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THE FACTORS RELATED TO ANEMIA IN PREGNANT WOMEN

Yenny Aulya*, Jenny Anna Siauta, Jacklean Ferdinan, Febry Mutiariami Dahlan
Midwifery Study Program, Faculty of Health Sciences, Universitas Nasional, Jl. Sawo Manila No.61, Pejaten Barat,
Ps. Minggu, Jakarta Selatan, Jakarta 12520, Indonesia
*yenny.aulya@civitas.unas.ac.id

ABSTRACT

As indicated by information from the East Nusa Tenggara Provincial Health Office in 2018, 46.2% of pregnant women experience anemia. According to data from the East Nusa Tenggara Provincial Health Office in 2018, 46.2% of pregnant women experienced anemia. Data from the Kupang District Health Office in 2021 recorded that 36.2% of pregnant women with anemia. To determine the factors associated with the incidence of anemia among pregnant women in the Naibonat Hospital, Kupang Regency. Methodology : The exploration configuration utilized a cross sectional plan. The example in this study was 74 pregnant ladies who had their pregnancy checked in Naibonat Hospital utilizing a basic arbitrary inspecting technique. The examination instrument utilized was a survey. Bivariate investigation had been finished by the Chi Square test. Out of 74 pregnant ladies who experienced paleness which was 63.5%, SEZ was 75.7%, had a propensity for consuming espresso was 59.5%, stuck to consuming Fe tablets was 52.7%, pregnancy stretch was not in danger was 54.1%, had an absence of information about pallor was 52.7%. There was a critical connection between espresso utilization (P = 0.003), adherence to Fe tablets (P = 0.000), gestational distance (P = 0.001), information on pregnant ladies (P = 0.003) and the occurrence of frailty in pregnant ladies, and there was no a huge connection between the frequency of iron deficiency in pregnant ladies with nourishing status (P = 0.056). There was a huge connection between espresso drinking propensities, adherence to polishing off Fe tablets, pregnancy stretch, information and the frequency of paleness in pregnant ladies. There was no huge connection between healthful status and the occurrence of paleness. Increment the information on pregnant ladies about the significance of taking an interest in family arranging programs to have the option to deal with the distance between the current pregnancy and the past pregnancy, and the risks of a pregnancy that is excessively near the past pregnancy.

Keywords: anemia in pregnancy; adherence to consuming fe tablets; coffee consumption habits; knowledge about anemia; nutritional status; pregnancy distance

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INTRODUCTION

Anemia generally occurs throughout the world, especially in developing countries, in low socioeconomic groups, including education, employment, income. In the adult group, it occurs in women of reproductive age, especially pregnant women and breastfeeding women because they experience a lot of Fe deficiency (Sjahriani &; Faridah, 2019).nAccording to WHO, globally the prevalence of anemia in pregnant women worldwide is 41.8%, according to WHO, 40% of maternal deaths in developing countries are related to anemia in pregnancy caused by iron deficiency and acute bleeding (Rosdawati, 2019). The number of maternal deaths in Indonesia collected from the recording of family health programs at the Ministry of Health in 2020 showed 4,627 deaths in Indonesia. This number shows an increase compared

to 2019 of 4,221 deaths. Based on causes, most maternal deaths in 2020 were caused by bleeding as many as 1,330 cases, hypertension in pregnancy as many as 1,110 cases, and circulatory system disorders as many as 230 cases.

The results of Riskesdas 2018 in the Indonesian health profile of the Indonesian Ministry of Health 2021 stated that in Indonesia 48.9% of pregnant women experience anemia. Or as many as 129,585,000 people have anemia. In pregnant women aged 15-24 years as much as 84.6%, aged 25-34 years as much as 33.7%, at the age of 35-44 years as much as 33.6%, and at the age of 45-54 years as much as 24%. To prevent anemia, every pregnant woman is expected to get a blood added tablet (TTD) of at least 90 tablets during pregnancy. The coverage of giving TTD to pregnant women in Indonesia in 2020 was 83.6%. This figure increased compared to 2019 by 64%. The coverage of giving TTD to pregnant women in East Nusa Tenggara is 59.6% (Ministry of Health of the Republic of Indonesia 2021). According to data from the East Nusa Tenggara Provincial Health Office in 2018, as many as 46.2% of pregnant women were anemic. Data from the Kupang Regency Health Office in 2021 recorded 36.2% of pregnant women with anemia.,

Anemia is a serious global public health problem that primarily affects children and pregnant women. WHO estimates that 42% of children under the age of 5 and 40% of pregnant women worldwide are anemic. Most anemia in Indonesia has been expressed as a result of lack of iron (Fe) needed for the formation of hemoglobin, so the Indonesian government overcomes it by giving iron supplements for pregnant women, but the results have not been satisfactory. Indonesian people generally consume iron (Fe) from vegetable sources that have low absorption compared to animal sources. Iron (Fe) needs in the fetus will increase until the final trimester so that iron (Fe) supplements are needed (Sulistioningsih, 2018).

The direct cause of anemia in pregnant women is iron deficiency in the body caused by a lack of food sources that contain iron, sufficient food but food sources have low iron content so that the amount of iron absorbed is less, and the food eaten contains iron absorbs inhibitors (Roosleyn, 2016). The impact of anemia on pregnancy varies from very mild complaints to the occurrence of impaired pregnancy continuity. In pregnant women, anemia increases the frequency of complications in pregnancy and childbirth, increases the risk of maternal and infant mortality, and low birth weight. The danger of anemia during pregnancy can also cause abortion, premarurity delivery, inhibition of fetal growth and development in the uterus, easy infection, the threat of cordial decompensation (Hb < 6 g%), hyperemesis gravidarum, antepartum hemorrhage, and premature rupture of membranes (Irianto, 2014).

Government programs require antenatal care service standards, one of which is by giving 90 iron tablets during pregnancy as an effort to prevent anemia in pregnant women (Ministry of Health RI, 2019). The benefits of iron for the body, including helping to keep the body from experiencing anemia. Pregnant women who lack iron reserves can cause iron deficiency anemia (Sudargo et al, 2018). According to research conducted by Amanupunnyo (2018) at the Kairatu West Seram Health Center, it shows an influence on the incidence of anemia in pregnant women, namely pregnant women who often consume coffee or tea during pregnancy have a 17.6 times greater risk of anemia than those who rarely consume coffee and tea during pregnancy. In research conducted by Sarah (2018) it was found that most pregnant women who experience pregnancy anemia are in the third trimester and significant results were obtained between the effect of adherence to iron tablet consumption on the incidence of anemia in third trimester pregnant women. The more obedient pregnant women are in consuming Fe tablets, the higher the Hb levels of pregnant women. Low compliance rates

require counseling about anemia, the benefits of iron tablets and food sources of iron to prevent anemia in pregnant women.

Based on the results of Sinaga's research (2019) it was found that there is a significant relationship between the distance of pregnancy, nutritional status of pregnant women with the incidence of anemia in pregnant women where the relationship between pregnancy distance and anemia was obtained that there were as many as 45 (77.6%) pregnancy distances at risk of anemia, the relationship between nutritional status using LILA measurements was obtained that there were as many as 32 (84.2%) had LILA < 23.5 cm anemic, Pregnant women who are not anemic understand more knowledge about anemia than pregnant women who are anemic, but both have the same understanding of the causes and symptoms of anemia. From the results of a preliminary survey conducted by researchers at the Naibonat Regional General Hospital to 15 respondents, there were 8 pregnant women who had anemia, namely Hb < 10 g / dl as many as 4 people in TM III, Hb < 10.5 g / dl as many as 2 people in TM II, and Hb < 11 g / dl as many as 2 people in TM I. From the results of interviews conducted by researchers, mothers who experienced anemia has a less nutritional status characterized by the results of LILA measurements < 23.5 cm, less knowledge about anemia, has a pregnancy gap of < 2 years, often consumes coffee in large quantities during pregnancy, does not comply in consuming blood added tablets (Fe), while 7 people who do not have anemia have good enough knowledge about anemia, sufficient nutritional status is characterized by the results of LILA measurements ≥ 23.5 cm, Consuming coffee is not excessive and within normal limits, obediently consuming blood-added tablets is characterized by the absence of residual blood-added tablets given. To determine the factors associated with the incidence of anemia among pregnant women in the Naibonat Hospital, Kupang Regency

METHOD

The exploration configuration utilized a cross sectional plan. The example in this study was 74 pregnant ladies who had their pregnancy checked in Naibonat Hospital utilizing a basic arbitrary inspecting technique. The examination instrument utilized was a survey. Bivariate investigation had been finished by the Chi Square test

RESULTS

Table 1.
The relationship between nutritional status and the incidence of anemia in pregnant women

Nutritional Status	Anemia		No Anemia		Total		P *Value*
	f	%	f	%	f	%	
CAKE	39	69,6	17	30,4	56	100	0,056
No SEZ	8	44,4	10	55,6	18	100	
Total	47	63,5	27	36,5	74	100	

Table 1 shows that of 56 pregnant women who experienced SEZ, 39 (69.6%) had anemia, while of 18 pregnant women who did not experience SEZ, there were 10 (55.6%) who did not have anemia. Statistical tests using *chi square* obtained a value of P = 0.056 (p > 0.05) which means that there is no significant relationship between the incidence of anemia in pregnant women and the nutritional status of pregnant women.

Table 2.
The relationship between coffee consumption habits and the incidence of anemia

Coffee Consumption Habits	Anemia		No Anemia		Total		P *Value*	OR (CI 95%)
	f	%	f	%	f	%		
Often	34	77,3	10	22,7	44	100	0,003	4,446
Infrequently	13	43,3	17	56,7	30	100		
Total	47	63,5	27	36,5	74	100		

Table 2 shows that of 44 pregnant women who often consume coffee during pregnancy there are 34 pregnant women (77.3%) who have anemia, while from 30 pregnant women who rarely consume coffee during pregnancy there are 17 pregnant women (56.7%) who do not experience anemia. The results of statistical tests using *chi square* obtained a value of P = 0.003 (p < 0.05) which means that there is a significant relationship between the incidence of anemia in pregnant women with the habit of consuming coffee during pregnancy. With an OR value = 4.446 which means that pregnant women who often consume coffee have a four times greater risk of anemia compared to pregnant women who rarely consume coffee.

Table 3.
Relationship of Adherence to Taking Fe Tablets with Incidence of Anemia

Adherence to Taking Fe Tablets	Anemia		No Anemia		Total		P *Value*
	f	%	f	%	f	%	
Obedient	14	35,9	25	64,1	39	100	0,000
Disobedient	33	94,3	2	5,7	35	100	
Total	47	63,5	27	36,5	74	100	

Table 3 shows that of the 39 pregnant women who were obedient to taking Fe tablets during pregnancy, there were 25 pregnant women (64.1%) who were not anemic, while of the 35 pregnant women who were obedient to taking Fe tablets during pregnancy, there were 33 pregnant women (94.3%) pregnant women who were anemic. Statistical tests using *chi square* obtained a value of P = 0.000 (p < 0.05) which means that there is a significant relationship between the incidence of anemia in pregnant women with adherence to consuming Fe tablets during pregnancy.

Table 4.
The Relationship Between Pregnancy Distance and the Incidence of Anemia

Pregnancy Distance	Anemia		No Anemia		Total		P *Value*	OR (CI 95%)
	f	%	f	%	f	%		
Risk	29	85,3	5	14,7	34	100	0,001	7,089
No Risk	18	45	22	55.0	40	100		
Total	47	63,5	27	36,5	74	100		

Table 4 shows that of the 34 pregnant women who are at risk with the distance between their pregnancies, there are 29 pregnant women (85.3%) who have anemia, while of the 40 pregnant women who are not at risk with the distance between their pregnancies, there are 22 pregnant women (55.0%) who are not anemic. The results of statistical tests using *chi square* obtained a value of P = 0.001 (p < 0.05) which means that there is a significant relationship between the incidence of anemia in pregnant women and the distance of pregnancy. With value OR = 7,089 which means that pregnant women who have a risk with their pregnancy are seven times more likely to have anemia compared to pregnant women who have no risk with their pregnancy.

Table 5.
The Relationship of Knowledge of Pregnant Women with the Incidence of Anemia

Knowledge	Anemia		No Anemia		Total		P *Value*
	f	%	f	%	f	%	
Good	16	45,7	19	54,3	35	100	0,003
Less	31	79,5	8	20,5	39	100	
Total	47	63,5	27	36,5	74	100	

Table 5 shows that of the 35 pregnant women who had good knowledge, there were 19 pregnant women (54.3%) who did not have anemia, while of the 39 pregnant women who had less knowledge, there were 31 pregnant women (79.5%) who had anemia.

DISCUSSION

The relationship between nutritional status and the incidence of anemia in pregnant women

Based on the results of this study, it shows that there is no significant relationship between the incidence of anemia and nutritional status in pregnant women. The results of this study showed that most pregnant women who experienced undernourished status (SEZ) experienced anemia. Anemia in pregnancy is mostly caused by iron deficiency (iron deficiency anemia) due to lack of iron intake in the diet, reabsorption disorders, impaired use or too much iron out of the body. for example in bleeding (Astutik, 2018). In fact, pregnant women with SEZs tend to experience more anemia than no anemia. This is due to unbalanced patterns of food consumption and absorption during pregnancy. Nutrition greatly affects the nutritional state of a person. If pregnant women during their pregnancy do not consume balanced nutrition, both macronutrients and micronutrients, then pregnant women are at risk of experiencing nutritional disorders or chronic energy deficiency which can lead to anemia (Aminin et al, 2014).

Pregnant women who do not SEZ, tend to be less anemic than have anemia. Pregnant women who do not SEZ usually maintain the supply of nutrients consumed during their pregnancy by consuming foods that contain balanced nutrition, both macronutrients and micronutrients accompanied by consumption of Vitamin C so that pregnant women are less likely to experience anemia. But in the first trimester usually pregnant women experience vitamin C can increase stomach acid, therefore to help the absorption of iron accompanied by water consumption. If pregnant women who do not SEZ experience anemia, it may be caused by how to maintain iron in the diet is not accompanied by food consumption or consumption of water that can help iron absorption, because if caffeine consumption can inhibit iron absorption (Aminin et al, 2014). This research is not in line with Sinaga's research (2019) entitled Determinants of Anemia Incidence in Pregnant Women at the Tunggakjati Health Center, West Karawang District in 2019 which said there was a significant relationship between nutritional status and the incidence of anemia in pregnant women.

The Relationship of Coffee Consumption Habits with the Incidence of Anemia

Based on the results of this study, it shows that there is a significant relationship between the incidence of anemia and the habit of consuming coffee during pregnancy. The results of this study show that most pregnant women who often consume coffee experience anemia. Pregnant women who often consume coffee have the opportunity to experience anemia. Anemia in pregnancy is defined as a decrease in hemoglobin levels of less than 11g / dl during pregnancy in the first trimester and up to III and less than 10.5 g / dl during the post partum and second trimester. Blood will increase in pregnancy which is commonly called Hidremia or Hypervolemia. However, the increase in blood cells is less than the increase in

plasma so that blood thinning occurs. The ratio is plasma 30%, blood cells 18% and hemoglobin 19%. Increased blood in pregnancy begins as early as 10 weeks gestation and reaches its peak in pregnancy between 32 and 36 weeks (Betty, 2012).

So that iron absorption is not disturbed, you should provide a distance of consumption with foods that inhibit such as tea, coffee and chocolate. Although only a slight effect, tea, coffee, and chocolate can still inhibit iron absorption from supplements or other natural foods (Good, 2017). Pregnant women who consume caffeine will have a disruptive impact on fetal development, because fetal metabolism is not perfect. If pregnant women consume coffee excessively can increase the risk of pregnancy, especially in mothers who have a history of miscarriage, increase heart rate and metabolism, cause difficulty sleeping, cause feelings of anxiety and headaches, stimulate fluid in the stomach that causes heat or pain (heartburn), increase the frequency of urination because it is diuretic, cause calcium loss, cause the body difficult to absorb iron because of phenol content (Fathonah, 2016).

This research is in line with the research of Amanuounnyo, et al (2018) with the title of research Analysis of Factors Causing Anemia in Pregnant Women at Kairatu West Seram Health Center which said there was a significant relationship between the habit of drinking tea / coffee with the incidence of anemia in pregnant women. This study is not in line with research conducted by Purwaningtyas (2017) entitled Anemia Incidence Factors in Pregnant Women which said there was no significant relationship between the incidence of anemia and the habit of consuming coffee / tea.

Relationship of Adherence to Taking Fe Tablets with the Incidence of Anemia

Based on the results of this study, it shows that there is a significant relationship between the incidence of anemia and adherence to taking Fe tablets during pregnancy. The results of this study show that the results of this study show that anemia is greater in pregnant women who do not adhere to consuming Fe tablets. Pregnant women who do not comply with consuming Fe tablets are likely to experience anemia. Anemia is a symptom of an underlying condition, such as loss of blood components, inadequate elements or lack of nutrients needed for the formation of red blood cells, resulting in a decrease in the oxygen-carrying capacity of the blood. Anemia during the first trimester occurs when the hemoglobin level is less than 11g / dl or the hematrocyte level drops to below 37% (Proverawati, 2013). Giving blood-added tablets for pregnant women is needed to meet iron intake, in order to prepare for a healthy pregnancy and childbirth process. To prevent anemia given at least 90 (ninety) tablets during pregnancy. In order for the consumption of blood-added tablets to be more effective in preventing anemia, blood-added tablets should be taken at night before going to bed to reduce nausea. Blood tablets are taken with foods or drinks that contain Vitamin C such as fresh fruit, vegetables and fruit juices. In order for iron absorption in the body is better, do not drink blood-added tablets along with tea, coffee, milk, stomach ulcer medicine and calc tablets, because it will inhibit iron absorption (Ministry of Health, 2020).

This research is in line with research conducted by Ramadhani with the title of research Analysis of Factors Associated with the Incidence of Anemia in Third Trimester Pregnant Women at Kalijudan Health Center Surabaya 2018 which said that there is a significant relationship between adherence to taking iron tablets and the incidence of anemia in third trimester pregnant women at Kalijudan Health Center Surabaya. This study is also in line with other researchers conducted by Fajrin (2020) entitled Adherence to Iron (Fe) Consumption Against the Incidence of Anemia in Pregnant Women who said there was a significant

relationship between the incidence of anemia and compliance with iron (Fe) consumption in pregnant women.

The Relationship Between Pregnancy Distance and the Incidence of Anemia

Based on the results of this study, it shows that there is a significant relationship between the incidence of anemia and the distance of pregnancy. The results of this study showed that anemia was greater in mothers who were at risk with the spacing of their pregnancies. Mothers with a gap in pregnancy are at greater risk of anemia. Anemia in pregnancy can endanger the mother or fetus conceived, so anemia in pregnancy is called "potential danger to mother and child". The consequences that can occur if pregnant women experience anemia, among others, during pregnancy there can be miscarriage, premature partus, inhibition of fetal growth and development, ante partum hemorrhage. At the time of delivery can cause the occurrence of premature rupture of membranes (KPD), his disorders to displaced partus. In the puerperium can cause postpartum bleeding, puerperal infection, and reduced milk production (Setiawati et al. 2014).

According to BKKBN (2010) in Handayani (2017) the reason for not being allowed to get pregnant too close (< 2 years) is because the mother's condition is still not recovered and the fulfillment of nutritional needs is not optimal, it must meet the nutritional needs of the fetus it contains, and the distance between pregnancy too close can cause complications in pregnancy such as anemia, can inhibit the labor process such as impaired contraction strength, Abnormalities in the location and position of the fetus, can cause postpartum bleeding. Too close birth distance can cause anemia. One factor that can accelerate the occurrence of anemia in pregnant women is a short birth distance, because the mother's condition is still not recovered and the fulfillment of nutritional needs is not optimal, but she has to meet the nutritional needs of the fetus she contains (Prawirohardjo, 2014).

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This research is in line with Sinaga's research (2019) entitled Determinants of the Incidence of Anemia in Pregnant Women at the Tunggakjati Health Center, West Karawang District in 2019 which said that there is a significant relationship between the distance between pregnancy and the incidence of anemia during pregnancy. This research is also in line with research conducted by Ramadhani with the title of Research Analysis of Factors Associated with the Incidence of Anemia in Third Trimester Pregnant Women at Kalijudan Health Center Surabaya 2018 which said that there is a significant relationship between the distance of pregnancy and the incidence of anemia. According to the researchers' assumptions, pregnancy spacing can affect anemia in pregnancy The distance of pregnancy that is too close can cause anemia and disruption of the recovery of the mother's condition because she has not recovered from previous childbirth. Pregnant women who were respondents in this study had more risky pregnancy spacing or < 2 years, this was caused by a lack of knowledge about birth control to regulate the previous pregnancy spacing.

The Relationship of Knowledge of Pregnant Women with the Incidence of Anemia

Based on the results of this study, it shows that there is a significant relationship between the incidence of anemia and the knowledge of pregnant women about anemia. The results of this study showed that anemia was greater in mothers who were less knowledgeable. Anemia often occurs in pregnant women due to iron deficiency. Iron deficiency is caused by an increase in iron needs to meet the needs of the mother (prevent blood loss during labor) and fetal growth. Ironically, it is estimated that less than 50% of pregnant women do not have sufficient iron reserves during pregnancy, so the risk of iron deficiency or anemia increases due to pregnancy. Anemia is influenced by many factors, including gestational age, maternal

knowledge, family income, pregnancy spacing, parity, consumption of blood-boosting tablets (Fe), and history of the disease (Sengpiel et al, 2014).

Pregnant women who have less knowledge about anemia will behave negatively, while pregnant women who have good knowledge will behave positively, namely to prevent or treat anemia (Purbadewi, 2013). Pregnant women's need for iron (Fe) increased by 0.8 mg in the first trimester and increased sharply in the third trimester of 6.3 mg a day. That amount cannot be fulfilled only through food, let alone supported by insufficient knowledge of pregnant women about the increased need for iron (Fe) during pregnancy, causing anemia in pregnant women. Therefore, it is necessary to increase knowledge about anemia to pregnant women. Increasing knowledge about anemia can be done by means of counseling based on its characteristics so that counseling material can be accepted by all pregnant women even though the characteristics are different. For example, the provision of counseling to pregnant women with low education uses a different method from counseling carried out on highly educated pregnant women (Lalage, 2013).

This research is in line with Wulandari's research entitled The Relationship Between Knowledge Level and the Incidence of Anemia in Pregnant Women at the Jongaya Makassar Health Center in 2018 which said that it showed a significant relationship between the level of maternal knowledge and the incidence of anemia in pregnant women at the Jongaya Makassar Health Center. This research is also in line with research conducted by Hariati, et al (2019) entitled The Incidence of Anemia in Pregnant Women which says there is a meaningful relationship between the incidence of anemia and the knowledge of pregnant women.

CONCLUSION

There is a significant relationship between coffee consumption habits, adherence to consuming Fe tablets, pregnancy spacing, knowledge about anemia with the incidence of anemia in pregnant women. There was no significant relationship between nutritional status and the incidence of anemia in pregnant women.

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