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ABSTRAK : FAKTOR-FAKTOR YANG MEMPENGARUHI KEJADIAN ANEMIA PADA IBU

Latar Belakang: Anemia pada kehamilan memiliki efek negatif terhadap kesehatan ibu dan anak serta dapat meningkatkan risiko kematian ibu dan bayi. dampak anemia pada masa kehamilan bagi bayi yaitu meningkatkan risiko kelahiran prematur, bayi berat lahir rendah, IUFD, skor AFGAR rendah pada 5 menit pertama, IUGR, serta menyebabkan kejadian stunting. Prevalensi anemia di Indonesia pada ibu hamil yaitu 40,1%.
Tujuan: Untuk mengetahui faktor-faktor yang mempengaruhi kejadian anemia pada ibu hamil di Puskesmas Sukaraja Nuban Kabupaten Lampung Timur tahun 2022.
Metode: Jenis penelitian ini adalah kuantitatif dengan rancangan cross sectional. Populasi dalam penelitian ini adalah seluruh ibu hamil dengan usia kehamilan 37-42 minggu di Puskesmas Sukaraja Nuban tahun 2022 dengan jumlah 73 orang dengan sampel 48 orang. Teknik sampel yang digunakan yaitu accidental sampling. Analisis data dalam penelitian ini menggunakan univariat dan bivariat *(chi-square).*
Hasil: terdapat 15 (31,3 %) responden mengalami anemia, 29 (60,4%) responden dengan usia tidak berisiko, 33 (68,8%) responden dengan IMT tidak berisiko, 34 (70,8%) responden dengan paritas tidak berisiko, 37 (77,1%) responden dengan LILA berisiko, dan 28 (58,3%) responden mengkonsumsi suplemen zat besi dalam kategori tidak berisiko. Ada pengaruh usia (p=0,004), IMT (p=0,000), paritas (p=0,005), LILA (p=0,003), dan konsumsi suplemen zat besi *(p=0,000)* dengan kejadian anemia pada ibu hamil.
Kesimpulan: Ada pengaruh usia, IMT, paritas, LILA, dan konsumsi suplemen zat besi dengan kejadian anemia pada ibu hamil.

Kata Kunci   : Usia, IMT, paritas, LILA, Konsumsi Suplemen Zat Besi dan Anemia

ABSTRACT

Backgrounds:Anemia in pregnant women has negative effects on maternal and child health and can increase the risk of maternal and infant mortality. The effect of anemia during pregnancy for infants includes increasing the risk of premature birth, low birth weight, IUFD, low APGAR score in the first 5 minutes, IUGR, and stunting. The prevalence of anemia in pregnant women in Indonesia is 40.1%.

Purpose:To determine the factors affecting the incidence of anemia in pregnant women at Sukaraja Nuban in-patient public health center, Lampung Timur Regency in 2022.

Methods:This study is a quantitative study with a cross-sectional design. The population in this study were 73 pregnant women with the gestational age of 37-42 weeks at Sukaraja Nuban in-patient public health center in 2022. Then, the sample in this study was 48 pregnant women. The sampling technique used in this study was accidental sampling. The data analysis in this study used univariate and bivariate (chi-square test).

Results:This study showed that 15 (31.3%) pregnant women had anemia, 29 (60.4%) pregnant women were at an age of having no risk of anemia, 33 (68.8%) pregnant women had BMI of having no risk of anemia, 34 (70.8%) pregnant women had parity of having no risk of anemia, 37 (77.1%) pregnant women had MUAC in the risky category, and 28 (58.3%) pregnant women consumed iron supplements were categorized into the non-risk category. The results of the chi-square test showed that there was an effect of age (p-value= 0.004), BMI (p-value= 0.000), parity (p-value = 0.005), MUAC (p-value = 0.003) , and consumption of iron supplements (p-value = 0.000) with the incidence of anemia in pregnant women.

Conclusion:there was an effect of age, BMI, parity, MUAC, and consumption of iron supplements with the incidence of anemia in pregnant women.

Keywords   : Age, Anemia,BMI, Consumption of iron supplements,Parity, MUAC

INTRODUCTION

Anemia in pregnancy is one of the most common preventable causes of maternal morbidity and poor perinatal outcome. The main causes of anemia in pregnancy are major nutritional deficiencies, infections, and parasitic diseases. In addition, iron deficiency is often identified as a major contributor to anemia in pregnancy (Taner et al, 2015). The World Health Organization (WHO) defines anemia in pregnant women if the hemoglobin level is <11 g/dl (Chowdhury et al, 2015).

Anemia in pregnancy has a negative effect on maternal and child health and can increase the risk of maternal and infant mortality. The impact of anemia on mothers is that it causes fatigue, poor work capacity, impaired immune function, increased risk of heart disease, and leads to death. Several studies show that anemia during pregnancy accounts for 23% of indirect causes of maternal death in developing countries. While the impact of anemia during pregnancy for infants is increasing the risk of premature birth, low birth weight babies, IUFD, low AFGAR scores in the first 5 minutes, IUGR, and causing stunting (Stephen et al, 2018).

World Health Organization(WHO) shows that it is estimated that about 33% of people in the world suffer from anemia, with iron deficiency being considered the main cause, and anemia accounting for almost 9% year on year with disability problems. It is also estimated that worldwide 32 million pregnant women are anemic and 496 million non-pregnant women are anemic (WHO, 2020).

The prevalence of anemia in Indonesia in pregnant women according to the SKRT is still quite high, namely 40.1%. The results of the Basic Health Research show that 73.2% of women aged 15-49 years have received blood-supplement tablets containing iron-folic acid. However, the incidence of anemia in pregnant women still reaches 40 - 50%, meaning that 5 out of 10 pregnant women in Indonesia experience anemia (Kemenkes RI, 2018). Data obtained from the Lampung Provincial Health Office in 2018 the prevalence of anemia in pregnant women is still quite high, namely 100 pregnant women out of 500 pregnant women (33.29%). While the achievement target for anemia in pregnancy in Indonesia is 28% (Lampung Provincial Health Office, 2018).

The prevalence of anemia in pregnant women in East Lampung Regency in 2018 was 47.7% (East Lampung District Health Office, 2018). While at the Sukaraja Nuban Health Center in 2020 there were 51 (6.5%) pregnant women who experienced anemia and in 2021 there were 79 (10%) pregnant women who experienced anemia (Sukraraja Nuban Health Center, 2021).

Efforts to prevent and control anemia are carried out by the government through the provision of iron tablet supplementation with a daily dose of 1 item (60 mg iron and 0.400 mg folic acid) consecutively for at least 90 days during pregnancy. The government program that has been implemented can be seen in the coverage rate of giving blood supplement tablets (TTD) to pregnant women in Indonesia in 2018 amounting to 81.16%. This figure has not reached the 2018 Strategic Plan target which should be 95% (Ministry of Health, 2019).

Several risk factors for anemia in pregnancy are maternal age, BMI, parity, abortion, maternal education, employment status, family income, weight gain, smoking, alcohol, frequency of ANC, frequency of ultrasound, gestational age, iron supplementation, folic acid supplementation. (Taner et al, 2015). Meanwhile, according to Wulandari (2021) it shows that there is no significant relationship between the age of pregnant women and the incidence of anemia. There is a significant relationship between gestational distance and the incidence of anemia in pregnant women. There is a significant relationship between the nutritional status of pregnant women with the incidence of anemia. The most dominant factor with the incidence of anemia in pregnant women at the Ngaliyan Health Center Semarang in 2019 was the distance between pregnancies.

RESEARCH METHODS

In this research, the writer uses quantitative research,research design analytic observation method with cross sectional design,The population in this study was taken from the number of pregnant women with a gestational age of 37-42 weeks at the Sukaraja Nuban Health Center in 2022 with a total of 73 people and the sample in this study was 48 pregnant women with a gestational age of 37-42 weeks who came to the Sukaraja Nuban Health Center. sampling using accidental sampling. Analysis of univariate and bivariate data using Chi Square statistical test.

RESEARCH RESULTS
Univariate Analysis

Based on the table above, it is known that from 48 respondents, 15 (31.3%) respondents experienced anemia and 33 (68.8%) respondents did not experience anemia, 29 (60.4%) respondents were not at risk, 33 (68.8 %) %) respondents with BMI not at risk, 34 (70.8%) respondents with parity not at risk, 37 (77.1%) respondents with LILA at risk, and 28 (58.3%) respondents taking iron supplements in the no-risk category.

Table 1
Distribution of the frequency of anemia, age, BMI, parity, LILA, and consumption of iron supplements in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

Variable	N	Anemia		No anemia	
		n	%	n	%
Age					
at risk	19	11	57.9	8	42.1
No risk	29	4	13.8	25	86.2
BMI					
at risk	15	12	80.0	3	20.0
No risk	33	3	9.1	30	90.9
parity					
at risk	14	9	64.3	5	35.7
No risk	34	6	17.6	28	82.4
LILA					
at risk	11	8	72.7	3	27.3
No risk	37	7	18.9	30	81.1
Consumption of Iron Supplements					
at risk	20	13	65.0	7	35.0
No risk	28	2	7.1	26	92.9

Bivariate Analysis

Table 2
The effect of age with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

Age	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	N	%	N	%	N	%		
at risk	11	57.9	8	42.1	19	100.0	0.004	8,594
No risk	4	13.8	25	86.2	29	100.0		(2,132 -34,643)

Based on the table above, it is known that from 19 respondents at risky age, 11 (57.9%) respondents had anemia and 8 (42.1%) respondents did not. Meanwhile, from 29 respondents with no risk age, 4 (13.8%) respondents had anemia and 25 (86.2%) respondents did not.

The results of the Chi square test obtained p value of 0.004 <0.05 meaning that there is an influence of age with the incidence of anemia in the Sukaraja Nuban Health Center, East Lampung Regency in 2022. The results of OR = 8.594 means that respondents with age <20 years or >35 years are at risk of 8.594 times to experience anemia

Table 3
The effect of BMI with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center East Lampung Regency in 2022

BMI	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	n	%	n	%		
at risk	12	80.0	3	20.0	15	100.0	0.000	40,000
No risk	3	9.1	30	90.9	33	100.0		(7,058 – 226,686)

Based on the table above, it is known that from 15 respondents with BMI at risk, 12 (80.0%)

respondents had anemia and 3 (20.0%) respondents did not. Meanwhile, from 33 respondents with BMI

not at risk, 3 (9.1%) respondents had anemia and 30 (90.9%) respondents did not.

The results of the Chi square test obtained p value 0.000 <0.05, meaning that there is an influence of BMI with the incidence of anemia in the Sukaraja

Nuban Health Center, East Lampung Regency in 2022. The OR = 40,000 means that respondents with BMI are at risk 40 times more likely to experience anemia.

Table 4
Effect of parity with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center East Lampung Regency in 2022

Parity	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	N	%	n	%		
at risk	9	64.3	5	35.7	14	100.0	0.005	8,400
No risk	6	17.6	28	82.4	34	100.0		(2,062 - 34,217)

Based on the table above, it is known that of the 14 respondents with parity at risk, 9 (64.3%) respondents had anemia and 5 (35.7%) did not. Meanwhile, from 34 respondents with parity not at risk, 6 (17.6%) respondents had anemia and 28 (82.4%) did not.

Chi square test results obtained p value 0.005 <0.05, meaning that there is a parity effect with the incidence of anemia in the Sukaraja Nuban Health Center, East Lampung Regency in 2022. The OR = 8,400 means that respondents with parity at risk have an 8,400 times chance of experiencing anemia.

Bivariate Analysis

Table 5
The effect of nutritional status (LILA) with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

LILA	Incidence of Anemia				Total		P Value	OR
	Anemia		No anemia					
	n	%	N	%	n	%		
at risk	8	72.7	3	27.3	11	100.0	0.003	11,429
No risk	7	18.9	30	81.1	37	100.0		(2,399 – 54,454)

Based on the table above, it is known that of the 11 respondents with LILA at risk, 8 (72.7%) respondents had anemia and 3 (27.3%) did not. Meanwhile, from 37 respondents with LILA not at risk, 7 (18.9%) respondents experienced anemia and 30 (81.1%) respondents did not experience anemia.

The results of the Chi square test obtained p value of 0.003 <0.05, meaning that there is an influence of LILA with the incidence of anemia in the Sukaraja Nuban Health Center, East Lampung Regency in 2022. The OR = 11.429 means that respondents with LILA are at risk of 11.429 times having anemia.

Table 6
The effect of consuming iron supplements with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

Consumption of Iron Supplements	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	n	%	n	%		
at risk	13	65.0	7	35.0	20	100.0	0.000	24,143
No risk	2	7.1	26	92.9	28	100.0		(4,381 – 133,042)

Based on the table above, it is known that from 20 respondents who did not regularly consume

iron supplements, 13 (65.0%) respondents had anemia and 7 (35.0%) respondents did not

experience anemia. Meanwhile, of the 28 respondents who regularly consume iron supplements, 2 (7.1%) respondents experienced anemia and 26 (92.9%) respondents did not experience anemia.

The results of the Chi square test obtained p value 0.000 <0.05, meaning that there is an effect of consuming iron supplements with the incidence of anemia in the Sukaraja Nuban Health Center, East Lampung Regency in 2022. The OR = 24,143 means that respondents with respondents who do not comply with consuming iron supplements are at risk of 24,143 times for anemia.

DISCUSSION
Univariate Analysis
Frequency distribution of the age of pregnant women at the Sukaraja Nuban Health Center, East Lampung Regency in 2022

The results of this study indicate that from 48 respondents, 19 (39.6%) respondents were at risk age and 29 (60.4%) respondents did not experience at risk age.

Age is defined as the length of time living or existing since birth or held until now. The causes of maternal death from reproductive factors include maternal age or maternal age. In the period of healthy reproduction, it is known that the safe age for pregnancy and childbirth is 20-35 years. Maternal mortality in pregnant women and childbirth at the age of under 20 years was 2 to 5 times higher than maternal deaths that occurred at the age of 20 to 35 years. Maternal mortality increases again after 35 years and over (Prawirohardjo, 2016).

Pregnant women at an age that is too young, namely <20 years old, will easily experience food competition between the fetus and the mother who is still in the process of growth which can result in impaired growth for the fetus due to the hormonal growth process that occurs during pregnancy. Pregnant women at a young age are also relatively not ready to pay attention to the environment needed for fetal growth, as well as growth for themselves. In developing countries, about 10-20% of babies are born to mothers in their teens (Demnoeche and Moulesshoul, 2011).

Pregnant women over the age of 35 years tend to experience anemia due to the influence of decreased iron reserves in the body due to the fertilization period. The first pregnancy in women aged over 35 years will also have a risk of complications in pregnancy and childbirth, due to a decrease in the functions of the reproductive organs (Proverawati, 2013).

The results of this study are in line with research conducted by Tampubolon (2021) which showed that the majority of pregnant women with anemia aged between 20-35 years were 25 respondents (81%), still had pregnancies at the age of 20 years by 13%, and age 35 years by 6%. According to researchers, maternal age is one factor in the occurrence of anemia in pregnant women. This is because the age of the mother affects the maturity of the reproductive organs so that during pregnancy there is no disturbance to the fetus. Women who are pregnant at the age of 35 years are at risk of bleeding during childbirth at that age, the reproductive organs have decreased in function. Bleeding that occurs at the time of delivery if not handled properly it will cause anemia. In addition, maternal age is related to a person's mindset.

Frequency distribution of BMI of pregnant women in Sukaraja Nuban Health Center, East Lampung Regency in 2022

The results of this study indicate that from 48 respondents, 15 (31.3%) respondents experienced a risky BMI and 33 (68.8%) respondents did not experience a risky BMI.

Body Mass Index (BMI), which is body weight divided by height squared, is influenced by ethnicity and genetics and can also be used to measure adiposity and energy balance (Arumsari, 2012). Nutritional consumption greatly affects a person's BMI which is the main capital for individual health. Incorrect or inappropriate nutritional intake for pregnant women will cause health problems. The term malnutrition (malnutrition) is defined as pregnant with anemia, women with low nutritional status or commonly said to be low BMI, have a negative effect on pregnancy outcomes such as anemia (Hariyani, 2011).

This study is in line with research conducted by Paramudita (2020) which showed that most of the respondents (79.63%) were in the normal category based on BMI/U.

According to researchers, a low BMI value means that the nutritional status of pregnant women has decreased, based on the existing theory that poor nutritional status can cause red blood levels in the body to decrease so that it can cause anemia in pregnant women. Lack of nutritional status in mothers can be caused because mothers have dietary restrictions such as not eating fish during pregnancy so that maternal nutritional intake is not met.

Distribution of the parity frequency of pregnant women at the Sukaraja Nuban Health Center, East Lampung Regency in 2022

The results of this study indicate that from 48 respondents, 14 (29.2%) respondents experienced risk parity and 34 (70.8%) respondents did not experience risk parity.

Parity is the number of deliveries that have been experienced by the mother. Parity 2-3 is the safest parity in terms of maternal mortality (maternal death). Based on this theory, the results of the majority of mothers with parity 1-3 are still included in parity which tends to be safe for pregnancy and childbirth. The risk for experiencing disturbances in pregnancy and childbirth at a higher parity is related to the health of the reproductive organs that have decreased due to the previous pregnancy and delivery process, the higher the parity, the greater the risk of experiencing complications related to the condition of the reproductive organs (Manuaba, 2014).

Associated with anemia, a mother who gives birth frequently has a risk of experiencing anemia in her next pregnancy if she does not pay attention to nutritional needs, because during pregnancy the nutrients will be divided for the mother and for the fetus she contains. Mothers who have high parity generally have an increased susceptibility to bleeding and maternal nutritional depletion (Manuaba, 2014).

This study is in line with the research conducted by Sari et al (2022) which showed that most of the respondents were mothers with no risk parity (1-3) as many as 253 people (81.4%) from a sample of 273 people.

According to the researcher, some of the conditions of pregnant women with parity, mostly with parity without risk, may be related to the age of pregnant women, most of whom are also at the age of 20-35 years, where at that age in general, most mothers have only had children 1-3. children. Parity also determines the mother's experience during pregnancy, mothers who have been pregnant more than once tend to have good experiences in maintaining their pregnancy so that complications such as anemia do not occur.

Distribution of the frequency of nutritional status (LILA) in Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

The results of this study indicate that out of 48 respondents, 11 (22.9%) respondents experienced risky LILA and 37 (77.1%) respondents did not experience risky LILA.

Nutritional status is the state of the body as a result of food consumption and use of nutrients. Nutritional status is a picture of the balance between care and nutritional needs of a person. If the intake is appropriate then it is called good nutrition, if it is lacking it is called undernutrition and if the intake is more then it is called over nutrition (Asyirah, 2012).

Pregnancy causes an increase in energy metabolism, therefore the need for energy and other nutrients increases during pregnancy, especially the need for iron. This is because the volume of blood in the body increases by 35%. This is equivalent to 450mg of iron for producing red blood cells. If the need for iron is not met, it will cause anemia in pregnancy (Asyirah, 2012).

This study is in line with research conducted by Oktavia (2021) which showed that most pregnant women had normal nutritional status, namely 75 respondents (69.4%), and a small proportion of pregnant women had abnormal nutritional status, namely 33 respondents (30.6%). %). According to the researcher's assumptions, nutritional status is a balance between the amount of nutrient intake and the amount needed (by the body used for biological functions (activity, physical growth, development, health maintenance, etc.). The lower the nutritional status of pregnant women, the higher the nutritional status. risk of anemia The incidence of anemia is basically directly influenced by the pattern of daily food consumption.

Distribution of the frequency of iron supplement consumption at the Sukaraja Nuban Health Center, East Lampung Regency in 2022

The results of this study indicate that from 48 respondents, 20 (41.7%) respondents did not comply with taking iron supplements and 28 (58.3%) respondents complied with taking iron supplements.

Pregnant women are given iron tablets every day or at least 90 tablets during pregnancy (Kemenkes RI, 2014). The aim of the government in Indonesia to conduct an iron supplementation program is to prevent anemia in pregnancy. The iron absorbed from food is not sufficient to meet the needs of the mother and fetus, so additional iron intake is needed through iron tablets. However, the effectiveness of this program is often hampered by the compliance of pregnant women. Pregnant women who are not obedient in consuming iron tablets mean they are not able to meet the needs of iron in pregnancy. As a result, the risk of anemia in pregnancy, especially iron deficiency anemia, increases. Anemia can indirectly cause maternal death.

This study is in line with research conducted by Erwin (2017) which showed that out of 52 pregnant women who obediently took iron tablets as recommended by health workers, only 11 people (21%), while 41 people (79%).

According to the researcher's assumption, pregnant women who are not obedient in consuming iron tablets mean they are unable to meet the iron needs of pregnancy. As a result, the risk of anemia in pregnancy, especially iron deficiency anemia, increases. Anemia can indirectly cause maternal death. Mothers who are not obedient to taking these Fe tablets because they cannot take medicine, but mothers also have poor knowledge so they do not look for other alternatives that can increase Hb levels..

Bivariate Analysis
The effect of age with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

The results of this study indicate that of the 19 respondents with age at risk, 11 (57.9%) respondents had anemia and 8 (42.1%) did not. Meanwhile, from 29 respondents with no risk age, 4 (13.8%) respondents had anemia and 25 (86.2%) respondents did not.

The results of the Chi square test obtained p value of 0.004 <0.05, meaning that there is an influence of age with the incidence of anemia in the Sukaraja Nuban Health Center, East Lampung Regency in 2022. The OR = 8.594 means that respondents with age <20 years or >35 years are at risk of 8.594 times to experience anemia.

The results obtained are also supported by the theory put forward by Amirrudin & Wahyuddin (2014) which states that the age factor is a risk factor for the incidence of anemia in pregnant women. A mother's age is related to a woman's reproductive condition. A healthy and safe reproductive age is the age of 20-35 years. Pregnant women at risky age related to reproductive organ function that is not optimal or not ready to face pregnancy, this will affect pregnancy and mothers are very at risk of experiencing various pregnancy complications, one of which is anemia. Pregnancy at < 20 years and >

The younger and older the age of a pregnant mother will affect the nutritional needs needed. Lack of fulfillment of nutrients during pregnancy, especially at the age of less than 20 years and more than 35 years will increase the risk of anemia (Chowdhury HA et al, 2015). This results in a lack of attention to the fulfillment of nutritional needs during pregnancy. At the age of < 20 years, the condition of a woman's body is not ready to accept pregnancy because it is still growing. Therefore, pregnant women still need nutrients for their growth and nutrition for their own pregnancy is reduced so that they are prone to anemia. Age of pregnant women >

This study is in line with research conducted by Yunida et al (2022) which showed that there was a relationship between the age of pregnant women and the incidence of anemia, with the chance of anemia in pregnant women at risk of 2.820 times compared to pregnant women at non-risk ages.

According to the researcher, in this study the results obtained were mothers with age who were not at risk but still experienced anemia and mothers with age at risk but did not experience anemia, where this is related to conditions where age is indeed one of the factors that determine the health status of pregnant women. however, in the case of anemia, age is not the only risk factor for the emergence of anemia, but there are other factors such as parity, nutritional status, and other factors. So that the age of the mother who is not at risk but does not experience anemia can be made possible because the need for Fe intake is well met so that the mother does not experience anemia.

The effect of BMI with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

The results of this study indicate that from 15 respondents with BMI at risk, 12 (80.0%) respondents had anemia and 3 (20.0%) respondents did not. Meanwhile, from 33 respondents with BMI not at risk, 3 (9.1%) respondents had anemia and 30 (90.9%) respondents did not.

The results of the Chi square test obtained p value 0.000 <0.05, meaning that there is an influence of BMI with the incidence of anemia in the Sukaraja Nuban Health Center, East Lampung Regency in 2022. The OR = 40,000 means that respondents with BMI are at risk 40 times more likely to experience anemia.

Nutritional status has a positive correlation with hemoglobin concentration, meaning that the worse a person's nutritional status, the lower the person's hemoglobin level (Pasalina, 2019). Underweight is associated with deficiencies of macronutrients and micronutrients including iron. In women with low BMI, the intake of macronutrients and micronutrients is inadequate. The main macronutrient that plays a role in iron metabolism is protein. Protein deficiency will cause impaired iron transport and increase the risk of infection. Micronutrients that play a role in the absorption and metabolism of iron include protein, iron, folic acid, vitamin C, vitamin B12, vitamin A, zinc and copper.

Deficiency of these macronutrients and micronutrients leads to impaired absorption and metabolism of iron due to insufficient amount of iron needed.

In addition, overweight and obesity are also associated with anemia. Overweight/obesity is associated with anemia due to fat accumulation in adipose tissue. This fat accumulation can reduce iron absorption. Fat tissue in obesity causes chronic inflammation which is associated with the expression of proinflammatory cytokines, including Interleukin-6 (IL-6) and Tumor Necrosis Factor-α (TNF-α) (Lopez et al, 2011).

This study is in line with research conducted by Etik W., (2015) on the relationship between nutritional status and the incidence of anemia in third trimester pregnant women at the Pleret Health Center Bantul and research by Triwidiyantari D., (2011) on the relationship between nutritional status and anemia in pregnant women. third trimester at the Garuda Health Center in Bandung.

According to the researcher, the nutritional status of pregnant women with the incidence of anemia during pregnancy can be monitored by the BMI value of pregnant women. In this study, a low BMI value can affect the Hb status of pregnant women so that the nutritional status of pregnant women is proven to affect the incidence of anemia in pregnant women. Pregnant women who have a low BMI but do not experience anemia can occur because BMI is not the only factor that affects anemia. Pregnant women with low BMI but obediently consume Fe tablets, regularly consume foods containing iron and vitamins and routinely perform ANC will avoid anemia. However, pregnant women whose BMI is normal but have anemia can also be caused by other factors in the mother that can trigger anemia such as non-adherence to consuming Fe tablets, pregnancy at risky ages,

The effect of parity with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

The results of this study indicate that of the 14 respondents with parity at risk, 9 (64.3%) respondents had anemia and 5 (35.7%) did not. Meanwhile, from 34 respondents with parity not at risk, 6 (17.6%) respondents had anemia and 28 (82.4%) did not.

Chi square test results obtained p value 0.005 <0.05, meaning that there is a parity effect with the incidence of anemia in the Sukaraja Nuban Health Center, East Lampung Regency in 2022. The OR = 8,400 means that respondents with parity at risk have an 8,400 times chance of experiencing anemia.

Mothers who have high parity have a greater risk of developing anemia. A mother who often gives birth has a risk of experiencing anemia in her next pregnancy, if she does not pay attention to nutritional needs, because during pregnancy the nutrients will be divided for the mother and the fetus she contains. Parity > 3 is a factor in anemia. This is because too often pregnant can deplete the mother's body's nutrient reserves. This is also because mothers with high parity have an increased risk for bleeding. Too often pregnancy can also deplete the mother's body's nutritional reserves and the more often a woman gives birth, the greater the risk of blood loss and the impact on decreasing HB levels. Besides that,

Mothers who have high parity generally have an increased susceptibility to bleeding and maternal nutritional depletion, compared to non-pregnant states, each pregnancy increases the risk of bleeding before, during, and after delivery. Higher parity exacerbates the risk of bleeding. On the other hand, a woman with high parity has a large size of the number of children which means the high level of sharing available food and other family resources can interfere with the food intake of pregnant women (Al-Farsi et al, 2011).

This study is in line with research conducted by Jasmi (2016) which showed that of 145 pregnant women who had a high risk of developing anemia, 47 pregnant women (87%). Meanwhile, 30 pregnant women with low risk parity experienced fewer anemia as many as 30 pregnant women (32.9%). The results of statistical tests using chi square obtained a value of p = 0.000 (p <0.05) which means that there is a relationship between parity and the incidence of anemia in pregnant women, with an OR value of 13,652 which means that parity pregnant women who are at high risk are 13 times more likely to experience anemia compared to pregnant women with low risk parity.

According to the researcher, there are pregnant women with parity who are not at risk but still have anemia and mothers with parity who are at risk but do not experience anemia, where this is the same as age where parity is also not the only factor associated with anemia but there are many other related factors. with anemia in pregnant women. In women with parity at risk but not experiencing anemia, it is possible because the nutritional intake of the mother during pregnancy is well met so that the mother does not suffer from anemia and in parity mothers who are not at risk but still have anemia, it is also possible because the intake of nutrients, especially Fe, is lacking so that although with parity who are not at risk but still have the possibility of developing anemia.

The effect of nutritional status (LILA) with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

The results of this study indicate that of the 11 respondents with LILA at risk, 8 (72.7%) respondents had anemia and 3 (27.3%) did not. Meanwhile, from 37 respondents with LILA not at risk, 7 (18.9%) respondents experienced anemia and 30 (81.1%) respondents did not experience anemia.

The results of the Chi square test obtained p value of 0.003 <0.05, meaning that there is an influence of LILA with the incidence of anemia in the Sukaraja Nuban Health Center, East Lampung Regency in 2022. The OR = 11.429 means that respondents with LILA are at risk of 11.429 times having anemia.

Nutritional status is strongly influenced by food consumption and a person's health condition. One indicator of measuring nutritional status in Indonesia is to measure the Upper Arm Circumference (LILA). The LILA measurement aims to assess whether a person has Chronic Energy Deficiency (KEK) with an LILA threshold of 23.5. Pregnant women who experience CED and anemia have a greater risk of giving birth to babies with low birth weight (LBW), death during childbirth, bleeding, and difficult postpartum because of weakness (Oktavia, 2021).

In fact, pregnant women with SEZ tend to experience anemia more than those without anemia. This is due to the pattern of consumption and absorption of food that is not balanced during pregnancy. Nutrition greatly affects a person's nutritional state. If pregnant women during pregnancy do not consume balanced nutrition, both macronutrients and micronutrients, then pregnant women are at risk of experiencing nutritional disorders or chronic energy deficiency can occur which can lead to anemia (Larasati, 2018).

Pregnant women who do not have SEZ tend to be less likely to have anemia than those who have anemia. Pregnant women who are 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 the consumption of Vitamin C so that pregnant women are less likely to experience anemia. If pregnant women who do not have SEZ experience anemia, it may be due to how to maintain iron in food not accompanied by food consumption or water consumption that can help iron absorption, because caffeine consumption can inhibit iron absorption (Larasati, 2018).

This study is in line with research conducted by Mutiarasari (2019) which showed that there was a relationship between nutritional status and the incidence of anemia, where pregnant women with good nutritional status tended to be at risk of not being anemic as much as 6,500 times compared to less nutritional status.

According to the researcher's assumptions, nutritional status is the end result of a balance between the food consumed and the body's needs. If the nutritional intake is appropriate then it is called good nutrition, if the intake is less it is called undernutrition and if the intake is more it is called excess nutrition. The nutritional status of pregnant women is one of the factors that must be considered. Low nutritional status can cause anemia which results in low physical quality and affects reproductive efficiency. The higher a person's nutritional status, the better his physical condition, thus indirectly affecting reproductive efficiency. However, pregnant women with good nutritional status can also experience anemia if they do not comply with taking Fe tablets or are influenced by other factors such as risky parity or the distance between pregnancies is too close.

The effect of consuming iron supplements with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022

The results of this study showed that of the 20 respondents who did not regularly consume iron supplements, 13 (65.0%) respondents had anemia and 7 (35.0%) did not. Meanwhile, of the 28 respondents who regularly consume iron supplements, 2 (7.1%) respondents experienced anemia and 26 (92.9%) respondents did not experience anemia.

The results of the Chi square test obtained p value 0.000 <0.05, meaning that there is an effect of consuming iron supplements with the incidence of anemia in the Sukaraja Nuban Health Center, East Lampung Regency in 2022. The OR = 24,143 means that respondents with respondents who do not comply with consuming iron supplements are at risk of 24,143 times for anemia.

Anemia in pregnancy is the most common anemia due to iron deficiency. This deficiency can be caused by lack of entry of iron elements with food, because of impaired absorption, impaired use, or because of too much iron that comes out, for example in bleeding. Women who are pregnant or breastfeeding, need very high iron so it needs to be prepared as early as possible since adolescence. For pregnant women, take 1 tablet daily for at least 90

days of pregnancy and 40 days after giving birth (Fadlun, 2012).

If the reserve supply is minimal, then each pregnancy will deplete the body's iron supply and eventually cause anemia in the next pregnancy. In pregnancy, relatively anemia occurs because pregnant women experience hemodilution (dilution) with an increase in volume of 30% to 40%, which peaks at 32 to 34 weeks of gestation. The number of blood cells increases by 18 to 30% and hemoglobin by about 19%. If the mother's hemoglobin before pregnancy is around 11 g% with hemodilution, it will result in physiological pregnancy anemia, and the mother's Hb will be 9.5 to 10 g% (Manuaba 2014).

If the Fe supplement is given according to the standard of antenatal care, which is 90 tablets during pregnancy and a good diet, it will have a significant effect on the Hb status of pregnant women. In the sense that the increase in Hb levels of pregnant women increased significantly, from being anemic to being no longer anemic. So great is the effect of Fe tablets on the health of pregnant women in preventing anemia, therefore when pregnant women carry out pregnancy checks, the role of health workers, especially midwives, is needed to further improve counseling programs repeatedly for pregnant women and their closest families, such as husbands and other people. old. It is intended that there are other individuals who provide a stimulus to pregnant women to consume iron tablets regularly at least 90 tablets during pregnancy (Manuaba, 2014).

This study is in line with research conducted by Maternity (2014) which showed that there was a significant relationship between the consumption of Fe tablets and the incidence of anemia at BPS Nengah Astiti Sidorejo, East Lampung in 2013. times greater for those affected by anemia compared to respondents who consumed 90 tablets.

According to the researcher's assumption, pregnant women who consume Fe tablets obediently and non-compliantly are motivated by Hb results where pregnant women who obediently consume Fe tablets have most of their Hb levels above the standard. However, pregnant women who do not experience anemia must still comply with taking Fe tablets. There are several factors that cause mothers to disobey Fe tablets, such as mothers who do not like taking drugs, mothers often forget to take Fe tablets or mothers who deliberately do not take Fe tablets because they feel that their hemoglobin levels are normal. However, pregnant women who obediently consume Fe tablets can also experience anemia if the mother does not maintain the mother's diet during pregnancy.

CONCLUSION

1. The distribution of the frequency of the age of pregnant women at the Sukaraja Nuban Health Center, East Lampung Regency in 2022, found 19 (39.6%) respondents experienced a risky age and 29 (60.4%) respondents did not experience a risky age.

2. The distribution of the frequency of BMI of pregnant women at the Sukaraja Nuban Health Center, East Lampung Regency in 2022 found 15 (31.3%) respondents experienced a risky BMI and 33 (68.8%) respondents did not experience a risky BMI.

3. The distribution of the parity frequency of pregnant women at the Sukaraja Nuban Health Center, East Lampung Regency in 2022 14 (29.2%) respondents experienced risk parity and 34 (70.8%) respondents did not experience risk parity.

4. Distribution of the frequency of nutritional status (LILA) at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022 11 (22.9%) respondents experienced risky LILA and 37 (77.1%) respondents did not experience risky LILA.

5. Distribution of the frequency of iron supplement consumption at the Sukaraja Nuban Health Center, East Lampung Regency in 2022 20 (41.7%) respondents did not comply with taking iron supplements and 28 (58.3%) respondents complied with taking iron supplements.

6. There is an effect of age with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022 with a p value of 0.004.

7. There is an effect of BMI with the incidence of anemia in pregnant women at the Sukaraja Nuban Health Center, East Lampung Regency in 2022 with a p value of 0.000

8. There is an effect of parity with the incidence of anemia in pregnant women at the Sukaraja Nuban Health Center, East Lampung Regency in 2022 with a p value of 0.005

9. There is an influence of nutritional status (LILA) with the incidence of anemia in pregnant women at the Sukaraja Nuban Health Center, East Lampung Regency in 2022 with a p value of 0.003

10. There is an effect of consuming iron supplements with the incidence of anemia in pregnant women at the Sukaraja Nuban Public Health Center, East Lampung Regency in 2022 with a p value of 0.000

SUGGESTION
For Pregnant Women
Pregnant women should always check the health of the mother and her womb regularly during pregnancy and routinely follow the counseling delivered by health workers. In addition, mothers can seek information about how to deal with anemia in pregnant women and do not trust the culture that can hinder nutritional adequacy in pregnant women.

For Puskesmas Sukaraja Nuban
For health workers who are at the Puskesmas to be able to continuously improve their knowledge and skills to detect risk factors in pregnant women, especially pregnant women with anemia, health workers are also required to be able to provide appropriate information about risk factors in pregnant women and how to correct detection of risk factors for pregnant women and their families as well as maximum utilization of health care facilities in the vicinity such as maternity homes, polindes, puskesmas and other health facilities that are safe for pregnancy and childbirth.

For Malahayati University Bandar Lampung
This research is expected to add to the scientific literature in the development of science as well as additional literature or information in conducting further research, especially the factors related to the incidence of anemia in pregnant women.

For Further Researchers
It is hoped that further researchers will be able to examine other variables that are more varied and include broader research with different research methods, especially those related to the incidence of anemia in pregnant women so that research can continue to be developed.

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