

The Factors Influencing with Anemia Incidence to Pregnant At Public Health Centre Manimer Teluk Bintuni District

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ABSTRACT

Background: Anemia in pregnancy is a national problem that often occurs in pregnant women due to various factors including age, education, occupation, socio-economic, nutritional status, parity, distance of pregnancy, frequency of pregnancy visits and consumption of Fe tablets.

Objective: To find out the factors associated with the incidence of anemia in pregnant women at the Manimeri Health Center in Teluk Bintuni District.

Research Method: Analytical with cross sectional study design. The population was all pregnant women who came to the Puskesmas Manemari as much 232 people with a total sample of 70 people using purposive sampling. Data approach using a questionnaire and analyzed using the chi square test and logistic binary regression.

Results: Factors associated with anemia in Manimeri Health Center, Bintuni Regency were nutritional status (p-value 0.007; RP = 2.579 CI95% (1,381– 4,815), pregnancy distance (p-value 0.031; RP = 2,227 CI95% (1,222– 4,058), consumption of Fe tablets (p-value 0,000; Rp = 7,333 CI95% (1,870–28,752). While the factors associated with the incidence of anemia in the Manimeri Community Health Center in Bintuni Regency are maternal age (p-value 0.693; RP = 11,284; CI95% (0.644 - 2.560), mother's education (p-value 0.560; RP. 1.322 CI95% (0.682-2.565), maternal occupation (p-value 0.276; RP = 0.600 CI95% (0.274 - 1.314), socioeconomic status (p-value 0,409; RP = 00,698 CI95% (0,368– 1,324), parity (p-value 1,000; RP. 0,818 CI95% (0,242-2,768), pregnancy visit (p-value 0,776; RP. 1,196 CI95% (0,626-2,285). Nutritional status, pregnancy distance, consumption of Fe tablets.

Consumption of Fe tablets is the most dominant factor associated with the incidence of anemia.

Keywords: Anemia Incidence, Pregnant, Public Health Centre

1. INTRODUCTION

World Health Organization (WHO, 2016), 40% of deaths in developing countries are associated with anemia in pregnancy. Based on data from the Indonesian Ministry of Health (2015), the Maternal Mortality Rate (MMR) is 309 / 100,000 live births. The high AKI was caused by bleeding (30.3%), hypertension (27.3%), infection (7.3%) and other maternal diseases that caused death (40.8%), bleeding complications one of which was caused by anemia (Indonesian Ministry of Health, 2017). Data from West Papua Province Health Office, Maternal mortality rates in West Papua were recorded at 575 / 100,000 due to bleeding (11.2%), hypertension (32%), infection (8%) and others (49%) (Provincial Health Office West West Papua, 2015).

One of the causes of maternal death is caused by anemia. The 2013 Basic Health Research Report, reported the prevalence of anemia in pregnancy was 37.1% of 5,298,285 pregnant women (Ministry of Health, 2014). Whereas the incidence of anemia in West Papua Province in 2017 was 38.5% of 57,203 pregnant women (West Papua Provincial Health Office, 2017). Anemia in pregnancy can have an adverse effect especially when pregnancy, childbirth and childbirth. High prevalence of anemia

results negatives such as disturbances and obstacles to growth, both body cells and brain cells, lack of Hb in the blood resulting in lack of oxygen under / transferred to cells of the body and to the brain is likely to experience post partum bleeding (Purwandari, 2016). Lack of hemoglobin (Hb) levels of pregnant women increases the risk of birth of Low Birth Weight (LBW), the risk of bleeding before and during labor, can even cause the death of mother and baby if the pregnant woman suffers from severe anemia (Manuaba, 2013).

Causes related to malnutrition are related to food intake, food quality, sanitation and health behaviors that can cause iron (Fe) deficiency. In addition, the mother did not comply with taking Fe tablets. Selin maternal risk factors are the age of the mother who is too young, the number of children, high birth, low education, employment and family income that affect nutritional intake and access to health services (Department of Nutrition and Public Health, 2013).

Disobedience of pregnant women consuming Fe tablets and lack of knowledge of the importance of iron tablets during pregnancy is one of the factors that can cause anemia. In addition, nutritional status, pregnancy distance, education, parity number, maternal age, and frequency of Antenatal Care (ANC) also affected the incidence of anemia in pregnant women. Impacts that cause anemia such as infectious diseases such as malaira in pregnant women that affect bleeding during childbirth, low birth weight babies (LBW), IQ is not optimal, babies are easily infected and easily suffer from malnutrition (Ariyani, 2016).

Data from Bintuni Bay Regency, the number of pregnant women in 2015 was 1,639, 1,259 people (76.81%) got Fe tablets and the incidence of anemia reached 52%. In 2016 there were 1,748 pregnant women, 1,164 people (66.59%) got Fe tablets and 59% of mothers had anemia. In 2017 there were 1,765 people, 1,095 people (62.03%) getting Fe tablets and the incidence of

anemia in pregnant women reached 61%. This data shows the administration of Fe tablets has not reached the target which has an impact on the increase in the percentage of anemia. This indicates the low consumption of Fe tablets by pregnant women who are affected by anemia.

Manimeri Health Center is one of 24 Puskesmas in the Bintuni Bay District. Manimeri Community Health Center data found the number of pregnant women in 2016 as many as 54 people with 23 people (3.52%) suffering from anemia, in 2017 there were 54 people with 6 people (0.92%) suffering from anemia and 2018 as many as 56 with 38 people (5.79%) suffer from anemia.

Based on these problems, the authors are interested in conducting research on "Factors related to the incidence of anemia in pregnant women at the Manimeri Health Center, Bintuni Bay Regency".

2. MATERIALS AND METHODS

Type and Design of Research

This study is an observational analytic study that aims to determine the effect of two or more variables (Sugiyono, 2013). This study explains the relationship affects and is influenced by the variables to be studied. Using a cross sectional study approach with data collection carried out simultaneously at one time (Notoatmodjo, 2012).

Place and time of research

The place for conducting the research was conducted at the Manimeri Health Center in the Bintuni Bay District. The study was conducted in September - October 2018.

Population

The population in this study were all pregnant women at the Manimeri Health Center in July - August 2018 as many as 232 pregnant women.

Sample

According to Nototatmodjo (2012) the sample is a portion of the population that is considered representative. The sample size is obtained by the following formula:

$$n = N / (1 + N (d) ^ 2)$$

Where:

n: Sample size
 N: Large population
 d: Deviation by the population by the degree of health used, namely 0.1
 $n = 232 / (1 + 232 (0,1) ^ 2)$
 $n = 232 / (1 + 2.32)$
 $n = 232 / 3.32$
 $n = 69.87$ rounded to 70 samples
 Sampling is done by purposive random sampling, i.e. samples taken based on certain considerations

3. RESULTS

a. Relationship of age with the incidence of anemia in pregnant women

Table 1. Relationship of age with the occurrence of anemia in pregnant women at Manimeri Health Center in Bintuni Regency in 2018

No	Age	Occurrence of anemia				n	%
		Anemia		Not Anemia			
		n	%	n	%		
1	< 20 and > 35 year	7	41,2	10	58,8	17	100
2	20-35 year	17	32,1	36	67,9	53	100
Total		24	34,3	46	65,7	70	100

p-value = 0,693; RP = 1,284; CI95% (0,644 - 2,560)

Table 1 shows that out of 17 mothers aged <20 years and more than 35 years there were 7 people (41.2%) with anemia and 17 people (32.1%) were not anemic. While from 53 mothers aged 20-35 years there were 10 people (58.8%) with anemia and 36 people (67.9%) were not anemic. The results of the chi square statistical test on the significance value of 95% ($\alpha = 0.05$) obtained p-value 0.693 or $p > \alpha$ (0.05). This means that there is no relationship between the age of the mother and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. The result of the RP value is 11,284; CI95% (0.644 - 2.560) with a lower value <1, so age is not a significant factor with the incidence of anemia.

b. Educational relationship with the incidence of anemia in pregnant women

Table 2 shows that out of 36 low-educated mothers there were 14 people (38.9%) with anemia and 22 people (61.1%) were not anemic. While from 34 mothers of higher education there were 10 people (29.4%) with anemia and 24 people (70.6%) were

not anemic. The results of the chi square statistical test on the significance value of 95% ($\alpha = 0.05$) obtained p-value 0.560 or $p > \alpha$ (0.05). This means that there is no relationship between the education of mothers and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. The results of the value of Rp 1.322 CI95% (0.682– 2,565) with a lower value <1, so that education is not a significant factor with the incidence of anemia.

Table 2. Educational relationship with the incidence of anemia in pregnant women in Manimeri Health Center, Bintuni Regency in 2018

No	Education	Occurrence of anemia				n	%
		Anemia		Not anemia			
		n	%	n	%		
1	Low	14	38,9	22	61,1	36	100
2	High	10	29,4	24	70,6	34	100
Total		24	34,3	46	65,7	70	100

p-value = 0,560; RP = 1,322 CI95% (0,682 - 2,565)

c. Job relationship with the incidence of anemia in pregnant women

Table 3. Job relationship with the incidence of anemia in pregnant women at Manimeri Health Center, Bintuni Regency in 2018

No	Occupation	Occurrence of anemia				n	%
		Anemia		Not anemia			
		n	%	n	%		
1	Work	6	24	19	76	25	100
2	Not work	18	40	27	60	45	100
Total		24	34,3	46	65,7	70	100

p-value = 0,276; RP = 0,600 CI95% (0,274 - 1,314)

Table 3 shows that of the 253 working mothers there were 6 people (24%) with anemia and 19 people (76%) were not anemic. While from 45 mothers who did not work there were 18 people (40%) with anemia and 27 people (60%) were not anemic. The results of the chi square statistical test on the significance value of 95% ($\alpha = 0.05$) obtained p-value 0.276 or $p > \alpha$ (0.05). This means that there is no relationship between the work of mothers and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. The results of the value of RP = 0.600 CI95% (0.274 - 1,314) <1, so that work is not a significant factor with the incidence of anemia.

d. Relationship between socio-economic status and the incidence of anemia in pregnant women

Table 4 Relationship between socio-economic status and the incidence of anemia in pregnant women at Manimeri Health Center in Bintuni Regency in 2018

No	Social economy	Occurrence of anemia				n	%
		Anemia		Not anemia			
		n	%	n	%		
1	Low	13	29,5	31	70,5	44	100
2	High	11	42,3	15	57,7	26	100
Total		24	34,3	46	65,7	70	100

p-value = 0,409; RP = 0,698 CI95% (0,368– 1,324)

Table 4 shows that of the 44 mothers with low socioeconomic status there were 13 people (29.5%) with anemia and 31 people (70.5%) were not anemic. While from 26 mothers with high socioeconomic status there were 11 people (42.3%) with anemia and 15 people (57.7%) were not anemic. The results of the chi square statistical test on the significance value of 95% ($\alpha = 0.05$) obtained *p-value* 0.409 or $p > \alpha$ (0.05). This means that there is no relationship between the socio-economic status of the mother and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. The results of the value of RP = 0,698 CI95% (0.368– 1.324) with a value of <1 , so that socio-economic status is not a significant factor with the incidence of anemia.

e. Relationship between Nutritional Status and the incidence of anemia in pregnant women

Table 5. Relationship between GIzi Status and the incidence of anemia in pregnant women at Manimeri Health Center, Bintuni Regency in 2018

No	Nutritional status	Occurrence of anemia				n	%
		Anemia		Not anemia			
		n	%	n	%		
1	KEK	13	59,1	9	40,9	22	100
2	Not KEK	11	22,9	37	77,1	48	100
Total		24	34,3	46	65,7	70	100

p-value = 0,007; RP = 2,579 CI95% (1,381– 4,815)

Table 5 shows that of the 22 mothers with KEK nutritional status there were 13 people (59.1%) with anemia and 9 people (40.9%) were not anemic. While from 48 mothers who did not have SEZ nutritional status there were 11 people (22.9%) with anemia and 37 people (77.1%) were not anemic. The results of the chi square statistical test

on the significance value of 95% ($\alpha = 0.05$) obtained *p-value* 0.007 or $p < \alpha$ (0.05). This means that there is a correlation between the nutritional status of the mother and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. The results of the value of RP = 2.579 CI95% (1,381– 4,815) interpreted that mothers with KEK nutritional status had a risk with an incidence of anemia of 2,579 times higher than those of mothers who did not have SEZ or normal nutritional status.

f. Parity relationship with the incidence of anemia in pregnant women

Table 6. Parity relationship with the incidence of anemia in pregnant women in Manimeri Health Center, Bintuni Regency in 2018

No	Parity	Occurrence of anemia				n	%
		Anemia		Not anemia			
		n	%	n	%		
1	High	2	28,6	5	71,4	7	100
2	Low	22	34,9	41	65,1	63	100
Total		24	34,3	46	65,7	70	100

p-value = 1,000; RP = 0,818 CI95% (0,242– 2,768)

Table 6 shows that of the 7 high parity mothers there were 2 people (28.6%) with anemia and 5 people (71.4%) were not anemic. While from 63 mothers with low parity there were 22 people (34.9%) with anemia and 41 people (65.4%) were not anemic. The results of the chi square statistical test on the significance value of 95% ($\alpha = 0.05$) obtained *p-value* 1,000 or $p > \alpha$ (0.05). This means that there is no relationship between maternal parity and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. The results of the value of RP = 0.818 CI95% (0.242– 2768) <1 , so that parity is not a significant factor with the incidence of anemia.

g. Relationship between the distance of pregnancy and the incidence of anemia in pregnant women

Table 7. Relationship between the distance of pregnancy and the incidence of anemia in pregnant women in Manimeri Health Center, Bintuni Regency in 2018

No	Pregnancy interval	Occurrence of anemia				n	%
		Anemia		Not anemia			
		n	%	n	%		
1	< 2 year	10	58,8	7	41,2	17	100
2	> 2 year	14	26,4	39	73,6	53	100
Total		24	34,3	46	65,7	70	100

p-value = 0,031; RP = 2,227 CI95% (1,222– 4,058)

Table 7 shows that of the 17 mothers of pregnancy <2 years there were 10 people (58.8%) with anemia and 7 people (41.2%) were not anemic. While from 53 mothers who had a pregnancy distance of > 2 years there were 14 people (26.4%) with anemia and 39 people (73.6%) were not anemic. The results of the chi square statistical test on the significance value of 95% ($\alpha = 0.05$) obtained p-value 0.031 or $p < \alpha$ (0.05). This means that there is a relationship between maternal pregnancy and anemia at Manimeri Health Center, Bintuni Regency. Results of 2,227 CI95% (1,222– 4,058) were interpreted that the pregnancy distance <2 years tended to be anemic 2,227 times compared to pregnant women with a pregnancy distance > 2 years.

h. Relationship between the frequency of Pregnancy Visits (ANC) and the incidence of anemia in pregnant women

Table 8. Relationship between the frequency of ANC and the incidence of anemia in pregnant women at the Manimeri Health Center in Bintuni Regency in 2018

No	Pregnance visit frequency	Occurrence of anemia				n	%
		Anemia		Not anemia			
		n	%	n	%		
1	Irregular	11	37,9	18	62,1	29	100
2	Reduler	13	31,7	28	68,3	41	100
Total		24	34,3	46	65,7	70	100
<i>p-value = 0,776; RP = 1,196 CI95% (0,626– 2,285)</i>							

Table 8 shows that of the 29 mothers whose frequency of irregular pregnancy visits there were 11 people (37.9%) with anemia and 18 people (62.1%) were not anemic. While of 41 mothers who had a frequency of pregnancy visits there were 13 people (31.7%) with anemia and 28 people (68.3%) were not anemic. The results of the chi square statistical test on the significance value of 95% ($\alpha = 0.05$) obtained p-value 0.776 or $p > \alpha$ (0.05). This means that there is no correlation between the frequency of medical visits and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. The results of the value of $RP = 1.196$ CI95% (0.626-2285) with a value of <1, so the frequency of pregnancy visits is

not a significant factor with the incidence of anemia.

4. DISCUSSION

4.1. Relationship of age with the incidence of anemia in pregnant women

The results showed that there was no relationship between the age of the mother and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. Pregnant women <20 years old and more than 35 years old have 41.2% with anemia while mothers aged 20-35 years have 32.1% with anemia. This shows that the proportion of pregnant women is equally at risk with the incidence of anemia. This research is in line with the research conducted by Turia (2015), that age is not related to the incidence of anemia in pregnant women. The prevalence ratio test results showed a risk but were not significant (Rp. 1,284; CI95% (0.644 - 2,560). This was due to maternal age influenced by the physical readiness of pregnant women in pregnancy care, balanced nutritional intake related to maternal nutritional status According to Prawirohardjo (2012), the age of > 35 years has a risk of getting pregnant because of the age of > 35 years, where the reproductive organs of pregnant women have decreased and the strength to push during childbirth has decreased so that anemia occurs at the age of >35 years. 2008) A dangerous situation during pregnancy and increasing the danger to the baby is age <20 years or > 35 years. The incidence of anemia in pregnant women at the age of <20 years, because the young mother needs more iron for self and baby growth needs he will conceive.

However, in Herlina's (2012) study, it also mentions various factors that influence each other and do not rule out the possibility that even though the mature age for pregnancy is 25-35 years of age the incidence of anemia is much higher. This is possible because there are other factors that are more dominant influence on anemia in these factors including the distance of pregnancy, at a pregnancy distance <2 years

and the age of adolescents not ready for pregnancy hemodilution will occur during pregnancy and cause anemia.

Age factor is a risk factor for anemia in pregnant women. A mother's age is related to female reproductive organs. A healthy and safe reproductive age is 20 - 35 years old. Pregnancy at the age of <20 years and over 35 years can cause anemia because in pregnancy at <20 years of age biologically not yet emotionally optimal tends to be labile, mentally immature so that it easily experiences shock which results in a lack of attention to meeting the needs of nutrients during pregnancy. Whereas at the age of > 35 years associated with setbacks and decreased endurance and various diseases that often affect this age. The results showed that maternal age during pregnancy is very influential on the incidence of anemia (Amirrudin and Wahyuddin, 2014).

4.2 Relationship to education with the incidence of anemia in pregnant women

The results showed that there was no relationship between the education of mothers and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. Low educated mothers had 38.9% with anemia and mothers with high education there were 29.4% with anemia. This shows a low proportion of anemia in pregnant women who are highly educated, but not significant.

This research is in line with research conducted by Yuria (2015) revealing that there is no relationship between education and anemia in pregnant women. According to Handayani (2015) which states that the level of education achieved by a person has a real relationship with the knowledge of nutrition from the food they consume. Educational factors that are not related to anemia in pregnant women can be made possible by the influence of other factors such as the health promotion received by pregnant women during pregnancy. Education is a conscious and planned effort to prepare students through guidance,

teaching and / or training activities for the role in which they will come (Prayoto, 2014). The absence of a significant educational relationship due to knowledge factors that more strongly influence education, where highly educated mothers more easily absorb information than mothers with low education. However, this source of information is an important factor in increasing knowledge, so that low-educated mothers can have high knowledge when exposed to continuous information on pregnancy visits.

4.3 Job relationship with the incidence of anemia in pregnant women

The results showed that there was no relationship between the work of mothers with the incidence of anemia at the Manimeri Health Center in Bintuni Regency. There are 24% of mothers who work with anemia and 40% of mothers who do not work with anemia. This study is in line with the research conducted by Putri (2015) that there was no effect of work on the incidence of anemia.

Work is something that is done to earn a living, make a living. Today women have the opportunity to work openly. The basic reason for a woman to have a job is not the same as one another. The reason that is commonly found is because of financial needs to enrich personal experience and knowledge, achievement (Prayoto, 2014).

Types of work in the informal sector with a relatively heavier physical workload, causing a person to sweat a lot. This results in increased expenditure of iron with sweat. Pregnant women who carry out heavy workloads require a lot of food for the health condition of their bodies and for their energy needs, so that the nutrients needed must be fulfilled. Research conducted by Mulyawati (2013) who reported that out of 72 female workers it was found that 56 people (77.7%) suffered from anemia and jobs in the light category had an opportunity to be anemia 3.2 times compared to jobs in the medium category. This is probably due to the information obtained from working

mothers because they interact more so that information is easily obtained. This is according to Mubarak (2011) that the work environment can make someone gain experience and knowledge, both directly and indirectly.

The absence of relationships based on work is caused by the majority of mothers working in the formal sector and mothers who work as vegetable sellers on the market. The absence of this relationship is caused by working mothers who have the same risk to non-working mothers, where ibn who does not work together emit energy that is no different from mothers who work like washing pring, washing clothes and cleaning the house. Someone sweat a lot. This results in increased expenditure of iron with sweat. Pregnant women who carry out heavy workloads require a lot of food for the health condition of their bodies and for their energy needs, so that the nutrients needed must be fulfilled.

4.4. Relationship between socio-economic status and the incidence of anemia in pregnant women

The results showed that there was no correlation between socio-economic status of mothers with the incidence of anemia at the Manimeri Health Center in Bintuni Regency Mothers with low socioeconomic status had 29.5% with anemia and mothers with high socioeconomic status were 42.3% with anemia. The results of this study are in line with Junianti's research (2012 and Kurniati (2016) Tamangapa Health Center using chi-square statistical tests showing that there is no relationship between family income and the incidence of anemia in pregnant women.

Income is the result of salaries, wages, rewards received someone for the activities he does. Income will affect the pattern of activities and mindset including the opportunity to take advantage of the potential and available facilities to meet their needs (BPS, 2017). Family income is closely related to nutrition and health, where increased income will improve the

nutritional status and health of family members. Low income is an obstacle that can cause a person not to be able to buy, choosing good quality and diverse nutritional food (Dieny, 2014).

The absence of a relationship between socio-economic status is due to the mother's knowledge about how to meet family food needs. Although mothers have a high socioeconomic status, but it is not appropriate in choosing food needs or the high expenditure of other needs compared to food causes women at risk with a lack of balanced nutritional intake. On the other hand, mothers with low socio-economic status are able to manage their finances in meeting food needs so that the nutritional intake of pregnant women is sufficient.

4.5. Relationship to nutritional status with the incidence of anemia in pregnant women

The results of the study showed that there was a relationship between the nutritional status of the mother and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. Mothers with KEK nutritional status had 59.1% with anemia compared to mothers who did not SEZ 22.9% with anemia. This research is in line with the research conducted by Yuria (2015) that there is a correlation between nutritional status and the incidence of anemia in pregnant women.

Chronic energy deficiency (SEZ) is a result of an imbalance between intake for meeting energy needs and expenditures (Department of Nutrition and Public Health, 2013). Pregnant women with less chronic energy are mothers with a Lila limit of less than 23.5 cm which indicates chronic energy deficiency (Sulistyoningsih, 2010). Another important food source for pregnant women is animal protein. Consumption of animal protein can increase absorption of iron in the body. With low consumption of protein it can cause low absorption of iron by the body.

Lack of nutrients contributes to infectious diseases and conversely infectious diseases cause malnutrition.

People who suffer from malnutrition will be very vulnerable to various diseases. This is because of the lack of nutritious food intake that can improve the body's immune system. Likewise, if someone has an infectious disease it will reduce their appetite, so that if it is not handled it will cause malnutrition (Moechji, 2003). The relationship between nutritional status and the incidence of anemia in pregnant women causes the body to lack iron and can cause anemia. The low consumption and absorption of iron by the body in pregnant women can be caused by the family's low ability to serve iron-rich foods, especially animal protein in the daily menu, errors in food processing, especially processing vegetables and drinking tea after eating.

4.6 Relationship to parity with the incidence of anemia in pregnant women

The results showed that there was no relationship between maternal parity and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. High parity mothers were 28.6% with anemia and 22 mothers with low parity were 34.9% with anemia. This shows the same risk for mothers with high and low parity and from the results of the prevalence ratio test, it is found that parity is not significant with the incidence of anemia in pregnant women. The results of this study are in line with the research conducted by Astriana (2017), that maternal parity is influenced by the age of the mother, so parity is not significant for the incidence of anemia in pregnant women.

Parity is a woman's condition related to having a baby born. Called nullipara, if the mother has never given birth, has one baby (primipara), 2 babies (sekundipara), 3-4 babies (multiparas) >5 babies (grande multipara) (Tiran, 2009). Parity will have an impact on the incidence of anemia in pregnant women now if in pregnancy and childbirth previously experienced bleeding or abortion (Manuaba, 2013).

In this study, the absence of a relationship can be caused by the small number of high parity respondents, so that

the significance does not occur with the incidence of anemia in pregnant women. In addition, high parity has sufficient experience in the care of the pregnancy, including fulfilling a balanced nutritional intake, so that it has a good nutritional level and prevents infectious diseases and then has no bad obstetric history such as bleeding that causes maternal health conditions that worsens and impacts on subsequent pregnancies.

4.7 Relationship between the distance of pregnancy and the incidence of anemia in pregnant women

The results showed that there was a relationship between the distance of pregnancy and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. Mothers at risk of pregnancy distance (<2 years) as many as 58.8% had anemia while mothers who had a safe pregnancy (> 2 years) as many as 26.4% had anemia. This shows that the distance between the current pregnancy and the previous pregnancy is more susceptible to anemia 2,227 times compared to women who have a pregnancy distance > 2 years. Herlina's study (2012) also mentions various factors that influence each other because of the more dominant factors affecting anemia, including the distance of pregnancy, at a pregnancy distance of <2 years. Pregnancy distance greatly affects iron nutrition anemia status in pregnant women, this is because during pregnancy iron reserves in the body will be depleted to meet iron requirements during pregnancy, especially in pregnant women who experience a lack of iron reserves at the beginning of pregnancy and during labor pregnant women also lose a lot of iron through bleeding. It takes time to restore the iron reserves that are in the body, the best time to restore a mother's physiological condition is two years (Manuaba 2013).

The results of research conducted by Yuria (2015) in the Pasar Minggu sub-district health center, due to the distance of pregnancies that are too close can cause

anemia, because the condition of the mother still has not recovered and the need for nutrients is not optimal, it must meet the nutritional needs of the fetus. Mothers at Manimeri Health Center who experience a pregnancy distance of <2 years because mothers cannot manage the distance of pregnancy using family planning due to mothers not following contraception, late revisit in family planning use which causes unplanned pregnancies. So that mothers with a pregnancy distance <2 years tend to be affected by anemia because of previous labor, have a poor history of labor and have an impact on the incidence of anemia before becoming pregnant.

4.8 Relationship of frequency of ANC visits with the incidence of anemia in pregnant women

The results showed that there was no correlation between the ANC frequency of the mother and the incidence of anemia at the Manimeri Health Center in Bintuni Regency. Mothers whose irregular frequency of ANC was 37.9% with anemia and mothers with a regulated ANC frequency were 31.7% with anemia. This study is in line with Putri's study (2015) that there was no correlation between the frequency of ANC and the incidence of anemia in pregnant women.

The research conducted by Putri (2015) revealed the results of her research stated that the frequency of ANC was not related to the incidence of anemia in pregnant women. Pregnancy checks are recommended at least 4 times in normal pregnancy conditions. The ANC standard, known as 7T, is weighing and measuring height, measuring blood pressure, examining the height of the uterine fundus, giving Tetanus toxoid, blood-adding tablets, venereal disease tests and speeches in preparation for referrals. Regular prenatal check-ups are an attempt to early detect the danger or complications that can occur in pregnancy such as iron deficiency anemia in pregnant women (Romauli, 2011).

5. CONCLUSION

Based on the results of the discussion it can be concluded as follows:

- a. There is no relationship between the age of the mother and the incidence of anemia in the Manimeri Health Center in Bintuni Regency (p-value 0.693; RP = 11.284; CI95% (0.644 - 2.560).
- b. There is no relationship between the education of mothers and the incidence of anemia in the Manimeri Health Center in Bintuni Regency (p-value 0.560; Rp. 1.322 CI95% (0.682– 2.565).
- c. There is no relationship between the work of mothers with the incidence of anemia in the Manimeri Health Center in Bintuni Regency (p-value 0.276; RP = 0.600 CI95% (0.274 - 1,314).
- d. There is no correlation between the socio-economic status of the mother and the incidence of anemia in the Manimeri Community Health Center in Bintuni Regency (p-value 0.409; RP. 00,698 CI95% (0.368-1,324)
- e. There is a correlation between the nutritional status of the mother and the incidence of anemia in the Manimeri Health Center in Bintuni Regency (p-value 0.007; RP = 2.579 CI95% (1,381– 4,815).
- f. There is no relationship between maternal parity and incidence of anemia in Manimeri Health Center, Bintuni Regency (p-value 1,000; RP. 0,818 CI95% (0,242-2,768).
- g. There is a relationship between maternal pregnancy and anemia in Manimeri Health Center, Bintuni Regency (p-value 0.031; RP = 2.277 CI95% (1,222-4,058).
- h. There is no correlation between the frequency of medical visits and the incidence of anemia in the Manimeri Health Center in Bintuni Regency (p-value 0.776; RP = 1.196 CI95% (0.626–2.285).

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