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FACTORS RELATED TO ANEMIA DURING PREGNANCY AT UTEUN PULO COMMUNITY HEALTH CENTER NAGAN RAYA REGENCY

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ABSTRACT

Background: Anemia is a global maternal health problem. It occurs in both developed and developing countries, including Indonesia. Anemia impacts health, human resources, and social and economic development. Most cases of anemia in Indonesia are caused by iron deficiency, thus also called iron deficiency anemia. The prevalence of anemia varies based on age, gender, physiological and pathological conditions, environmental factors, social and economic factors, breakfast habits, demographics, Body Mass Index (BMI), and life stage. Purpose to determine the factors associated with anemia in pregnancy at the Uteun Pulo Community Health Center, Nagan Raya Regency. Method: . Cross-sectional research design. The sampling technique was accidental sampling of 82 people. Univariate and bivariate data analysis using the chi-square test. Results: the study showed that the p-value of the 5 independent variables studied, namely compliance with iron tablet consumption (0.000), parity (0.825), birth spacing (0.713), nutritional status (0.009) and infectious diseases (0.001) so that it can be concluded that 3 variables have a relationship with anemia in pregnancy, namely compliance with iron tablet consumption, nutritional status, and infectious diseases. Then the most dominant variables influencing are the variables of iron tablet consumption and infectious diseases.

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1. INTRODUCTION

Indonesia's current health development program still prioritizes efforts to improve maternal and child health, particularly for the most vulnerable groups: pregnant women, women in labor, and infants during the perinatal period. The use of the KIA handbook is expected to improve the quality of maternal and child care and nutrition, thereby achieving one of the national health development goals, namely reducing the Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR), (Kemenkes, 2021)

One of the government's efforts to reduce maternal mortality is through improving the knowledge and behavior of mothers and families. This increased knowledge and behavioral change is expected to raise awareness of the importance of health during pregnancy. To support this, the government is implementing the Pregnancy Class program, which includes education on anemia in pregnancy (Lestari & Nurseptiana, 2023)

Anemia in pregnant women is called a "potential danger to mother and child." Anemia during pregnancy has a negative impact on pregnancy (mother and fetus), childbirth, and postpartum. Anemia can cause various illnesses, such as abortion, premature labor, prolonged labor due to uterine inertia, postpartum hemorrhage due to uterine atony, shock, and infection (Rahmawati et al., 2024).

The most common anemia during pregnancy is due to dietary iron deficiency. This can occur due to impaired absorption, increased iron requirements, or excessive loss of iron, such as through bleeding. Pregnant women need approximately 40 mg of iron per day, or twice the requirement for non-pregnant women. Intervals between pregnancies significantly influence the incidence of anemia during pregnancy. Repeated pregnancies within a short period of time will deplete the mother's iron reserves. Proper spacing of pregnancies, at least two years apart, is crucial so the mother's body is ready to receive another fetus without depleting its iron reserves (Luh Putu Sri Yuliastuti et al., 2023)

Anemia is a global maternal health problem. It occurs in both developed and developing countries, including Indonesia. Anemia impacts health, human resources, and social and economic development. Most cases of anemia in Indonesia are caused by iron deficiency, thus also called iron deficiency anemia. The prevalence of anemia varies based on age, gender, physiological and pathological conditions, environmental factors, social and economic factors, breakfast habits, demographics, Body Mass Index (BMI), and life stage (Soleha & Fatrin, 2022)

Many factors influence the occurrence of anemia during pregnancy, such as maternal age, number of children or parity, chronic energy deficiency (CED), infections and diseases, pregnancy spacing, and maternal education. To treat or prevent anemia, knowledge of these factors is essential for appropriate and correct treatment (Amiruddin & Wahyudin, 2017). Some factors contributing to anemia during pregnancy include parity, age, knowledge level, economic status, education level, and adherence to iron tablet intake (Septianingsih & Yunadi, F., 2021)

Anemia remains a nutritional issue that requires attention and is a public health problem in Indonesia. Anemia occurs when the hemoglobin (Hb) in the blood is below normal. Anemia can be caused by various factors, including iron deficiency, vitamin B12 deficiency, folic acid deficiency, infectious diseases, congenital factors, and bleeding. Anemia can affect all age groups,

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from toddlers and adolescents to pregnant women, and even the elderly. Pregnant women are particularly vulnerable to anemia due to the increased iron requirements of the mother's body as the pregnancy progresses (Anggraini et al., 2022).

Globally, regionally, and in almost all countries, the incidence of anemia among women aged 15–49 years is impacting the World Health Assembly (WHA) global nutrition target of halving the prevalence of anemia by 2030, and the prevalence of anemia among children also remains high. A better understanding of the context-specific causes of anemia and the implementation of effective, high-quality multisectoral measures to address these causes are needed (Arniati et al., 2022).

This type of anemia is most common in low- and middle-income countries, where the primary cause is iron deficiency. According to the WHO, the global prevalence of anemia in pregnant women in 2019 was 37%. Basic Health Research (Riskesdas), the prevalence of anemia in pregnant women in Indonesia in 2018 was 48.9 (Kemenkes, 2024)

Based on data from the Ministry of Health, the Health Research and Development Agency in 2018, which covered 34 provinces, 416 districts, and 98 cities in Indonesia, it was found that the proportion of anemia in pregnant women in 2018 was 48.9%, this shows a continued increase compared to 2013 at 37.1%. Anemia in pregnant women according to age, namely pregnant women aged 15-24 years as much as 84.6%, pregnant women aged 25-34 years as much as 33.7%, pregnant women aged 35-44 years as much as 33.5% and pregnant women aged 45-54 years as much as 24%. (Riskesdas, 2018).

The maternal mortality rate (MMR) in Aceh Province fluctuated from 2018 to 2022, but in 2022, it experienced a significant decline from the previous year, reaching 141 per 100,000 live births. Reported data showed the highest number of maternal deaths in 2022 was in East Aceh Regency with 14 maternal deaths, while the lowest was in Sabang City with 0 maternal deaths (Aceh, 2022)

Regarding iron supplementation, the districts/cities with the highest coverage of pregnant women receiving iron tablets (90 tablets) were Lhokseumawe City at 92.70%, followed by Simeulue Regency at 49.03%, while Aceh Province had 73.20%. Nagan Raya ranked fourth with 90.17%, after Subulussalam (91.92%) and Bireuen (91.48%) (Aceh, 2022)

According to the profile data from the Uteun Pulo Community Health Center in Nagan Raya Regency (2023), the number of pregnant women suffering from anemia was 59.18% (187 out of 316 pregnant women). The number of pregnant women visiting the KIA Clinic at the Uteun Pulo Community Health Center in Nagan Raya Regency in June 2024 was 61 pregnant women, 42 of whom suffered from anemia.

Researchers' interest in the topic of anemia in pregnancy stems from the widespread prevalence of anemia, which is still considered a common occurrence in pregnant women. Many underestimate the severity of the condition, even though the impact of anemia is very dangerous and can even lead to death. Anemia often occurs due to a lack of knowledge about balanced diets and nutrition, a strong culture of dietary restrictions during pregnancy in Aceh, and low adherence to iron supplementation.

Various studies have revealed that knowledge, culture, and adherence to iron supplementation are among the causes of anemia in pregnant women in Aceh, and various research results in different regions have yielded varying or inconclusive results. Given this, researchers believe it is crucial to

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research the topic of anemia so that in the future they can apply this knowledge and change people's mindsets and behaviors for the better.

The initial survey conducted by the researcher at the Uteun Pulo Community Health Center in Nagan Raya Regency by interviewing 10 pregnant women who visited the KIA clinic. The researcher found that 8 mothers had anemia with an Hb range of 8-10 mg/dl and 2 mothers did not have anemia with an Hb amount of 11 mg/dl. When the researcher asked about factors related to anemia, it turned out that the mothers did not know a clear cause. Based on the above, the researcher was interested in researching "Factors related to anemia in pregnancy at the Uteun Pulo Community Health Center in Nagan Raya Regency in 2024".

2. METHOD

This research design is an analytical research using a cross-sectional approach method, namely each research subject is only observed once and measurements are made on the character status or variables of the subject at the time of examination.This research was conducted at the Uteun Pulo Community Health Center in Nagan Raya Regency in 2024. This location was chosen because the Uteun Pulo Community Health Center is one of the hotspots for anemia in pregnancy in Nagan Raya Regency. This research was conducted from January to September 2024.Univariate data analysis and bivariate analysis with chi square test.

The population in this study was all pregnant women with anemia at the Uteun Pulo Community Health Center, Nagan Raya Regency, in August 2024. The sampling technique used in this study was accidental sampling, where the entire population was sampled, totaling 82 people. Ethical clearance has been submitted to the research ethics commission of STIKES Guna Bangsa Yogyakarta with number 014/KEPK/IX/2024.

3. RESULTS AND DISCUSSION

Table 1 Characteristics of respondents at the Uteuen Pulo Community Health Center, Nagan Raya Regency

Respondent Characteristics	n	%
Age		
a. 20-35 Years	67	81.7
b. 36-45 Years	14	98.8
c. Over 45 Years	1	1.2
Total	**82**	**100.0**
Education		
a. Base	21	25.6
b. Intermediate	33	40.2
c. Tall	28	34.1
Total	**82**	**100.0**
Work		
a. housewife	62	75.6
b. Trader	9	11.0
c. Honor	2	2.4
d. civil servant	7	8.5
e. Private sector employee	2	2.4
Total	**82**	**100.0**
Income		
a. ≥ UMR (3.460.672)	31	37.8
b. < Minimum Wage (3.460.672)	51	62.2
Total	**82**	**100.0**
Gestational Age		
a. 7 months	31	37.8
b. 8 months	17	20.7
c. 9 months	34	41.5
Total	**82**	**100.0**

Based on table 1 , it is known that the majority of respondents are aged 20-35 years, namely 67 people (81.7%), the majority of respondents with secondary

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education, namely 33 people (40.2%), and the majority of respondents who work as housewives, namely 62 people (75.6%), the majority of respondents with incomes <UMR, namely 51 people (62.2%), and the majority of respondents with a gestational age of 9 months, namely 34 people (41.5%).

Univariate analysis

Table 2 Distribution of Research Variables

	Frequency	%
Compliance with Fe Tablet Consumption		
Obedient	48	58.5
Not obey	34	41.5
	82	100
Parity		
Primigravida	33	40.2
Multigravida	49	59.8
	82	100
Birth Spacing		
Primigravida	33	40.2
Under 2 years	6	7.3
2-5 years	36	43.9
Over 5 years	7	8.5
	82	100
Nutritional status		
Chronic Energy Deficiency (CED)	8	9.8
No CED	74	90.2
	82	100
Infectious Diseases		
There is	8	9.8
There isn't any	74	90.2
	82	100.0
Anemia in Pregnancy		
Light	46	56.1
Currently	36	43.9
	82	100.0

Table 2 shows it is known that the majority of respondents in this study were in the compliant category with Fe tablet consumption, namely 48 people (58.5%). the majority of respondents in this study were in the multigravida category with parity, namely 49 people (59.8%). the majority of respondents were in the 2-5 year pregnancy interval category, namely 36 people (43.9%). that the majority of respondents in this study had nutritional status in the non-CED category, namely 74 people (90.2%). that the majority of respondents in this study had infectious diseases in the no category, namely 74 people (90.2%). the majority of respondents in this study had anemia during pregnancy in the mild category, namely 46 people (56.1%).

Bivariate analysis
Compliance with Fe Tablet Consumption

Table 3. Relationship between Compliance with Iron Tablet Consumption and Anemia in Pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency

Compliance with Fe Tablet Consumption	Anemia in Pregnancy				Amount		*p-value*
	Currently		Light				
	f	%	f	%	f	%	
Obedient	10	12.2	38	46.3	48	58.5	0.00
Not obey	26	31.7	8	9.8	34	41.5	
Total	36	43.9	46	56.1	82	100	

Table 3 shows that of the 48 respondents who were compliant with consuming iron tablets and experienced mild anemia, 38 people (46.3%) experienced mild anemia. Of the 34 respondents who were non-compliant and experienced moderate anemia, 26 people (31.7%) experienced moderate anemia. The results of the bivariate test using Chi-Square obtained a p-value of 0.000 <0.05, meaning there is a relationship between compliance with consuming iron

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tablets and anemia during pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency in 2024.

The results of the study showed that of the 48 respondents who were compliant with consuming iron tablets and experienced mild anemia, 38 people (46.3%) experienced mild anemia. Of the 34 respondents who were non-compliant and experienced moderate anemia, 26 people (31.7%) experienced moderate anemia. The results of the bivariate test using Chi-Square obtained a p-value of 0.000 <0.05, meaning there was a relationship between compliance with consuming iron tablets and anemia during pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency in 2024.

The results of the study showed that most pregnant women were compliant in taking iron tablets. This could be influenced by pregnant women's good knowledge about iron tablets. This knowledge creates awareness among pregnant women to take iron tablets regularly throughout their pregnancy. Knowledge is the result of knowing, meaning remembering, understanding after seeing. Therefore, knowledge is the result of sensing a particular object. Sensing occurs through the five human senses: sight, hearing, smell, taste, and touch. Most human knowledge is acquired through the eyes and ears (Luh Putu Sri Yuliastuti et al., 2023). In addition, mothers who are compliant in taking iron tablets can avoid the risk of anemia because the iron tablets consumed are a supplement that can increase hemoglobin levels, of course, they must also be accompanied by consuming nutritious food. Iron is indeed very necessary during pregnancy, and pregnant women should consume iron tablets regularly, at least 90 tablets during pregnancy.

Meanwhile, mothers who do not comply with consuming Fe tablets are affected by uncomfortable side effects felt by the mother when consuming Fe tablets, such as nausea, vomiting, and heartburn.

The results of this study align with research conducted by (Dolang, 2020) which revealed that pregnant women who do not attend regular antenatal care (ANC) visits do not receive iron tablets, thus increasing their risk of developing anemia. Regular antenatal care visits are a manifestation of good and proper (quality) antenatal care. The relationship between adherence to iron tablet consumption and the incidence of anemia in pregnant women indicates that pregnant women who regularly take iron tablets do not develop anemia.

Parity

Table 4 Relationship between Parity and Anemia in Pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency

Parity	Anemia in Pregnancy				Amount		*p-value*
	Currently		Light				
	f	%	f	%	f	%	
Primigravida	14	17.1	19	23.2	33	40.2	0.825
Multigravida	22	26.8	27	32.9	49	59.8	
Total	36	43.9	46	56.1	82	100	

Table 4 shows that of the 33 respondents, 19 (23.2%) were primigravida and experienced mild anemia. Of the 34 respondents, 27 (32.9%) were multigravida and experienced mild anemia. The results of the bivariate test using Chi-Square obtained a p-value of 0.825 > 0.05, meaning there was no relationship between parity and anemia during pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency in 2024.

The results showed that of the 33 respondents who were primigravida and experienced mild anemia, 19 (23.2%)

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experienced mild anemia. Of the 34 respondents who were multigravida and experienced mild anemia, 27 (32.9%) experienced mild anemia. The results of the bivariate test using Chi-Square obtained a p-value of 0.825 > 0.05, meaning there was no relationship between parity and anemia in pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency in 2024.

The study found that multigravida parity is caused by other factors affecting pregnant women with high parity, such as attitudes, actions, and the spacing of previous pregnancies. Furthermore, during the study, several respondents were found to have a parity below 4, including those pregnant with their first child. Therefore, no significant differences were found between pregnant women with and without anemia.

This is inconsistent with research by (Riyani et al., 2020) which stated that there is a relationship between parity and the incidence of anemia in pregnant women at the Kramat Jati District Health Center, East Jakarta. In this study, pregnant women with high-risk parities still experienced anemia. If the parity is high, i.e., >3, and the mother lacks nutrients, especially iron, it will result in the mother experiencing anemia, which will result in bleeding during delivery. Parity >3 is a high-risk parity for anemia. Therefore, a mother who wants to get pregnant again must pay attention to nutritional needs, because during pregnancy, nutrients are formed for the mother and the fetus she is carrying. Parity >3 is a factor in the occurrence of anemia. This is because too many pregnancies can deplete the mother's body's nutrient reserves. The more often a woman gives birth, the greater the risk of blood loss and impacts on decreased HB levels. Providing a safe interval of 2-3 times the number of births (parity) to reduce the risk.

Pregnancy spacing

Based on table 5 shows that of the 33 respondents who were primiparous and experienced mild anemia as many as 19 people (23.2%), 6 respondents whose pregnancy interval was less than 2 years and experienced moderate anemia as many as 4 people (4.9%), 36 respondents whose pregnancy interval was 2-5 years and experienced mild anemia as many as 21 people (25.6%) and 7 respondents whose pregnancy interval was more than 5 years and experienced mild anemia as many as 4 people (4.9%). The p-value of 0.713> 0.05 means that there is no relationship between pregnancy interval and anemia in pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency in 2024.

Table 5 Relationship between Pregnancy Spacing and Anemia in Pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency.

Pregnancy Spacing	Anemia				Amount		*p-value*
	Currently		Light				
	f	%	f	%	f	%	
Primi	14	17.1	19	23.2	33	40.2	
Under 2 years	4	4.9	2	2.4	6	7.3	
2-5 years	15	18.3	21	25.6	36	43.9	0.713
Over 5 years	3	3.7	4	4.9	7	8.5	
Total			36	43.9	46	56.1	82	100

The results of the study showed that of the 33 respondents who had no pregnancy spacing and experienced mild anemia, there were 19 people (23.2%), of the 6 respondents who had a pregnancy spacing of less than 2 years and experienced moderate anemia, there were 4 people (4.9%), of the 36 respondents who had a pregnancy spacing of 2-5 years and experienced mild anemia, there were 21 people (25.6%) and of the 7 respondents who had a pregnancy spacing of

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more than 5 years and experienced mild anemia, there were 4 people (4.9%).

The results of the bivariate test using Chi-Square obtained a p-value of 0.713> 0.05, meaning that there was no relationship between pregnancy spacing and anemia in pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency in 2024.

The study found that the majority of births were spaced 2-5 years apart. Researchers assumed that a 2-5 year interval was the ideal interval between the last birth and the next, thus minimizing the risk of anemia in subsequent pregnancies. A pregnancy interval of less than 2 years is a risk factor for abortion. The closer the interval between the previous and current pregnancies, the greater the risk of abortion.

The highest proportion of deaths occurred in mothers with a priority of 1-3 children, and when viewed based on pregnancy spacing, a spacing of less than 2 years showed a higher proportion of maternal deaths. Spacing pregnancies too closely gives the mother very little time to recover from the condition of her reproductive system and uterus to return to its previous state. Pregnancies with too close an interval are at risk of anemia during pregnancy. This is because the mother's iron reserves are restored, ultimately for the needs of the fetus she is carrying.

This is inconsistent with Rizka Heriansyah's (2019) research, which found a significant correlation between pregnancy spacing and the incidence of anemia at the Danau Marsabut Community Health Center in 2019. Pregnancy spacing significantly impacts a pregnant woman's hemoglobin levels. This is because a pregnant woman requires both physical and mental readiness during pregnancy. This birth readiness refers to the physical readiness of the reproductive organs. The longer a mother's pregnancy is between her previous pregnancies, the more prepared her reproductive organs will be for the next pregnancy

Nutritional status

Based on table 6 it shows that of the 8 respondents whose nutritional status was CED and experienced moderate anemia, there were 7 people (8.5%), and of the 74 respondents whose nutritional status was not CED and experienced mild anemia, there were 45 people (54.9%). The results of the bivariate test using Chi-Square obtained a p-value of 0.009 <0.05, meaning there was a relationship between nutritional status and anemia in pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency in 2024

Table 6 Relationship between Nutritional Status and Anemia in Pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency

Nutritional status	Anemia in Pregnancy		Amount				*p-value*
	Currently		Light				
	f	%	f	%	f	%	
CED	7	8.5	1	1.2	8	9.8	0.030
No CED	29	35.4	45	54.9	74	90.2	
Total	36	43.9	46	56.1	82	100	

The results of the study showed that of the 8 respondents whose nutritional status was CED and experienced moderate anemia, there were 7 people (8.5%) and of the 74 respondents whose nutritional status was not CED and experienced mild anemia, there were 45 people (54.9%). The results of the bivariate test using Chi-Square obtained a p-value of 0.009 <0.05, meaning there was a relationship between nutritional status and anemia in pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency in 2024.

The results of the study showed that the majority of pregnant women with

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nutritional status not CED as many as 74 people (90.2%). This can be concluded that mothers who meet nutritional needs during pregnancy such as consuming green vegetables, fruit and vitamins and minerals can also increase nutritional needs of pregnant women during pregnancy. In addition, regular consumption of iron tablets and routine ANC visits as required can also improve mothers' knowledge in meeting nutritional needs during pregnancy.

This is in line with (Ariendhaa et al., 2023) research which stated that the proportion of nutritional status of pregnant women who experienced anemia mostly experienced chronic energy deficiency, namely 34 pregnant women (36.6%) and in the group of pregnant women who did not experience anemia, most also occurred in pregnant women who did not experience chronic energy deficiency, namely 25 pregnant women (26.9%). The results of the analysis using the Chi-Square test of the relationship between anemia and knowledge showed a p-value (p-value = 0.018) (<0.05). These results indicate that the nutritional status of pregnant women is significantly related to the incidence of anemia.

Infectious disease

Table 7 Relationship between Infectious Diseases and Anemia in Pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency

Infectious Diseases	Anemia in Pregnancy				Amount		*p-value*
	Currently		Light				
	f	%	f	%	f	%	
There is	8	9.8	0	0	8	9.8	
There isn't any	28	34.1	46	56.1	74	90.2	0.001
Total	36	43.9	46	56.1	82	100	

Based on table 7 it shows that out of 8 respondents who had infectious diseases and experienced moderate anemia, there were 8 people (9.8%). Of the 74 respondents who did not have infectious diseases and experienced mild anemia, there were 46 people (56.1%). The results of the bivariate test using Chi-Square obtained a p-value of 0.001 <0.05, meaning there was a relationship between infectious diseases and anemia in pregnancy at the Uteuen Pulo Health Center, Nagan Raya Regency in 2024. The majority of infectious diseases in this study were tuberculosis, with 6 people (7.3%) and malaria, with 2 people (2.4%).

Table shows that of the 8 respondents who had infectious diseases and experienced moderate anemia, 8 people (9.8%). Of the 74 respondents who did not have infectious diseases and experienced mild anemia, 46 people (56.1%). The results of the bivariate test using Chi-Square obtained a p-value of 0.001 < 0.05, meaning there is a relationship between infectious diseases and anemia in pregnancy at the Uteuen Pulo Community Health Center, Nagan Raya Regency in 2024.

The results of the study showed that 74 respondents did not suffer from infectious diseases, while 8 respondents suffered from infectious diseases. This indicates that in the study area, the number of pregnant women suffering from infectious diseases was lower than those suffering from infectious diseases. The infectious diseases suffered by pregnant women in this study were tuberculosis and malaria. The researcher assumed that pregnant women were susceptible to infectious diseases and contagious diseases. Infectious diseases are usually not detected during pregnancy. The disease suffered greatly determines the quality of the fetus born. It is known that after a baby is born with a disability, the mother will experience a lack of body fluids and other nutrients.

This is in line with the research of Nahdiani, et, all (2019) which found that 38 respondents were anemic (42.2%), and 52 respondents were not anemic (57.8%), there was no relationship between maternal age

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and the incidence of anemia in pregnant women (p value 0.070), there was no relationship between education level and the incidence of anemia in pregnant women (p value 0.509), there was no relationship between economic status and the incidence of anemia in pregnant women (p value 1.000), there was no relationship between parity and the incidence of anemia in pregnant women (p value 1.000), there was no relationship between knowledge and the incidence of anemia in pregnant women (p value 0.760), there was no relationship between the distance of compliance with Fe tablet consumption and the incidence of anemia in pregnant women (p value 0.356), there was a relationship between a history of infectious diseases and the incidence of anemia in pregnant women (p value 0.037) OR 0.261.

This study is in line with Husna, (2019) whose research results show that infectious diseases are a risk factor for anemia in pregnant women, with an Odd Ratio OR = 7.154, meaning that pregnant women who have suffered from infectious diseases are 7.154 times more at risk of suffering from anemia than pregnant women who have never suffered from anemia. This study is in line with Syarif, (2021) whose results show that there is a relationship between a history of infectious diseases of (p = 0.025) and the occurrence of anemia in pregnant women.

This infectious disease can reduce the body's resistance to various diseases. It also causes a loss of appetite, thus reducing nutritional intake. Pregnant women are particularly susceptible to infections and infectious diseases. Although not life-threatening, maternal illnesses can have harmful effects on the fetus. These diseases can lead to abortion, stunted fetal growth, stillbirth, and birth defects. Infectious diseases can also cause anemia because they can lead to decreased food intake and nutrient malabsorption.

Multivariate analysis

Based on table 8 it shows that of the 3 variables tested by logistic regression, all have a p value <0.000, namely (compliance with consuming iron tablets 0.000, nutritional status 0.002 and infectious diseases 0.000) and the variable with the smallest p value is the variable of compliance with consuming iron tablets and infectious diseases, namely 0.000, meaning that the most dominant variable is significantly related to anemia in pregnancy at the Uteuen Pulo Health Center, Nagan Raya Regency in 2024. The lower and upper values of the 95% CI show values above 1, meaning that compliance with consuming iron tablets and infectious diseases are factors that strengthen anemia, meaning that if someone does not consume iron tablets and has an infectious disease, there is a high possibility of experiencing anemia during pregnancy.

The most dominant factors associated with anemia in pregnancy

Table 8 Logistic Regression Test Results

Variables	B	Sig.	CI 95%	
			Lower	Upper
Compliance with FE Tablet Consumption	0.531	0,000	0.372	0.690
Nutritional status	0.434	0.002	0.169	0.700
Infectious Diseases	0.692	0,000	0.429	0.955

The results of the study showed that of the 3 variables tested by logistic regression,

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all had a p-value <0.000, namely (compliance with consuming iron tablets 0.000, nutritional status 0.005 and infectious diseases 0.000) and the variable with the smallest p-value was the variable of compliance with consuming iron tablets and infectious diseases, namely 0.000, meaning that the most dominant variable had a significant relationship with anemia in pregnancy at the Uteuen Pulo Health Center, Nagan Raya Regency in 2024.

Anemia in pregnancy can occur with 3 factors that most significantly influence it, namely compliance with consumption of Fe tablets, nutritional status and infectious diseases. The majority of infectious diseases experienced by pregnant women in this study were tuberculosis and malaria. However, the most dominant influence is compliance with consumption of Fe tablets and infectious diseases. Based on the results of the study there is a relationship between a history of infectious diseases and the incidence of anemia in pregnant women, mothers who suffer from infectious diseases experience anemia with a history of diseases including worms, diarrhea, hypertension, and urinary tract infections, this is due to poor maternal diet and mothers who do not consume enough foods containing vitamin C such as fruits. Based on the study, researchers found respondents experienced infectious diseases because according to the results of the researcher's observations, the respondents' environment was included in a polluted environment.

Anemia is often caused by a lack of iron content in food, very low iron absorption from food, the presence of substances that inhibit iron absorption and the presence of parasites in the body such as hookworms or tapeworms or a lot of blood loss due to accidents or surgery . According to (Damayanti et al., 2021) factors that influence the incidence of anemia in pregnant women are basic factors such as socioeconomic, knowledge, education, culture, indirect factors such as antenatal care (ANC) visits, parity, age, husband's support, direct factors such as consumption of iron tablets, causes of infection, bleeding.

The results of this study indicate that adherence to consuming iron tablets and infectious diseases (TB and malaria) are the dominant variables related to the incidence of anemia in pregnancy. Therefore, to reduce the incidence of anemia in pregnancy, iron tablet consumption must be increased and infectious disease prevention must also be carried out. Tuberculosis (TB) and malaria can cause anemia through different mechanisms. In TB, anemia mainly results from chronic inflammation that increases hepcidin production, thereby inhibiting the release and utilization of iron from body stores and reducing iron availability for hemoglobin synthesis (functional iron deficiency). In contrast, in malaria, anemia is primarily caused by direct destruction of red blood cells by the Plasmodium parasite through hemolysis during its life cycle, both within the bloodstream and in the spleen, and may also be accompanied by reduced erythropoiesis in the bone marrow. Thus, TB impairs iron absorption and distribution, whereas malaria leads to reduced hemoglobin levels through red blood cell destruction.

Implementation is by providing health promotion to the community to prevent infectious diseases and if already experienced to immediately seek treatment, then to focus data on iron tablet consumption by village midwives on pregnant women in their area to ensure that every iron tablet given must be taken by pregnant women. This health promotion is carried out more optimally by counseling to the village, especially at Posyandu activities, pregnant women's classes and during

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pregnancy checks. Village midwives must be alert and then provide reports to the Community Health Center so that the Community Health Center can evaluate and can follow up if there are still deficiencies. Then also collaborate with the village, so that pregnant women who receive PKH assistance are required to be recorded regarding iron tablet consumption as well.

Prevention or treatment of tuberculosis and malaria must also be improved, which can be done by collaborating with the infectious disease (TB) team for handling and health promotion related to disease prevention and also collaborating with obstetricians and gynecologists so that the education provided is optimally received by all pregnant women.

4. CONCLUSION

Based on the results of the study entitled " factors related to anemia during pregnancy at Uteun Pulo Community Health Center Nagan Raya Regency," the study showed that the p-value of the 5 independent variables studied, namely compliance with iron tablet consumption (0.000), parity (0.825), birth spacing (0.713), nutritional status (0.009) and infectious diseases (0.001) so that it can be concluded that 3 variables have a relationship with anemia in pregnancy, namely compliance with iron tablet consumption, nutritional status, and infectious diseases. Then the most dominant variables influencing are the variables of iron tablet consumption and infectious diseases.

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