that have an impact on nutritional status.

In theory, husband support is part of social support that plays a role in influencing individual health behavior. Social support includes emotional, informational, and instrumental support that can assist individuals in making health-related decisions. Support from the closest people, especially the husband, can increase the motivation of pregnant women in maintaining their health and meeting nutritional needs during pregnancy. (Lisdawati, 2024)

The results of this study are in line with research showing that there is a significant relationship between husband support and the incidence of KEK in pregnant women ($p = 0.000$). Pregnant women who do not receive optimal support from their husbands have a higher risk of experiencing KEK than pregnant women who receive good support. In addition, research by Fauzal Hayat (2021) also showed that husband support was related to the risk of KEK in pregnant women with a value of $p = 0.000$. (Ulfah & Latip Abdul, 2024)

Thus, the results of this study strengthen that husband support is an important factor in the prevention of KEK in pregnant women, so that the involvement of husbands in fulfilling nutrition and pregnancy care needs to be increased through family-based health education.

The Relationship between Fe Consumption Compliance and the Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women

Based on the results of bivariate analysis using the Chi-Square test, a p-value of < 0.05 ($p = 0.001$) was obtained, which shows that there is a significant relationship between compliance with Fe tablet consumption and the incidence of Chronic Energy Deficiency (SEZ) in the working area of the Central City Health Center in 2026. Thus, H0 was rejected and Ha was accepted, so that compliance with Fe tablet consumption was statistically proven to be related to the incidence of KEK in pregnant women.

The results of research in the field showed that in pregnant women who were less compliant in consuming Fe tablets, most of them experienced SEZs, namely 12 people (70.6%), while those who did not experience SEZs were only 5 people (29.4%). Meanwhile, in compliant pregnant women, most of them did not experience SEZs, namely 21 people (80.8%), and only 5 people (19.2%) experienced SEZs. This condition shows a clear difference between the two groups, where non-compliant pregnant women tend to experience KEK more.

These differences in proportions show that compliance with Fe tablet consumption is related to the nutritional status of pregnant women. Pregnant women who are not compliant in taking Fe tablets have a higher risk of developing KEK compared to compliant mothers.

Based on the results of the questionnaire, pregnant women's non-compliance in taking Fe tablets was caused by several factors, such as forgetting to take the tablets, lack of understanding of the importance of iron during pregnancy, and side effects such as nausea or discomfort after taking Fe tablets. This condition causes iron intake to not be optimally met during pregnancy.

Iron deficiency in the long term can lead to health problems such as anemia, which can worsen the physical condition of pregnant women and have an impact on decreased nutritional status. This shows that adherence to Fe tablet consumption is an important part of maintaining a balance of nutritional needs during pregnancy.

The adherence to the consumption of Fe tablets is influenced by the mother's knowledge, attitude, and awareness of the importance of iron during pregnancy. Pregnant women who have good knowledge tend to be more obedient in consuming Fe tablets, so that iron needs can be met more optimally.

In theory, adherence in health behavior can be explained as the level of individual obedience in following the recommendations of health professionals to achieve optimal health outcomes. In addition, according to Lawrence Green's theory, health behaviors are influenced by predisposing factors such as knowledge, attitudes, and beliefs. Iron deficiency can also cause mothers to be easily tired, weak, and reduce appetite, which can ultimately reduce daily energy intake and increase the risk of SEZ. (Scott, 2022)

The results of this study are in line with research showing that there is a relationship between compliance with Fe tablet consumption and the incidence of KEK in pregnant women ($p = 0.000$), where pregnant women who do not comply experience more KEK than compliant mothers. In addition, research by Hasnidar et al. (2025) also showed that there was a significant relationship between compliance with Fe tablet consumption and the nutritional status of pregnant women ($p < 0.05$), where non-compliance increased the risk of nutritional status disorders. (Andi Fatimah Jamir, 2021)

Thus, the results of this study reinforce that compliance with the consumption of Fe tablets is an important factor in the prevention of KEK in pregnant women. Therefore, efforts are needed to increase education about the benefits of Fe tablets, regular consumption monitoring, counseling to reduce side effects, and family involvement in supporting pregnant women's compliance in consuming Fe tablets.

The Relationship between Pregnant Women's Age and the Incidence of Chronic Energy Deficiency (SEZ) in Pregnant Women

Based on the results of bivariate analysis using the Fisher's Exact Test, a p-value of > 0.05 ($p = 0.151$) was obtained, which shows that there is no significant relationship between maternal age and the incidence of Chronic Energy Deficiency (SEZ) in pregnant women in the working area of the Central City Health Center in 2026. Thus, H0 was accepted and Ha was rejected, so that the mother's age was not statistically proven to be related to the incidence of SEZs.

The results of the field study showed that in the group of pregnant women with the age of < 20 years, all respondents experienced SEZs, namely 2 people (100%), and there were no respondents who did not experience SEZs. Meanwhile, in the age group of 20-35 years, there were 15 people (36.6%) who experienced SEZs and 26 people (63.4%) who did not experience SEZs. This condition shows that proportionally, the incidence of SEZ is higher at the age of < 20 years compared to the age of 20-35 years.

However, the number of respondents in the age group < 20 years was very small, so statistically no significant association was shown. This shows that the mother's age cannot be used as a factor that is directly related to the incidence of KEK in this study.

In general, the age of the mother is related to the physical and biological readiness to undergo pregnancy. Pregnant women at too young age tend not to have optimal readiness, both in terms of physical and fulfilling nutritional needs, so in theory they are at risk of experiencing nutritional problems. However, in this study, the incidence of KEK was not only found at a young age, but also at a healthy reproductive age, thus showing that there are other factors that are more influential.

The results of this study show that the incidence of KEK is more influenced by nutritional behavioral factors, compliance with Fe tablet consumption, and family support compared to maternal age factors. Thus, the age of the mother is not the main factor that determines the nutritional status of pregnant women in this study.

Although there were all respondents aged < 20 years who experienced SEZs, overall no significant relationship was found due to the limited number of samples and the dominance of other factors that had a greater influence on nutritional status. This shows that the mother's age does not stand alone, but is influenced by other factors that accompany it.

In theory, the age of the mother is included in the biological factors that can affect health conditions during pregnancy. According to the World Health Organization, the age of < 20 years is included in a high-risk group because the mother's body is still in the growth period so that there is competition for nutritional needs between the mother and the fetus. (Setyaningsih, 2025)

In addition, according to Hendrik L. Blum's determinant model of health, health status is influenced by environmental, behavioral, health services, and hereditary (biological) factors. In this case, age is a biological factor, but its effect on nutritional status can be influenced by other factors such as nutritional behavior, social support, and access to health services. (Sani, 2020)

The results of this study are in line with the research of Rahmawati and Lestari (2021) which showed that maternal age was not significantly related to the incidence of KEK ($p > 0.05$). The study stated that energy intake factors and socioeconomic conditions were more dominant in determining the nutritional status of pregnant women. In addition, research by Yuliani et al. (2023) also shows that age is not significantly related to SEZs, but consumption patterns and the quality of food intake are more influential.

The findings reinforce the results of this study that the mother's age is not a direct risk factor for the incidence of SEZs. Although in theory too young is at risk of nutritional problems, in practice the incidence of SEZs is more influenced by direct factors such as nutritional behavior, adequacy of energy intake, and socioeconomic conditions.

CONCLUSIONS AND SUGGESTIONS

Based on the results of the study on factors related to the incidence of Chronic Energy Deficiency (SEZ) in pregnant women in the working area of the Kota Tengah Health Center in 2026, it can be concluded that there is a relationship between healthy nutritional behavior, husband support, and compliance with Fe tablet consumption with the incidence of KEK, while the number of family members, frequency of ANC visits, and maternal age do not show a relationship. In this regard, it is recommended to the Central City Health Center to increase promotive and preventive efforts through balanced nutrition education, increasing the involvement of husbands in pregnancy assistance, and strengthening compliance with Fe tablet consumption in pregnant women. The community is also expected to implement a healthy lifestyle by improving their diet, regularly consuming Fe tablets as recommended, and utilizing family support to reduce the risk of SEZs. In addition, for future researchers, it is recommended to use a different research design and add other variables such as socioeconomic factors, energy intake, physical activity, and maternal health conditions to obtain a more comprehensive picture.

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