

FACTORS INFLUENCING ANEMI IN PREGNANT WOMEN AT TRIMURTI CLINIC

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Abstract

Introduction : Anemia is a condition in which the mother's hemoglobin level is less than 11g/dl due to a lack of iron in red blood cells. The criteria for anemia can be divided into 3, namely mild, moderate and severe anemia . The impact of this anemia can be on the mother and baby. **Objective** : To analyze the factors that influence the occurrence of anemia in pregnant women at the Trimurti Clinic. **Method**: observational analytic with approach *cross sectional study* . **Population and Sample**: all pregnant women in the third trimester at the Trimurti Badar Setia Clinic, Percut Sei Tuan District, Deli Serdang Regency, as many as 35 people with a total population sampling technique, the number of samples was 35 people. **Place and time**: Trimurti Badar Setia Clinic, Percut Sei Tuan District , Deli Serdang Regency, North Sumatra Province, April-July 2024. **Results** : In terms of nutrition of pregnant women, it was found that the $p\text{ value} = 0.503 > 0.05$, so there is no relationship between the incidence of anemia and the nutritional status of respondents. From sleep patterns, the $p\text{ value} = 0.025$ was found and in terms of socio-economics, the $p\text{ value} = 0.008 < 0.05$ This means that there is a relationship between the incidence of anemia and the socio-economics of respondents at the Trimurti Clinic **Conclusion** : There is no relationship between nutritional status and the incidence of anemia and there is a relationship between dietary patterns and socio-economics with the incidence of anemia in pregnant women in the third trimester at the Trimurti Clinic.

Keywords: Pregnant women, nutritional status, diet, socio-economic, anemia

INTRODUCTION

The maternal mortality rate is still high. The SDGs target is expected to be 70/100,000 births by 2030. By 2022, the maternal mortality rate is 189/100,000 live births. Many things can cause this maternal mortality rate, one of which is complications in mothers during pregnancy or childbirth, namely anemia. (Ministry of Health of the Republic of Indonesia., 2023) . Anemia is a condition in which the mother's hemoglobin level is less than 11g/dl due to a lack of iron in red blood cells.

The criteria for anemia can be divided into 3, namely mild, moderate and severe anemia.

The incidence of anemia according to WHO is 38% of pregnant women during pregnancy (Ariendha et al., 2022) . In Saudi Arabia, 34.1% of pregnant women were found to have anemia. In Indonesia, the anemia rate is 35%. Based on the trimester, anemia occurs differently in each trimester. In Cilacap, the majority of pregnant women in the third trimester experience anemia, as much as 45.5% (Tri Aksari & Didik Nur Imanah, 2022) . In Yogyakarta, the incidence of



anemia in the first trimester is 23.1%, in the second trimester as much as 15.6% and in the third trimester as much as 61.5% (Mahmudah, 2022). In Deli Serdang, 35.4% of pregnant women experience anemia (Purba, 2021).

The impact of this anemia can be on the mother and baby. In pregnant mothers, the mother can feel dizzy and weak due to lack of O₂ and nutrients carried by the blood in hemoglobin. During childbirth, bleeding can occur due to lack of uterine contractions after the placenta, prolonged labor due to lack of contractions in expelling the fetus from the womb. While in babies, it can cause LBW, premature and even fetal death in the womb due to lack of O₂ and nutrients distributed to the fetus in the womb (Hidayanti & Rahfiludin, 2020).

Many factors are at risk for anemia in pregnant women such as age, ethnicity, compliance with taking birth control pills, education, parity, nutritional status, economy, diet and sleep patterns (Azmi & Puspitasari, 2022). According to Pasaribu et al. in 2023, anemia can occur in pregnancy due to anemia that has been suffered by the mother since the pre-conception period (Pasaribu et al., 2023). From the results of previous studies, it was found that anemia can also be obtained from infections with parasites such as worms and malaria and infections with diseases such as tuberculosis and HIV (Nurnaningsih et al., 2022). According to Florida et al. in 2023, nutritional status can affect the occurrence of anemia in pregnant women (Floridha et al., 2023). According to Bria in Yogyakarta, it also stated that there is a relationship between nutrition and the occurrence of anemia in pregnant women (Bria & Nur Rohmah, 2023). According to

Santia et al. in 2022, there was a relationship between sleep patterns and the occurrence of anemia in pregnant women (Santia et al., 2022).

According to O Toole in Ireland, one of the treatments for overcoming anemia in pregnancy is to provide iron to pregnant women (O'Toole et al., 2023). In Indonesia, a policy has been made to provide iron to every pregnant woman 1 tablet once a day as prevention and provide iron to pregnant women with anemia 2 tablets once a day as treatment. Education can also be a treatment for anemia because anemia in pregnant women is caused by lack of knowledge about the impact of anemia, prevention or how to consume FE tablets correctly (Mirwanti et al., 2021). According to other studies, the majority of pregnant women (57.2%) are not compliant in consuming FE tablets due to lack of knowledge (Fajrin & Erisniwati, 2021). There is a relationship between education for pregnant women regarding anemia prevention and increasing knowledge of pregnant women (Wijaya et al., 2022).

From the results of a survey conducted by researchers on April 5, 2024, out of 10 pregnant women who underwent pregnancy check-ups at the Trimurti clinic, 8 pregnant women were found to have anemia. From this, researchers are interested in examining the Factors Affecting the Incidence of Anemia in Pregnant Women at the Trimurti Clinic, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency in 2024.

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METHOD

This type of research is This research is an observational study with a *cross control* design . to analyze the factors that influence the occurrence of

anemia in pregnant women . Time: April to July 2024. Place: Trimurti Badar Setia Clinic, Percut Sei Tuan District , Deli Serdang Regency, North Sumatra Province in 2024. Population : pregnant women visiting at Trimurti Clinic as many as 35 people with total sampling technique, the number of

samples is 35 people. Univariate data analysis is the characteristics of respondents using frequency distribution and bivariate analysis is the *chi square test* to analyze the relationship between nutritional status, diet and socioeconomic status with the incidence of anemia .

RESULT AND DISCUSSION

Characteristics Respondent in study This consists of from age, education, work , socio-economic, nutritional status Which explained as following:

Table 1 Frequency Distribution Based on Respondent Characteristics in Trimurti Clinic Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024

Characteristics Respondents	Frequency(F)	Percentage(%)
Age		
20-35 years	32	91.4
>35 years	3	8.6
Education		
SD	2	5.7
JUNIOR HIGH SCHOOL	2	5.7
High School / Equivalent	23	65.7
College	8	22.9
Work		
Housewife	20	83.9
Self-employed	9	11.3
Private employees	4	4.8
civil servant	2	5.7
pregnancy		
Primigravida	8	22.9
Multigravida	27	77.1
Total	35	100.0

Source : Data Primary, 2024

From table 1 it is stated that the majority of respondents aged 20-35 years, namely 32 people (91.4% and a minority aged > 35 years as many as 3 people (8.6%). In terms of education, the majority of respondents were high school/equivalent as many as 23 people (65.7%) and the minority were elementary school education as many as 2 people (5.7%) . In terms of gravida, the majority of respondents were multigravida as many as 27 people (77.1%) and the minority were primigravida as many as 8 people (22.9%).

1. Analysis Univariate

Univariate analysis in this study consists of nutritional status (X1), pattern

Sleep (X2), status economy (X3) And incident anemia (Y) Which explained as follows :

Table 2 Frequency Distribution Based on the Variables to be Studied at the Trimurti Clinic, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024

Category	Frequency(F)	Percentage(%)
Status Nutrition		
Status Malnutrition	9	25.7
Status Good nutrition	26	74.3
Status Economy		
Low	19	54.3
Tinggi	16	45.7
Kejadian Anemia		
Anemia	15	42.9
Tidak Anemia	20	57.1
Total	62	100,0

Sumber : Data Primer, 2023

From table 2 it can be seen that in terms of nutritional status, the majority of respondents are good as many as 26 people (74.3%) and the minority of poor nutritional status as many as 9 people (25.7%), the majority of low socio-economic respondents as many as 19 people (54.3%) and the high minority as many as 16 people (45.7%). In terms of anemia incidence, the majority are not anemic as many as 20 people (57.1%) and the minority are anemic as many as 15 people (42.9%).

2. Analysis Bivariate

a. Influence Status Nutrition To Incident Anemia on Mother Pregnant in Trimurti Clinic, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency in 2024 .

Table 3 The Influence of Nutritional Status on the Incidence of Anemia in Mothers Pregnant at the Trimurti Clinic, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency in 2024

Nutritional status	Anemia		No anemia		Total		p
	N	%	N	%	N	%	
No Good	3	9	6	17	9	26	0.503
Good	12	34	14	40	26	74	
Total	15	43	20	57	35	100	

Source : Data Primary, 2024

Based on table 3 it can be seen that the majority of respondents with good nutrition were 26 people (74%) with a non-anemic condition of 14 people (40%) while respondents with poor nutritional status were 9 people (26%) the majority were anemic as many as 3 people (9%). Based on the results of the *chi-square test*, it was found that the *p* value = 0.503 > 0.05. This means that *H₀* is accepted, namely there is no relationship between the incidence of anemia and the nutritional

status of respondents at the Trimurti Bandar Setia Clinic, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024.

b. The Influence of Sleep Patterns on the Incidence of Anemia in Pregnant Women in Trimurti Clinic Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024

Table 4 The Influence of Sleep Patterns on the Incidence of Anemia in Mothers Pregnant at the Trimurti Clinic, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency in 2024

Sleep Patterns	Anemia Occurrence				Total		<i>p</i>
	Anemia		No Anemia		N	%	
	N	%	N	%			
No Good	11	31	7	20	18	51	0.025
Good	4	12	13	37	20	49	
Total	15	43	20	57	35	100	

Sumber : Data Primer, 2024

Based on table 4 it can be seen that in terms of sleep patterns, respondents with poor sleep patterns mostly had anemia as many as 11 people (31%) and respondents with good sleep patterns were mostly not anemic as many as 13 people (37%). Based on the results of the *chi-square test*, it was found that the *p* value = $0.025 < 0.05$. This means that H_a is accepted, namely there is a relationship between the incidence of anemia and the sleep patterns of respondents at the Trimurti Bandar Setia Clinic, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024.

c. Influence Status Economy To Incident Anemia on Mother Pregnant at the Trimurti Clinic, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024

Table 5 The Influence of Economic Status on the Incidence of Anemia in Mothers Pregnant at the Trimurti Clinic, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency in 2024

Status Economy	Incident Anemia				Total		<i>p</i>
	Anemia		No <u>Anemia</u>		N	%	
	N	%	N	%			
Low	12	34	7	20	19	54	0. 008
Tall	3	9	13	37	16	46	
Total	15	43	20	57	35	100,0	

Sumber : Data Primer, 2024

Based on table 5 said that the majority of respondents with low economic status were 19 people (54%) with anemia as many as 12 people (34%), while respondents with high socioeconomic status were 16 people (46%) the majority were not anemic as many as 13 people (37%). Based on the results of the *chi-square test*, it was found that the *p* value = $0.008 < 0.05$. This means that H_a is accepted,

namely there is a relationship between the incidence of anemia and the socio-economic status of respondents at the Trimurti Bandar Setia Clinic, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024

DISCUSSION

1. Relationship Status Nutrition To Incident Anemia on Mother Pregnant in Trimurti Clinic Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency in 2024

Based on table 4.5 It can be seen that the majority of respondents with good nutrition were 26 people (74%) with a non-anemic condition of 14 people (40%) while respondents with poor nutritional status were 9 people (26%) the majority were anemic as many as 3 people (9%). Based on the results of the *chi-square test*, it was found that the p value = $0.503 > 0.05$. This means that H_a is accepted, namely there is no relationship between the incidence of anemia and the nutritional status of respondents at the Trimurti Bandar Setia Clinic, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024.

Nutritional status plays a very important role in pregnant women for the growth and development of the fetus. Poor nutritional status will reduce the quality of red blood cells which function to provide nutrients and oxygen bound to hemoglobin to be given to the fetus. Nutrients, especially iron, are very much needed by pregnant women. Iron is a prevention or treatment for pregnant women so that anemia does not occur or to overcome anemia (Mahayasa et al., 2022). Iron can be received in tablet form from health workers but can also be obtained from food sources such as colored vegetables and fruits (Franshisca Sihombing, 2023). The results of this study do not

match previous research by Utama in Poso that the nutritional status of pregnant women plays a very active role in causing anemia (Utama, 2021). The results of this study are in accordance with the results of the 2023 Florida study that there is a relationship between nutritional status and the incidence of anemia in pregnant women (Floridha et al., 2023). The same thing was conveyed by Bria in 2023 in Yogyakarta that there was a relationship between nutritional status and the occurrence of anemia in pregnant women, the results of the study were not the same as Bria's study (Bria & Nur Rohmah, 2023).

According to the researcher's assumption that there is no relationship between the nutritional status of pregnant women visiting the Trimurti Bandar Setia clinic and the incidence of anemia because the nutritional status is measured using a cm tape called LILA, although many LILA studies do not increase the risk of anemia in pregnant women, but there are other risk factors that can cause anemia such as multigravida, birth spacing, and diseases in pregnant women. So even though the LILA size is normal, pregnant women are still anemic even though it occurs in small amounts.

2. Influence Relationship Sleep Patterns To Incident Anemia on Mother Pregnant in Trimurti Clinic Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency in 2024

Based on table 4. 6 It can be seen that in terms of sleep patterns, respondents with poor sleep patterns

mostly experience anemia, as many as 11 people (31%) and respondents with good sleep patterns, the majority are not anemic, as many as 13 people (37%). Based on the results of the *chi-square test*, it was found that the $p\text{ value} = 0.503$, the $\alpha\text{ value} = 0.025$. This means that H_a is accepted, namely there is a relationship between the incidence of anemia and the sleep patterns of respondents at the Trimurti Bandar Setia Clinic, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024.

During pregnancy, pregnant women will experience physical and psychological changes to prepare for the needs of the fetus along with the growth and development of the fetus in the womb. In this process, it is necessary to be supported by a sufficient rest pattern because in a state of rest, the energy we get from nutrition is not used for more activities. During sleep, the energy of pregnant women will focus on the growth and development of the fetus. If the sleep pattern is bad in the body of pregnant women, there will be longer oxidative stress or fatigue and a decrease in red blood cells and will cause anemia in pregnant women.

The results of this study are in accordance with the results of the study by Santia et al. in 2022 in Surakarta that there is a relationship between poor sleep patterns and the occurrence of anemia in pregnant women (Santia et al., 2022). The same thing was conveyed by Handini in 2023 that there is a relationship between poor sleep patterns and the occurrence of anemia because with lack of sleep, the body experiences long-term stress oxidation causing a decrease in red blood cells (Handini et al., 2023). Hevanda also stated that

there is a relationship between sleep patterns and the occurrence of anemia because mothers with poor or insufficient sleep patterns can cause the body to lack energy, causing the body to use red blood cells to carry out activities so that it is not sufficient for the needs of the mother and her fetus (Handini et al., 2023).

Researchers assume that the majority of respondents work as housewives with multigravida, resulting in respondents experiencing poor sleep patterns, resulting in anemia.

3. Influence Relationship Socio-Economic To Incident Anemia on Mother Pregnant in Trimurti Clinic, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency in 2024.

Based on table 4.7 said that the majority of respondents with low economic status were 19 people (54%) with anemia as many as 12 people (34%), while respondents with high socioeconomic status were 16 people (46%) the majority were not anemic as many as 13 people (37%). Based on the results of the *chi-square test*, it was found that the $p\text{ value} = 0.008$ $\alpha\text{ value} = 95\%$ This means that H_0 is accepted, namely there is no relationship between the incidence of anemia and the socio-economic status of respondents at the Trimurti Bandar Setia Clinic, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra Province in 2024.

Anemia is a hemoglobin level below 11 mg/dl. Nutritional management is very useful to meet hemoglobin levels during pregnancy. Poor socioeconomic status will make it difficult for pregnant women to choose a nutritious menu. Food ingredients need to be taken or purchased and require funds. The results of this study are in accordance

with Hayati and Martha that there is a relationship between economic status and the incidence of anemia (Hayati & Martha, 2020) .

Researchers assume that respondents experience anemia due to low socioeconomic status, characterized by poor nutritional status because the majority of respondents are housewives and multiparous. Respondents are unable to share funds.

CONCLUSION AND SUGGESTION

The majority of respondents aged 20-35 years, multigravida parity, housework . There is no relationship between nutritional status , because even though nutrition is good there are other factors that can cause anemia such as multigravida. There is a relationship between sleep patterns and socioeconomics on the incidence of anemia in respondents at the Trimurti Clinic, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency in 2024. It is recommended that the Trimurti clinic provide education on preventing anemia in pregnant women.

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