

RELATIONSHIP BETWEEN DIET PATTERNS AND THE INCIDENCE OF ANEMI IN PREGNANT WOMEN AT DATUK BANDAR COMMUNITY HEALTH CENTER

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Abstract

Introduction : Anemia is very dangerous in pregnancy because it can affect the mother and baby. The mother can experience poor body conditions because the blood does not carry enough oxygen and nutrients so that the body is inadequate in getting oxygen and nutrients . **Objective** : To analyze the Relationship between Pregnant Women's Eating Patterns in the Third Trimester and the incidence of anemia at the Datuk Bandar Health Center . **Method**: *observational* research to see if there is a relationship between diet and the incidence of anemia in pregnant women at the Datuk Bandar Health Center. **Population and Sample**: all pregnant women in the third trimester at the Datuk Bandar Health Center as many as 35 people with the total population sampling technique, the number of samples was 35 people. **Place and time**: At the Datuk Bandar Health Center, Datuk Bandar District, Tanjung Balai City, North Sumatra Province in February-April 2024. **Results** : Respondents with poor diet patterns were mostly anemic, 12 people (34%), while respondents with poor diet patterns were mostly not anemic, 20 people (57%). After the *chi square test was carried out* , the results showed that *the p value* was 0.000 , so there was a relationship between the respondents' diet patterns and the incidence of anemia in respondents at the Datuk Bandar Health Center, Datuk Bandar District, Tanjung Balai City, North Sumatra Province in 2024. **Conclusion** : There is a relationship between diet patterns and the incidence of anemia in pregnant women in the third trimester at the Datuk Bandar Health Center in 2024.

Keywords: Pregnant Women, Diet, Anemia

INTRODUCTION

Anemia in pregnant women is a condition where the hemoglobin level in red blood cells is less than 11 gr/dl in the second trimester and 10.5 gr/dl in the first and third trimesters due to plasma dilution/increased plasma volume. According to WHO, the incidence of anemia in developed countries is 14% of

pregnancies, while in developing countries it is 50%. (Pasaribu et al., 2023) . The incidence of anemia during pregnancy in Saudi Arabia is 34.1% (Alreshidi & Haridi, 2021) . In Indonesia, anemia occurs in 48.9% of pregnant women, while in North Sumatra in Deli Serdang Regency, anemia occurs in 35.4% of pregnant women (Purba, 2021) .



Anemia is very dangerous during pregnancy because it can affect the mother and baby. The mother can experience poor body condition because the blood does not carry enough oxygen and nutrients so that the body is inadequate in getting oxygen and nutrients. During childbirth, pregnant women who are anemic can also have adverse effects due to uterine muscle cells that lack oxygen and nutrients so that they are inadequate during contractions, resulting in prolonged labor and bleeding (Sitepu et al., 2021) . In babies, miscarriage can occur when the mother is anemic in the first trimester because the fetus does not get enough oxygen and nutrients to develop or can occur LBW, premature even when the baby is born, anemia still has an impact, namely stunting due to prolonged iron deficiency in the fetus (Farhan & Dhanny, 2021) .

Anemia can occur at any time of pregnancy but is more common in the third trimester. Anemia mostly occurs in the third trimester (Tri Aksari & Didik Nur Imanah, 2022) . The third trimester of pregnancy is a vulnerable period, according to Fitri

et al. in 2023 in Lampung, anemia mostly occurs in the third trimester, which is 43.5% (Fitri et al., 2023) .

Risk factors that can cause anemia in developing countries are deficiencies in micro iron, folic acid, vitamins A, B12 and anemia due to parasitic infections, namely malaria and hookworm and chronic infections such as tuberculosis, HIV, parasites, intestinal infections, contaminated drinking water, dietary patterns, education level, socio-economic and parity (Nurnaningsih et al., 2022) .

Anemia often occurs due to lack of iron intake in pregnant women either from food or from direct consumption of iron tablets, with lack of knowledge of foods containing iron, or how to consume foods containing iron as well as iron tablets. Many things cause iron absorption to be suboptimal (Febriani et al., 2021) . According to Arienda in 2022 in Mataram, anemia in pregnant women occurs in poor nutritional status (Ariendha et al., 2022) .

One of the efforts made to prevent and overcome anemia is to give iron tablets to pregnant women once a

day every day as prevention and twice a day as treatment when anemia occurs in pregnant women (O'Toole et al., 2023) .

In everyday conditions without consuming iron, pregnant women can actually meet their iron needs because iron is found in abundance in food, but the level of knowledge, education, customs, support, socio-economics and others so that the iron is not obtained from food. Even when pregnant women are advised to follow a prevention or treatment program for anemia by consuming iron tablets every day because of the above factors, iron tablets cannot be absorbed by the body optimally. There are certain things such as how to eat, when to eat and types of complementary foods for iron tablets so that the mother's body can absorb iron completely (Mariana et al., 2018) .

It is necessary to provide counseling to pregnant women so that their level of knowledge about anemia, especially good eating patterns so that iron can be obtained by the body optimally (Wijaya et al., 2022) . In Saudi Arabia, the incidence of anemia in pregnancy is

one of the causes of dietary patterns such as rarely eating meat, the habit of drinking tea and often eating food from restaurants (Alreshidi & Haridi, 2021) . In Grogol Petamburan, West Jakarta, the incidence of anemia in pregnant women is mostly in pregnant women who experience poor nutrition, namely LIA <23.5 cm as much as 57.1% (Tara & Ciptono, 2022) . Food sources that are rich in iron such as vegetables from nuts (Fitri et al., 2023) . Foods that contain a lot of iron such as vegetables 150-200 grams and fruit as much as 200-300 grams per day (Fitri et al., 2023) . There is an effect of vegetable and fruit consumption on increasing hemoglobin in pregnant women (Sari et al., 2021) . Date palm juice can also increase hemoglobin levels in the blood (Franshisca Sihombing, 2023) .

From the Datuk Bandar Health Center data, every year the number of cases of anemia... in pregnant women always increases. From the results of a survey conducted by researchers on April 8, 2024, out of 10 pregnant women who visited the

Datuk Bandar Health Center in Datuk Bandar District, North Sumatra Province, 5 of them experienced anemia. Based on this, researchers are interested in examining the Relationship between Eating Patterns of Pregnant Women in the Third Trimester at the Datuk Bandar Health Center, Datuk Bandar District, Tanjung Balai City, North Sumatra Province in 2024. .

METHOD

This type of research is This research is an observational study with a *cross control* design . to see the role factor risk indisease occurrence. In this study, is there a relationship between the diet of pregnant women

and the incidence of anemia ? Time: February to July 2024. Place: Datuk Bandar Health Center, Datuk Bandar District, Tanjung Balai City, North Sumatra Province in 2024. Population : pregnant women visiting Datuk Bandar Health Center as many as 35 people with a total sampling technique, so the number of samples is 35 people. Univariate data analysis, namely the characteristics of respondents using frequency distribution and bivariate analysis to measure the relationship between eating patterns and the incidence of anemia using test *chi-square* to find the relationship between dietary patterns and the incidence of anemia in pregnant women .

RESULT AND DISCUSSION

Table 4.1 Frequency Distribution of Characteristics of Pregnant Women at Datuk Bandar Health Center, Datuk Bandar District, Tanjung Balai City, North Sumatra Province in 2024

No	Characteristics	Frequency	%
Age Mother			
1	<20 year	3	9
2	20-35 year	27	77
3	>35 year	5	14
Total		35	100.0
Education Mother			
1	SD	1 3	
2	JUNIOR HIGH SCHOOL	5 14	
3	SENIOR HIGH SCHOOL	21 60	
4	PT	8 23	
Total		35	100

Work			
1	Housewife	13	37
2	Self-employed	16	46
3	Employee Private	1	3
4	civil servant	5	14
Total		35	100
Dietary habit			
1	Not good	13	37
2	Good	22	63
Total		35	100
Anemia			
1	Anemia	14	40
2	No Anemia	21	60
Total		35	100

Primary data :2024

From table 4.1 it can be seen that the majority of respondents aged 20-35 years as many as 27 people (77.1%) and the minority aged <20 years as many as 3 people (8.6%), in terms of education, respondents with high school education as many as 21 people (60%) and the minority with elementary school as many as 1 person (2.9%), while in terms of employment, the majority of self-employed as many as 16 people (45.7%) and the minority of private employees as many as 1 person (2.9%), the majority of respondents' eating patterns are good as many as 22 people (62.9%) and the minority is not good as many as 13 people (37.1%), the incidence of anemia, the majority of respondents are not anemic as many as 21 people (60%) and the minority is 14 people (40%).

Analysis Bivariate

Bivariate analysis is to determine whether there is a relationship between the independent variable and the dependent variable, namely whether there is a relationship between the respondent's eating patterns and the incidence of anemia in the respondents as follows:

Table 4.2 Distribution Cross Connection Pattern Eat With Incident Anemia On Mother Pregnant in Datuk Bandar Health Center, Datuk Bandar District, Tanjung Balai City, North Sumatra Province in 2024

No	Pattern Eat	Anemia				f	%	<i>p</i>
		Yes		No				
		f	%	f	%			
1	Not good	12	34	1	3	13	37	0,000
2	Good	2	6	20	57	22	63	
Total		14	40	21	60	35	100.0	

Based on table 4.2 The results show that 35 respondents were found with poor eating patterns , 13 of whom had anemia , 12 of whom (34%) while 22 respondents with good eating patterns, the majority of whom were not anemic, 20 of whom (57%). After conducting a *chi square test* to see the relationship test, the results showed that *the p value* was 0.000 with a significance level of 5% or a confidence level of 95%. This states that H_0 is accepted, namely that there is a relationship between respondents' eating patterns and the incidence of anemia in respondents at the Datuk Bandar Health Center, Datuk Bandar District, Tanjung Balai City, North Sumatra Province in 2024.

DISCUSSION

There is a relationship between the respondent's diet and the incidence of anemia in respondents at the Datuk Bandar Health Center, Datuk Bandar District, Tanjung Balai City, North Sumatra Province in 2024 with the results of the *chi square statistical test* p value of 0.000 . Anemia can occur due to malnutrition, pregnant women who do not eat with a bad pattern will not get good nutrition. Like the results of previous studies that there is a relationship between poor diet and the incidence of anemia in women starting from adolescence. Pregnant women with a diet in terms of frequency that is not routine 3 times a day will cause the body to lack energy so that erythrocytes do not contain enough nutrients such as iron to form hemoglobin in the blood so that anemia occurs (Putera et al.,

2020) . The results of this study are also in accordance with previous studies that poor diet because it is not balanced with the body's needs can also cause anemia in pregnant women (Manila, 2021) .

According to Sopiah in West Java, there is a relationship between poor dietary patterns and anemia in pregnant women. Food that is not diverse in food consumption will get minimal nutrition, causing pregnant women to become anemic. (Manila, 2021) . Hasanah in 2022 also said that iron is very useful for pregnant women in preventing anemia, apart from iron tablets, iron can be obtained from foods with a healthy pattern such as not consuming foods that can interfere with the absorption of iron in the body after eating foods containing iron (Hasanah et al., 2021) .

CONCLUSION AND SUGGESTION

Of the respondents' unhealthy eating patterns , 13 people , the majority experienced anemia , 12 people . There is a relationship between eating patterns and the incidence of anemia. anemia in pregnant women at the Datuk Bandar Health Center, Datuk Bandar District, Tanjung Balai City, North Sumatra Province in 2024. Suggestion: Health workers should provide education on good eating patterns for pregnant women to reduce the number of anemia.

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REFERENCE

- Alreshidi, M. A., & Haridi, H. K. (2021). Prevalence of anemia and associated risk factors among pregnant women in an urban community at the North of Saudi Arabia. *Journal of Preventive Medicine and Hygiene*, 62(3), E653–E663. <https://doi.org/10.15167/2421-4248/jpmh2021.62.3.1880>
- Ariendha, D., Setyawati, I., Utami, K., & Hardaniyati. (2022). Anemia in Pregnant Women Based on Age, Knowledge, and Nutritional Status. *Journal Of Midwifery* , 10 (2), 97–104. <https://doi.org/10.37676/jm.v10i2.3262>
- Farhan, K., & Dhanny, DR (2021). Anemia in Pregnant Women and Its Effects on Babies. *Muhammadiyah Journal of Midwifery* , 2 (1), 27. <https://doi.org/10.24853/myjm.2.1.27-33>
- Febriani, A., Sijid, SA, & Zulkarnain. (2021). Review: Iron deficiency anemia. *Proceedings of the National Seminar on Biology* , 7 (1), 137–142. <https://journal3.uin-alauddin.ac.id/index.php/psb/article/view/23466>
- Fitri, NL, Sari HS, SA, Nurhayati, S., Pakarti, AT, Supardi, S., & Hasanah, U. (2023). Relationship between Gestational Age and the Incidence of Anemia in Pregnant Women. *Journal of Health Discourse* , 8 (1), 57. <https://doi.org/10.52822/jwk.v8i1.519>
- Franshisca Sihombing, S. (2023). *Midwifery Care of Providing Date Palm Juice to Increase Hemoglobin Levels in Pregnant Women with Anemia at Tanjung Balai Karimun Health Center* . 14 (1), 81–92.

- Hasanah, I., Adnindya Syafira, Y., Lusida, N., FUADYAH, F., & Fauziah, M. (2021). Relationship of Iron Consumption with Anemia in Pregnant Women. *Muhammadiyah International Public Health and Medicine Proceedings* , 1 (1), 959–974. <https://doi.org/10.53947/miphm.v1i1.156>
- Manila, HD (2021). Relationship between Diet Patterns and the Incidence of Anemia in Female Adolescents of Class X at Murni Padang High School. *Jurnal Kesehatan Saintika Meditory* , 4 (1), 77. <https://doi.org/10.30633/jsm.v4i1.1033>
- Mariana, D., Wulandari, D., & Padila. (2018). Relationship between Diet Patterns and the Incidence of Anemia in Pregnant Women in the Work Area of Jalan Gedang Bengkulu Health Center. *Jks* , 1 (2), 108–122.
- Nurnaningsih, N., Ahmad, M., Sunarno, I., & Arsyad, NA (2022). Risk Factors for the Anemia in Pregnant Women: a Literature Review. *Nurse and Health: Journal of Nursing* , 11 (1), 137–150. <https://doi.org/10.36720/nhjk.v11i1.305>
- O'Toole, F., Sheane, R., Reynaud, N., McAuliffe, F. M., & Walsh, J. M. (2023). Screening and treatment of iron deficiency anemia in pregnancy: A review and appraisal of current international guidelines. *International Journal of Gynecology and Obstetrics*, November 2023, 214–227. <https://doi.org/10.1002/ijgo.15270>
- Pasaribu, R. D., Aritonang, E., Sudaryati, E., & Zuska, F. (2023). Anemia in Pregnancy: Study Phenomenology. *Portuguese Journal of Public Health*, 42(1), 6–14. <https://doi.org/10.1159/000534708>
- Purba, EM (2021). Risk Factors for Anemia in Pregnant Women in Urban Areas in the Sialang Buah Health Center Working Area in 2020. *Jakiyah: Aisyiyah General and Health Scientific Journal* , 6 (1), 43–49. <https://doi.org/10.35721/jakiyah.v6i1.48>
- Putera, KSK, Noor, MS, & Heriyani, F. (2020). The Relationship between Diet Patterns and the Incidence of Anemia at SMP Negeri 18 Banjarmasin 2019 / 2020. *Homeostasis Journal* , 3 (2), 217–222.
- Sari, YO, Darmayanti, D., & Ulfah, M. (2021). The Effect of Iron and Spinach Supplementation on Increasing Hemoglobin Levels in Pregnant Women with Anemia in the Martapura I Health Center Work Area. *Suaka Insan Nursing Journal (Jksi)* , 6 (1), 19–26. <https://doi.org/10.51143/jksi.v6i1.265>
- Sitepu, SA, Purba, TJ, Sari, NM, Sitepu, MS, & Hayati, E. (2021). The Impact of Anemia on Pregnant Women and Childbirth. *Putri Hijau Community Service Journal* , 1 (4), 47–53. <https://doi.org/10.36656/jpmph.v1i4.728>
- Tara, AAD, & Ciptono, F. (2022). Prevalence and determinants of anemia in pregnant women at the Grogol Petamburan Health

Center, West Jakarta, 2019-2021. *Tarumanagara Medical Journal* , 4 (1), 41–47. <https://doi.org/10.24912/tmj.v4i2.17720>

Tri Aksari, S., & Didik Nur Imanah, N. (2022). Gestational Age as a Factor Related to the Incidence of Anemia in Pregnant Women During the Covid 19 Pandemic. *Indonesian Midwifery Journal* , 13 (1), 94–102. <https://doi.org/10.36419/jki.v13i1.569>

Wijaya, C., Septiyaningrum, S. R., Ifada, H., & ... (2022). Pengaruh Edukasi Gizi Dengan Media Leaflet Mengenai Anemia Terhadap Peningkatan Pengetahuan Pada Ibu Hamil Di Desa Ngemplak. *Proceeding ...*, 264–270. <https://proceedings.ums.ac.id/index.php/nhcos/article/view/1190%0Ahttps://proceedings.ums.ac.id/index.php/nhcos/article/download/1190/1165>.