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Factors Associated with the Incidence of Anemia in Pregnant Women at the Sambau Nongsa Community Health Center Batam in 2021

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ABSTRACT

Anemia in pregnancy is the condition of the mother with hemoglobin levels below 11 g/dL in the 1st and 3rd trimesters <10.5 g/dL in the 2nd trimester, this limit value and the difference with the condition of non-pregnant women is due to hemodilution, especially in the 2nd trimester. Aims to determine the relationship between age, gestational age, parity and KEK status with the incidence of anemia in pregnant women at the Sambau Nongsa Community Health Center Batam in 2021. This study used a cross-sectional design. The population in this study were all pregnant women who visited the Sambau Nongsa Community Health Center Batam 267 people and a sample of 82 people. Data analysis using Chi square test. The results showed that there was a relationship between age (p=0.043), gestational age (p=0.037), parity (p=0.035) and KEK status (p=0.000) with the incidence of anemia in pregnant women at the Sambau Nongsa Community Health Center Batam in 2021. It is recommended that every mother pregnant women are advised to frequent antenatal care (ANC) visits and seek information about the dangers of pregnancy, considering the incidence of anemia can occur in pregnancy and to prevent pregnant women should consume iron (Fe) tablets during pregnancy regularly and consume healthy and nutritious foods.

Keywords: Age, Gestational Age, Parity, KEK Status, Anemia, Pregnant Women

INTRODUCTION

Some conditions that can cause unhealthy conditions for pregnant women include handling complications, anemia, pregnant women with diabetes mellitus, hypertension, malaria, and four too young (too young 35 years, too close 2 years apart and too many children >3 years). In improving public health status, the indicator to be achieved is a decrease in the maternal mortality rate from 359 per 100,000 live births in 2012 to 306 per 100,000 live births in 2019 (Kementerian Kesehatan, 2019).

Anemia is the biggest public health problem in the world, especially for women of reproductive age. The consequences of anemia are fatigue, weakness, decreased capacity/ability or work productivity. The causes of anemia in pregnancy in general are due to iron deficiency, folic acid, and acute bleeding. Lack of nutritional intake will also cause failure of physical growth and intellectual development, reduce work productivity and reduce body resistance which can increase morbidity and mortality.

During pregnancy the body will experience significant changes, one of which is the amount of blood in the body increases by about 20-30%, thus requiring an increase in the need for iron and vitamins to make hemoglobin (Hb). When pregnant, the mother's body will make more blood to share with her baby. The body requires up to 30% more blood than before pregnancy.

The incidence of anemia in the world ranks third with the prevalence of anemia in pregnant women 74%. The prevalence of anemia in Asia varies, including Thailand 39% and India 85.5%.

According to World Health Organization 40% of maternal deaths in developing countries are related to anemia in pregnancy, based on basic health research in 2018 there was an increase in the prevalence of pregnant women with anemia from 2013 from 37.1 to 48.9.

The results of Riskesdas 2018 state that in Indonesia 48.9% of pregnant women experience anemia. As many as 84.6% of anemia in pregnant women occurred in the age group 15-24 years. To prevent anemia, every pregnant woman is expected to get a minimum of 90 blood-added tablets during pregnancy. The coverage of giving blood-added tablets to pregnant women in Indonesia in 2019 was 64.0%. This figure has not reached the 2019 strategic plan target of 98%. The province with the highest coverage of giving blood tablets to pregnant women was North Sulawesi (100.1%), while the province with the lowest coverage was South Sulawesi (1.7%). There is one province that has exceeded the Renstra target for 2019 and one province that did not report data on the coverage of giving blood tablets to pregnant women is West Papua.

Anemia is one of the most common health problems in women, especially pregnant women. In Indonesia, pregnant women are said to have anemia if the Hb level in the blood is < 11.0 g/dL. Lack of oxygen in the uterus will cause the uterine muscles not to contract adequately so that uterine atony can arise which results in postpartum hemorrhage (Manuaba, 2014).

Research by Getahun et al. (2017) on factors related to anemia in pregnant women who underwent ANC examinations in Southern Ethiopia showed that the factors that were significantly related to the incidence of anemia in pregnant women were the mother's residence, history of excessive bleeding during menstruation, ANC visits, and gestational interval. Research Derso et al. (2017) regarding the magnitude and factors associated with anemia in pregnant women in the Dera Region, Northwest Ethiopia, showed that the risk factors that increase the incidence of anemia gravidarum are residence, parity, economic status, adherence to iron tablets consumption and maternal KEK status.

The case of pregnant women with anemia at the Nongsa Community Health Center Batam experienced a significant increase from 2019 to 2020. In 2019 the prevalence of anemia in pregnant women at the Nongsa Batam Community Health Center was 20%, and in 2020 there was an increase of 20%. When grouped pregnant women with Hb 8-11mg/dL as much as 38.2% and with Hb <8 mg/dL as much as 1.90%. Based on the results of this initial survey, the researchers wanted to know the factors related to the incidence of anemia in pregnant women at the Sambau Nongsa Community Health Center Batam.

The general purpose of the study was to determine the factors related to the incidence of anemia in pregnant women at the Sambau Nongsa Community Health Center Batam in 2021.

RESEARCH METHODS

Research Methods In conducting research we need to follow the rules or rules that apply, so that the research results obtained can be said to be valid. The research method is basically a scientific way to obtain data with a specific purpose and use (Octiva et al., 2021). The purpose of the scientific method is that research activities rely on scientific characteristics, namely rational, systematic and empirical.

Rational means that the research activities carried out make sense, so that they can be reached by human reasoning. Empirical means that the method or steps taken can be observed by the human senses, so that other people can observe and know the method or steps used. Systematic, means the process used in research using certain steps that are logical (Pandiangan et al., 2021).

This research is an analytic study with a cross sectional study design. Broadly speaking, cross sectional is a study design that discusses the correlation between exposure and disease by examining both

statuses simultaneously at the same time (Pandiangan, 2015). A study or cross-sectional study is a research that when conducting the design of data collection is carried out at one time, when viewed from the events being studied, the data collection is carried out at one time. Cross-sectional has a useful function to describe the status of events or the relationship of events at one time (Octiva et al., 2018). At the time of the implementation of the cross sectional study there was no follow-up and at the time of the examination, the status and characteristics of the phenomenon or event being studied would be seen (Pandia et al., 2018). The characteristic of cross sectional is that the total number of samples (n) has fixed characteristics and is determined randomly from within the population and then each subject will be categorized based on exposure status and disease (Pandiangan et al., 2022).

The research location was carried out at the Sambau Nongsa Community Health Center Batam in 2021. The time of the study was carried out from April to July 2021. The population in this study were all pregnant women at the Sambau Nongsa CommunityHealth Center as many as 267 people. The sample is 82 people. The sampling technique used was random sampling. Random sampling is a part of the sampling technique in which each sample has an equal probability of being chosen (Pandiangan, 2018). A sample chosen randomly is meant to be an unbiased representation of the total population (Pandiangan et al., 2018).

Data analysis used bivariate data analysis with chi square test. Chi square is a type of non-parametric comparative test that is carried out on two variables, where the data scale of the two variables is nominal (Tobing et al., 2018).

RESULT AND DISCUSSION

Result

Bivariate Data Analysis

Table1. Relationship Between Age, Gestational Age, Parity and KEK Status with the Incidence of Anemia in Pregnant Women

Variable	Incidence of Anemia in Pregnant Women				Total		p value
	Anemia		No Anemia				
	n	%	n	%	n	%	
Age							
Risk	24	29.27	16	19.51	40	48.79	0.043
No Risk	12	14.63	30	36.58	42	51.21	
Gestational Age							
Risk	30	36.58	24	29.27	54	65.85	0.037
No Risk	6	7.32	22	26.83	28	34.15	
Parity							
Risk	10	12.19	28	34.15	38	46.34	0.035
No Risk	26	31.71	18	21.95	44	53.66	
KEK Status							
KEK	36	43.90	0	0	36	43.90	0.000
No KEK	0	0	46	56.10	46	56.10	
Total	**36**	**43.90**	**46**	**56.10**	**82**	**100**	

Table 1 shows that of the 40 pregnant women who are at risk, there are 24 people (29.27%) with anemia and 16 people (19.51%) without anemia. 42 pregnant women with no risk age, there were 12 (14.63%) with anemia and 30 (36.58%) without anemia.

From 54 pregnant women with gestational age at risk, there were 30 people (36.58%) with anemia and 24 people (29.27%) without anemia. 28 pregnant women with a gestational age that is not at risk, there are 6 people (7.32%) with anemia and 22 people (26.83%) without anemia.

38 pregnant women with parity at risk, there were 10 (12.19%) with anemia and 28 (34.15%) without anemia. 44 pregnant women with no risk parity, 26 (31.71%) had anemia and 18 (21.95%) were not anemic.

82 pregnant women with KEK status, 36 (43.90%) had anemia and 46 (56.10%) with non-KEK status did not experience anemia.

DISCUSSION

Relationship between the Age of the Incidence of Anemia in Pregnant Women

The results showed that there was a relationship between the age of pregnant women and the incidence of anemia (p=0.043). Maternal age has a close influence on female reproductive organs. The ideal reproductive age for women to get pregnant and give birth is 20-35 years. This situation is caused because at the age of less than 20 years the mother's uterus and pelvis have not developed properly and are not mature enough to become a mother, while at the age of 35 years and over the elasticity of the pelvic and surrounding muscles and the reproductive organs in general has regressed so that can complicate delivery and can further cause infant and maternal death (Kementerian Kesehatan, 2002)

Muhilal et al. (1991) in their research stated that there is a tendency that the older the pregnant woman, the greater the presentation of anemia. Women who are less than 20 years old or more than 35 years old, have a high risk of getting pregnant. Wintrobe (1987) states that maternal age can affect the incidence of anemia, namely the lower the age of the pregnant woman, the lower the hemoglobin level.

Relationship between Gestational Age of the Incidence of Anemia in Pregnant Women

The results showed that there was a relationship between gestational age of pregnant women and the incidence of anemia (p=0.037). The results of this study are in line with those conducted by Yana Luthfiyati in 2012 (p=0.000) with the title, “Factors Associated with the Incidence of Anemia in Pregnant Women at Jetis Public Health Center”, Yogyakarta City, gestational age 24 weeks and those < 24 weeks are in the total the same size, namely 50% each.

According to Cuningham (2007) the occurrence of hemodilution process in pregnancy reaches its peak at 24 weeks of gestation and can continue to increase until 37 weeks of gestation. This causes pregnant women whose gestational age is 24 weeks to be susceptible to anemia. The results of this study support the statement that there is a relationship between gestational age and the incidence of anemia. In the first trimester, nausea and vomiting (emesis gravidarum) are common symptoms and are often found in the first trimester of pregnancy. Nausea usually occurs in the first trimester. in the morning, but can also occur at any time of the night. This is due to the effect of increasing levels of the hormones estrogen and HCG that are released higher, and the hormone HCG which can cause nausea and vomiting in early pregnancy, resulting in anemia or Hb levels below 11 g/dL(Andriana, 2012).
Pregnant women tend to be anemic in the third trimester because at this time the fetus accumulates iron reserves for itself as a supply for the first month after birth or Hb levels are below 11 g/dL(Sin, 2008).

Relationship between Parity of the Incidence of Anemia in Pregnant Women

The results showed that there was a relationship between gestational age of pregnant women and the incidence of anemia (p=0.035). The results of this study are in line with those conducted by Moh. Saifudin, Ayuna Dewi Anjelina with the title. "The Relationship Between Parity with the Incidence of Anemia in Pregnancy in Kranji Village, Paciran District, Lamongan Regency", through the rank spearman correlation test showed that (p=0.000 where p<0.05) so that H_1 was accepted, meaning that there was a very significant relationship between parity and the incidence of anemia in pregnancy.

Parity affects the occurrence of anemia because during pregnancy requires additional iron to increase the number of maternal red blood cells and form fetal red blood cells. If the supply of Fe reserves is

minimal, each pregnancy will deplete the body's Fe supply and eventually cause anemia in the next pregnancy, more often a woman experiences pregnancy and childbirth, the more iron will be lost and cause anemia (Manuaba, 2001).

Relationship between KEK Status of the Incidence of Anemia in Pregnant Women

The results showed that there was a relationship between gestational age of pregnant women and the incidence of anemia (p=0.000). Scientifically, pregnant women with good nutritional status will have normal hemoglobin levels. Due to adequate maternal nutritional intake where foods that contain lots of iron derived from animal meat, fruit, green vegetables can be consumed adequately (Tarwoto and Wasnindar, 2013).

Meanwhile, according to Savitri (2008), explaining that nutritional status is very influential on the incidence of anemia in pregnancy, because the nutritional needs of pregnant women increase for fetal growth and development. If the nutritional status of pregnant women is getting worse, the risk of occurrence in pregnant women will be even greater. At the beginning of pregnancy, the mother's body has made adjustments to prepare for the growth of the fetus, the period of delivery, and in order to be able to breastfeed the baby who was born. The fetus and baby who will be breastfed receive nutrients from their mother. If the consumption of nutrients during pregnancy is not sufficient, then the mother's nutrient reserves will be used.

Pregnancy requires special attention because it is an important period in the 1,000 days of life. Pregnant women are one of the groups that are vulnerable to nutrition. Nutritional intake of pregnant women is very influential on fetal growth. Good nutritional status in pregnant women can prevent the occurrence of low birth weight and stunting (short).

CONCLUSION AND SUGGESTION

The conclusions in this study are:

1. There is a relationship between age and the incidence of anemia in pregnant women at the Sambau Nongsa Community Health Center Batam in 2021 (p=0.043).
2. There is a relationship between maternal gestational age and the incidence of anemia in pregnant women at the Sambau Nongsa Community Health Center Batam in 2021 (p=0.037).
3. There is a correlation between parity and the incidence of anemia in pregnant women at the Sambau Nongsa Community Health Center Batam in 2021 (p=0.035).
4. There is a relationship between KEK status and the incidence of anemia in pregnant women at the Sambau Nongsa Community Health Center Batam in 2021 (p=0.000).

Suggestions in this research are

1. Pregnant Mother
   It is advisable for every pregnant woman to frequently make antenatal care (ANC) visits and seek information about the dangers of pregnancy, considering the incidence of anemia can occur in pregnancy and to prevent pregnant women should consume iron (Fe) tablets during pregnancy regularly and consume healthy and healthy foods nutritious.
2. For Community Health Center
   This research can be used as input and consideration in making policies regarding efforts to prevent anemia through increasing promotion of standardized ANC visits.
3. For Other Researchers
   Future research is expected to be able to use a better research design, such as the type of cohort research.

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