

Factors Affecting Anemia on Pregnant Mother in Working Area of Pijorkoling Public Health Center Padangsidempuan

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Abstract - Anemia in pregnant woman is a health problem and complications that can arise both in the mother and fetus. Pregnant women at term tend to suffer from iron deficiency anemia, because the period of fetal iron reserves hoard for himself in order to supply immediately after birth. Today, 34% of mothers suffer from anemia and 75% of them are in the developing countries. In Indonesia, 63,5% of pregnant mothers suffer from anemia. The research used an analytic survey with cross sectional design which was aimed to find out some factors which influenced the incident of anemia in pregnant mothers at Pijorkoling Puskesmas, Padangsidempuan. The population was 64 pregnant mothers of tri-semester III, and all of them were used as the samples, using total sampling technique. The data were gathered by using questionnaires and their statistic test used data analysis, using univariate analysis, bivariate analysis with chi square test and multivariate analysis with multiple logistic regression tests. Consumption of Fe tablets affect the incidence of anemia in pregnant women at Pijorkoling Public Health Center in 2013. If pregnant women who do not consume regular Fe tablets will have a chance 5.796 times more had anemia than mothers who regularly consume Fe tablets. Dietary also effect on the incidence of anemia in pregnant women. If pregnant women whose dietary is not good will have a 5.233 times higher chance of had anemia than mothers who good dietary. Factors that most affect anemia in pregnant women at Pijorkoling Public Health Center Padangsidempuan is the consumption of Fe tablets.

Keywords – Anemia; Pregnant Mothers; Consumption of Fe Tablets; Dietary.

I. INTRODUCTION

Anemia is a condition in which the amount of circulating erythrocytes or hemoglobin concentration decreases. As a result, there is a decrease in oxygen transport from the lungs to the peripheral tissues. During pregnancy anemia is common and is usually caused by iron deficiency, secondary to previous blood loss or inadequate iron input (Ben-Zion, 1994).

Anemia of pregnancy is called "Potential Danger to Mother and Child", because that anemia requires serious attention from all parties involved in health care at the forefront. The effects of anemia in pregnancy include can cause LBW and bleeding. Anemia in pregnancy is anemia due to iron deficiency, deficiency of folic acid, infections and blood disorders, anemia type which treatment is

relatively easy and even cheap. Anemia in pregnancy is a national problem because it reflects the socio-economic well-being of the people and its enormous influence on the quality of human resources (Manuaba, 2010).

Anemia in pregnant women is a health problem associated with high incidence and complications that may arise in both the mother and the fetus. In the world 34% of pregnant women with anemia where 75% are in developing countries (Health Ministry of Indonesia, 2009). In Indonesia, 63.5% of pregnant women with anemia (Saifudin, 2002) and about 62.3% are iron deficiency anemia (IDA) (Winkjosastro, 2005).

To overcome the problem of iron-deficiency anemia in pregnant women Indonesian Government through the Ministry of Health since 1970 has implemented a program

of giving iron tablets to pregnant women in Public Health Center and Integrated Health Service Post by distributing tablets added blood, where 1 tablet contains 200 mg of ferrous sulfate and 0.25 mg of folic acid (equivalent to 60 mg iron and 0.25 mg of folic acid). Every pregnant woman is advised to take a tablet plus blood at a dose of one tablet daily during her pregnancy and forty days after delivery. Tablets added blood provided by the Government and given to pregnant women for free through health care facilities (Health Ministry of Indonesia, 2003).

Based on the Health Profile of North Sumatera in 2010, based on anemia surveys conducted in 2010 in 4 districts/cities in North Sumatera, ie Medan, Binjai, Deli Serdang and Langkat are known that 40.50% of pregnant women suffer from anemia. One attempt to reduce the prevalence of anemia is by giving iron tablets (Fe) as much as 90 tablets during pregnancy. Coverage of pregnant women who received 90 iron tablets in North Sumatera showed an increase of 33.03% in 2008, rose to 53.09% in 2009 and to 76.67% in 2010, but has not reached the specified target of 80% (Health Office of North Sumatera, 2011).

The blood-boosting tablets are red, webbed and packaged in silver-colored aluminum sachet, containing 30 tablets of wrapping. In the packaging there is a logo of red blood droplets, the words "blood booster tablet for pregnant mother, mother and baby to be healthy" and marks to be traded (Health Ministry of Indonesia, 2003)

Anemia in pregnant women in addition to poverty due to poor nutrition, can also be caused by gender imbalances and the lack of knowledge about the right diet. Pregnant women need many nutrients to meet the body's needs in self and fetus. Iron deficiency results in a shortage of hemoglobin (hb), in which iron is one of the constituents. Hemoglobin acts as an indispensable oxygen binder for cell metabolism. Research by Herlina *et al.* (2005) also showed that the less good diet, the higher the incidence of anemia in pregnant women.

According to Health Ministry of Indonesia (1996) in Hendro (2009) that several factors that cause anemia are 1)

Factors related to self pregnant women, such as iron consumption, physical growth, distance / frequency of birth and nutritional status of pregnant women and food intake, 2) Factors caused by factors outside the body of pregnant women for example, the presence or absence of post-pregnancy bleeding, infection, presence/absence of antenatal care (ANC) routine.

From the preliminary survey conducted at Pijorkoling Public Health Center Padangsidempuan, where from 10 pregnant women there were 7 people suffering from anemia with $Hb \leq 11$ gr% examination. And seen from data Pijorkoling Public Health Center in 2011, pregnant women who get Fe tablet only about 50.40% of 502 pregnant women. Besides, it is still found mothers who visited the public health center experiencing symptoms of anemia with looks weak, tired, lethargic and pale. Based on the above background, the authors want to do research on the factors that affect anemia in pregnant women in the Work Area of Pijorkoling Public Health Center Padangsidempuan City. The aims of this study was to determine the factors that affect anemia in pregnant women in the Working Area of Pijorkoling Public Health Center Padangsidempuan City.

II. RESEARCH METHODS

This research uses analytic survey method using cross sectional design. The population is all third trimester pregnant women in Working Area of Pijorkoling Public Health Center Padangsidempuan City from June to September 2013, amounting to 64 people, and the whole population is sampled.

The data in this research consists of two types of data ie primary data and secondary data. Data analysis in this research is done by stages (1) Univariate Analysis. (2) Bivariate analysis using chi square test using degrees of significance $\alpha = 0.05$ (95% confidence degree). (3) Multivariate analysis using multiple logistic regression test.

III. RESULTS AND DISCUSSION

A. Univariate Analysis

Table 1. Distribution of Respondent Characteristics, Independent and Dependent Variables

No	Variable	f	%
1	Respondent Characteristics		
a.	Aged		
	20-35 years	55	85.9

	<20 years dan > 35 years	9	14.1
b.	Parity		
	1-3 children	50	78.1
	>3 children	14	21.9
c.	Birth Distance		
	≥2 years	51	79.7
	<2 years	13	20.3
2	Independent Variables		
a.	Consumption of Fe tablets		
	Good	30	46.9
	Less	34	53.1
b.	Dietary Habit		
	Good	28	43.8
	Less	36	56.2
c.	ANC Checkup		
	Good	26	40.6
	Less	38	59.4
3	Dependent Variables		
a.	Anemia		
	Tes	23	35.9
	No	41	64.1

1. Characteristics of Respondents

Characteristics of respondents viewed include maternal age, parity and distance of birth mother in Working Area of Pijorkoling Public Health Center. Based on Table 1 shows that based on the mother's age, the proportion of respondent's age is highest in the 20-35 years group of 85.9%. Based on parity, the largest proportion of parity is 1-3 children at 78.1%, the proportion of birth spacing of the most is ≥ 2 years of 79.7%.

According to Silalahi (2007) research, pregnant women in Dairi District mostly have ≥20 years age which is 95,7%, pregnant woman having parity > 4 is 18,6%, pregnant mother with pregnancy distance <2 years is 40%.

2. Independent Variables (Fe Tablet Consumption, ANC and Diet Checkup)

Based on the results of research on consumption of Fe tablet, it was seen that as many as 30 people (46.9%) who consumed Fe tablet regularly 1 x 1 day and as many as 34 people (53.1%) consume iron tablets irregularly 1 x 1 day and mother same once not consuming Fe tablets.

Pregnant women in the working area of Pijorkoling Public Health Center still do not understand what the benefits of regular consumption of Fe tablets, this can be

seen from the number of pregnant women of the third trimester who consumed his Fe tablet is not true. Some consume it sometimes, when remember, and some are consuming 2 times a day. Though this Fe tablet should be consumed once a day on a regular basis, as many as 90 tablets.

This figure is still below the target of health services in 2010 which is 90% which means that the coverage of iron supplementation programs against pregnant women has not reached the expected target. According to research Silalahi (2007) that pregnant women who do not consume enough iron tablets is still low at 62.9%. The high rate of anemia in pregnant women despite iron tablet supplementation in this study because the amount of Fe tablets consumed by pregnant women on average only less than 30 tablets, has not been able to meet the needs of maternal iron, especially intake of foods rich in iron amount also very low. Based on the frequency distribution of diet from the results of the study found that as many as 28 people (43.8%) is good and as many as 36 people (56.2%) less.

From the results in the field, it was found that pregnant women in this study area mostly did not know about the importance of managing the diet, because the mother considers pregnancy is a natural process so do not feel the need to prioritize food that is important for themselves and

their babies, mothers eat enough with a large portion but do not know the nutritional content. This certainly affects the health of the mother and fetus.

Table 1 shows that the frequency distribution of ANC examination is as many as 26 people (40.6%) which is good according to gestational age and as many as 38 people (59,4%) less that is not according to gestational age.

3. Dependent Variable (Anemia)

The incidence of anemia showed that as many as 23 people (35.9%) of mothers did not have anemia and as many as 41 people (64.1%) of mothers had anemia.

Figures obtained in this study were also higher than the incidence of anemia in Riau Province (48%). And seen from

data Pijorkoling Public Health Center in 2011, pregnant women who get Fe tablet only about 50.40% of 502 pregnant women. Besides, it is still found mothers who visited the public health center experiencing symptoms of anemia with looks weak, tired, lethargic and pale.

This is in accordance with the theory expressed by Manuaba (2010) which said that every pregnant woman will have anemia in pregnancy because of the decrease of Hb levels in the blood. Anemia in pregnancy has an adverse effect on both mother and fetus. The dangers of anemia during pregnancy can occur abortion, premature partus, fetal growth disorders in the womb, infection easy, low birth weight and antepartum bleeding.

B. Bivariate Analysis

Table 2. Relationship of Independent Variables (Age, Parity, Birth Distance, Fe Tablet Consumption, Dietary and ANC Checkup) with Dependent Variable (Anemia)

Independent Variable	Anemia				<i>p</i>
	Yes		No		
	n	%	n	%	
Age					
20-35 years	21	38.2	34	61.8	0.355
<20 and >35 years	2	22.2	7	77.8	
Parity					
1-3 children	16	32.0	34	68.0	0.215
>3 children	7	50.0	7	50.0	
Birth Distance					
≥2 years	18	35.3	33	64.7	0.832
<2 years	5	38.5	8	61.5	
Fe Tablet Consumption					
Good	17	56.7	13	43.3	0.001
Less	6	17.6	28	82.4	
Dietary					
Good	16	57.1	12	42.9	0.002
Less	7	19.4	29	80.6	
ANC Checkup					
Good	15	57.7	11	42.3	0.003
Less	8	21.1	30	78.9	

1. Variable of Age

The results of chi square test shows that $p = 0,355 > \alpha = 0,05$ can be concluded that there is no correlation between age with anemia in pregnant mother. The cross between age and anemia shows that from 55 respondents aged 20-35 years, there were 34 people (61,8%) who had anemia.

Whereas, from 9 respondents aged <20 and> 35 years there were 7 people (77.8%) who had anemia.

2. Variable of Parity

The cross between parity and anemia in pregnant women shows that from 50 respondents whose parity is 1-3 children, there are 34 people (68,0%) who have anemia.

Whereas, from 14 respondents whose parity > 3 children there were 7 people (50.0%) who had anemia. Chi square test results obtained $p \text{ value} = 0.215 > \alpha = 0.05$, thus there is no relationship between parity with the incidence of anemia in pregnant women

3. Variable of Birth Distance

The result of chi square test shows that $p = 0.822 > \alpha = 0.05$ can be concluded that there is no correlation between birth spacing with anemia in pregnant mother. The cross between birth spacing and anemia shows that from 51 respondents whose birth distance is ≥ 2 years, there are 33 people (64.7%) who have anemia. Whereas, from 13 respondents birth distance < 2 years there are 8 people (61.5%) who have anemia.

4. Variable of Consumption of Fe Tablets

Cross-table between consumption of Fe tablet with anemia in pregnant mother showed that from 30 respondents who consumed Fe regularly, there were 13 people (43.3%) who had anemia. Whereas, from 34 respondents who did not consume iron regularly there were 28 people (82.4%) who had anemia. Chi square test results obtained $p \text{ value} = 0.001 < \alpha = 0.05$, thus there is a relationship between the consumption of Fe tablets with the incidence of anemia in pregnant women.

In line with research of Deisy (2013), there is a probability value of 0.0001 which means there is a relationship between adherence of Fe tablet consumption with anemia occurrence in pregnant mother at Wawonasa Public Health Center Manado City in 2013. This research is in line with research conducted by Sari (2012) about management of anemia in antenatal care to the occurrence of anemia of pregnant mother in Pontianak City, where there is correlation between consumption of Fe tablet with anemia incidence of pregnant mother.

Ideally all the nutrients needed by pregnant women can be met from a balanced diet. However, in pregnant women there is an increasing need so high that it can not or is difficult to be fulfilled only from foods, especially for iron and folate. Therefore pregnant women are encouraged to take iron supplements, known as blood-boosting tablets (BBT). Pregnant women are encouraged to consume 1 tablet per

day during pregnancy and continue during puerperium (Kurniasih *et al.*, 2010).

5. Variables of Dietary

The result of chi square test shows that $p = 0.002 < \alpha = 0.05$ can be concluded that there is relationship between diet with anemia in pregnant mother. The cross between dietary and anemia shows that from 28 respondents who have good diet is 12 people (42.9%) who have anemia. Meanwhile, from 36 respondents who ate less diet there were 29 people (80.6%) who had anemia.

According Sibagariang (2010), discrimination in the allocation of food, the consumption of inadequate food to poor families, allegedly causes malnutrition for women. The current socio-cultural tradition places girls less than boys, since boys are seen as the heirs of the family line. The norm prevailing in the community that women should eat the last part after their husbands, parents and children, is a form of female subordination or *penomorduaan*. This kind of value is the ethic of life in general, which then regulates behavior in a gender-biased family. As a result pregnant women do not get nutritious food and cause anemia that affect pregnancy.

6. Variable of ANC Checkup

The result of chi square test shows that $p = 0.003 < \alpha = 0.05$ can be concluded that there is correlation between ANC checkup with anemia in pregnant mother. The cross between ANC and anemia shows that of 26 respondents with good ANC, there were 11 people (42.3%) who had anemia. Meanwhile, from 38 respondents who have less ANC there are 30 people (78.9%) who have anemia.

This research is in line with research of Deisy (2013) obtained by probability value 1,000 which shows there is no significant correlation between antenatal care frequency with incidence of anemia in pregnant woman at Wawonasa Public Health Center Manado City. A study by Sambow (2008) on the relations of anemia in pregnant women with Antenatal Care and Fe supplements at Ranotana Weru Public Health Center, Manado City, showed no relations between antenatal care and the incidence of anemia in pregnant women.

C. Multivariate Analysis

Table 3. Multiple Logistic Regression Test Results

Variable	B	p	Exp (B)
Fe Tablet Consumption	1.757	0.005	5.796
Dietary	1.655	0.007	5.233
Constant	-1.082	0.034	0.339

The result of logistic regression analysis also showed that consumption of Fe tablet with $p(0,005) < 0,05$ had an effect on the occurrence of anemia. Then variable of ANC checkup with $p(0,007) < 0,05$ have an effect on the occurrence of anemia. The result of multiple logistic regression analysis shows that the most dominant variable is variable of Fe tablet consumption that is on regression coefficient value of B 1,757.

Based on the result of logistic regression analysis, Fe tablet consumption variable got the value of Exp (B) equal to 5,796, so it can be concluded that pregnant women who do not consume Fe tablet regularly will have 5.796 times more likely to experience anemia than mothers who routinely consume Fe tablets.

Based on the results of the research note that the consumption of Fe tablets and dietary has an effect on the occurrence of anemia in pregnant women at Pijorkoling Public Health Center in 2013, with percentage correct value = 76,6 means consumption of Fe tablets and diet explained variation of anemia incidence in pregnant women at Pijorkoling Public Health Center in 2013 by 76.6%, the remaining 23.4% influenced by other variables not included in this research variable.

The equation above states that respondents who do not consume regular Fe tablets and diet is not good have the probability of individual pregnant women experience anemia incidence of 91.1%. of respondents who consumed regular Fe tablets and good diet, had an individual probability of pregnant women having anemia incidence of 25,3%.

IV. CONCLUSIONS

Consumption of Fe tablets affect the incidence of anemia in pregnant women at Pijorkoling Public Health Center in 2013. If pregnant women who do not consume regular Fe tablets will have a chance 5.796 times more had anemia than mothers who regularly consume Fe tablets. Dietary also effect on the incidence of anemia in pregnant women. If

pregnant women whose dietary is not good will have a 5.233 times higher chance of had anemia than mothers who good dietary. Factors that most affect anemia in pregnant women at Pijorkoling Public Health Center Padangsidempuan is the consumption of Fe tablets.

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