

## The Factors Of Anemia Among Pregnant Women At Jaraga Sasameh Buntok Hospital In 2016

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### ABSTRACT

**Background:** Anemia in pregnant women can cause postpartum hemorrhage because of less Hb levels can affect the working of the uterus muscles and affect to contractions during labor. The case of pregnancy anemia ranges between 20% to 89% by setting Hb 11g% (g / dl) as its base. From the results of conducted preliminary studies at the Regional Hospital in Jaraga Sasameh Buntok obtained the data for mothers with anemia in 2014 amounted to 26.2% increasing in 2015 to 29.6%.

**Research Purposes:** This study aims to identify the factors that affect anemia in pregnant women at the Regional Hospital in Jaraga Sasameh Buntok 2016

**Research Methods:** This research using analytical survey method by a cross sectional design. The subjects of this study were the total number of initial visits of pregnant women (K1) at the Regional Hospital in Jaraga Sasameh Buntok as many as 453 with a sample of 82 cases. The sampling technique is determined by using a simple random technique. The collection of data obtained through secondary data by using the checklist, and this study used univariate and bivariate analysis.

**Research Result:** From the results of chi-square test found that age p factor = 0,000 and  $\alpha$  value = 0.05  $p < \alpha$ , parity factor obtained p value = 0.000 and  $\alpha$  value = 0,05  $p < \alpha$ , nutritional status factor obtained p value = 0.000 and  $\alpha$  value = 0,05  $p < \alpha$ , educational factor obtained p value = 0,000 and  $\alpha$  value = 0,05  $p < \alpha$ .

**Conclusion:** Based on the results of research can be concluded that all variables studied have a significant relationship to the case of anemia in pregnant women.

**Keywords :** Case of anemia, age, parity, education, nutritional status.

## INTRODUCTION

Maternal health is one of the concerns of *World Health Organization* (WHO) as the maternal mortality rate (AKI) which is one of the main indicators of a country's health level. It is about 80% of maternal deaths is caused by the increasing of complication during pregnancy, confinement and after *childbirth*. According to the report from *World Health Organization* (WHO) in 2014, the maternal mortality rate (AKI) around the world is about 289.000 inhabitants. Every day in 2013, there is about 800 woman around the world is die because of the complication during the pregnancy and child birth, then in the process of birth cause bleeding and eventually its caused anemia. The main causes of maternal mortality include of bleeding, hypertension, infection and indirect causes. Anemia in pregnancy causes postpartum hemorrhages as the less of Hb level affect the work of the uterine muscle and contraction during the process of delivers the birth. The range issue of maternal anemia is about 20% - 89% by assigning Hb 11 g % (g/dl) as the base (WHO, 2014).

Based on Indonesian Demographic and Health Survey (IDHS) in 2012, maternal mortality rate in Indonesia is still high in about 359 every 100.000 KH. This amount is slightly decreased comparing to the IDHS in 1991, which amounted to 390 every 100.000 KH. The global target SDGs (*Sustainable Development Goals*) is to reduce the Maternal

Mortality Rate (MMR) to 70 every 100.000 KH. Referring to the current condition, the potential to reach the target of SDGs to decrease the MMR is *off track*, means that it takes the hard work and earnest to achieve it. (Pusat Data dan Informasi Kementerian Kesehatan RI, 2014). That rate of anemia in Indonesia shows a high value. Hoo Swie Tjiong found the rate of maternal anemia in the first trimester in about 3.8%, then 13.6% in the second trimester and 24.8% in the third trimester (Manuba, 2010).

Factors that cause maternal anemia during pregnancy consist of direct and indirect factors. The direct factors that cause anemia are inadequate iron intake, loss of blood and infectious diseases, while indirect factors cause anemia include socioeconomic, knowledge, education, culture, parity, antenatal care (ANC) visits, age and husband support (Zakkiyatun, 2011). According to Anggraini in Puspitasari (2012) mentioned the other factors causing anemia including the level of education, occupation, age, nutritional status, and ethnicity.

Based on the amount of pregnant woman in South Barito regency in 2014, there is coverage of pregnant mothers with 478 anemia's issue from 2.356 targeted pregnant woman (South Barito Health Profile, 2014). Based on a preliminary study that is conducted in RSUD Jaraga Sasameh Buntok obtained the data of pregnant woman with anemia's issue in 2014 who experienced anemia of 478 people

from 2.356 target pregnant woman (26.2%) increased in 2015 to 524 people (29.6%). In the last 3 months examination from October to November 2016, there were 143 initial visits of pregnant woman who suffered anemia in about 54 people (37.8%) (RSUD Jaraga Sasameh Buntok).

In conclusion, the research in Indonesia towards this issue needs more improvements especially at Jaraga Sasameh Buntok as the only referral hospital. Therefore, the researcher is interested in identifying “the factors of anemia among pregnant women at Jaraga Sasameh Buntok Hospital in 2016”.

## MATERIALS AND METHOD

This research uses analytical survey method which is kind of survey or research that try to explore “how” and “why” health phenomenon occurs by using cross sectional design that is a research to discuss about the correlation’s dynamics between factors with effect, by approach, observation, or collecting data at that time itself.

The population of this research is the amount of initial visit of pregnant woman (K1) at Jaraga Hospital Sasameh Buntok from January 2016 until December 2016 as many as 453 people in *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*. The sample is about 82 people from that place.

The variable used in this research is dependent variable that is anemia among pregnant woman in Jaraga Sasameh Buntok Hospital and for the independent variable is

more about the factors if age, education, parity, mother’s nutritional status about anemia to pregnant woman at Jaraga Sasameh Buntok Hospital.

## RESULTS

### A. Univariate Analysis

The result of the research of factors influencing anemia among pregnant women in Obstetric Polyclinic of Jaraga Hospital of Sasameh Buntok is as follows:

#### 1. Age

Table 1 Distribution of frequency in pregnant women according to the age at *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*

| No.           | Umur                           | F  | %    |
|---------------|--------------------------------|----|------|
| 1.            | Beresiko = < 20 & ≥ 35 Tahun   | 44 | 53.7 |
| 2.            | Tidak Beresiko = 20 - 35 Tahun | 38 | 46.3 |
| <b>Jumlah</b> |                                | 82 | 100  |

#### 2. Parity

Table 2 The frequency distribution of pregnant women according to parity in *Poliklinik Kebidanan* of Jaraga Hospital Sasameh Buntok in 2016

| No.           | Paritas                     | F  | %    |
|---------------|-----------------------------|----|------|
| 1.            | Beresiko = ≥ 4 kali         | 52 | 63.4 |
| 2.            | Tidak Beresiko = 1 – 3 kali | 30 | 36.6 |
| <b>Jumlah</b> |                             | 82 | 100  |

### 3. Nutrition

Table 3 Maternal frequency distribution of pregnant women according to nutrition level based on LILA size at *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital* in 2016.

| No.           | Status Gizi                   | F  | %    |
|---------------|-------------------------------|----|------|
| 1.            | Beresiko = LILA < 23,5 Cm     | 44 | 53.7 |
| 2.            | Tidak Beresiko LILA ≥ 23,5 Cm | 38 | 46.3 |
| <b>Jumlah</b> |                               | 82 | 100  |

### 4. Education

Table 4 Maternal frequency distribution according to Education *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*

| No.           | Pendidikan   | Frekuensi | %    |
|---------------|--------------|-----------|------|
| 1.            | Rendah < SMU | 43        | 52.4 |
| 2.            | Tinggi ≥ SMU | 39        | 47.6 |
| <b>Jumlah</b> |              | 82        | 100  |

#### B. Bivariate Analysis

1. The Correlation between age and anemia among pregnant mother in *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*

Table 5 Analysis of parity relationship with anemia in pregnant women in Obstetric Polyclinic RSUD Jaraga Sasameh Buntok Year 2016.

| No.           | Umur                     | Anemia pada ibu hamil |      |              |      | Jumlah |      | OR (95% CI)    |
|---------------|--------------------------|-----------------------|------|--------------|------|--------|------|----------------|
|               |                          | Anemia                |      | Tidak anemia |      | F      | %    |                |
|               |                          | F                     | %    | F            | %    |        |      |                |
| 1.            | Beresiko <20 & ≥35 Thn   | 3                     | 45.7 | 7            | 8.5  | 4      | 53.7 | 17.032         |
|               |                          | 7                     | 1%   |              |      | 4      | 7%   |                |
| 2.            | Tidak Beresiko 20-35 Thn | 9                     | 11.0 | 2            | 35.4 | 3      | 46.3 | (5.664-51.210) |
|               |                          | 0%                    | 9    | %            | 8    | 3%     |      |                |
| <b>Jumlah</b> |                          | 4                     | 56.3 | 3            | 43.9 | 8      | 100  |                |
|               |                          | 6                     | 1%   | 6            | %    | 2      | 0%   |                |

**Uji chi square** **p= 0**

2. The Correlation between Parity and Anemia among Pregnant Mother in *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*

Table 6 Analysis of correlation of nutritional status based on LILA size with incidence of anemia in pregnant women at *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*

| No.           | Pendidikan   | Anemia pada ibu hamil |      |              |      | Jumlah |      | OR (95% CI)      |
|---------------|--------------|-----------------------|------|--------------|------|--------|------|------------------|
|               |              | Anemia                |      | Tidak anemia |      | F      | %    |                  |
|               |              | F                     | %    | F            | %    |        |      |                  |
| 1.            | Rendah < SMU | 4                     | 48.0 | 3            | 3.7  | 4      | 52.0 | 73.333           |
|               |              | 0                     | %    | 3            | %    | 3      | 4%   |                  |
| 2.            | Tinggi ≥ SMU | 6                     | 7.3  | 3            | 40.0 | 3      | 47.0 | (17.021-315.941) |
|               |              |                       | %    | 3            | 2%   | 9      | 6%   |                  |
| <b>Jumlah</b> |              | 4                     | 56.0 | 3            | 43.0 | 8      | 100  |                  |
|               |              | 6                     | 1%   | 6            | 9%   | 2      | %    |                  |

**Uji chi square** **p =0,00**

3. The Correlation between Nutrition Level and Anemia among Pregnant Mother in *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*

Table 7 Analysis of the correlation between nutrition level and the incidence of anemia in pregnant women at *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*

4. The Correlation between Educational Level and Anemia among Pregnant Mother in *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*

Table 8 Analysis of the correlation between educational level and the incidence of anemia in pregnant women at Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital

| No             | Paritas          | Anemia pada ibu hamil |       |              |       | Jumlah    |       | OR (95% CI)             |
|----------------|------------------|-----------------------|-------|--------------|-------|-----------|-------|-------------------------|
|                |                  | Anemia                |       | Tidak anemia |       |           |       |                         |
|                |                  | F                     | %     | F            | %     | F         | %     |                         |
| 1              | Beres ≥ 4X       | 44                    | 53.7% | 8            | 9.8%  | 52        | 63.4% | 77.000 (15.233-389.210) |
| 2              | Tidak Beres 1-3X | 2                     | 2.4%  | 28           | 34.1% | 30        | 36.6% |                         |
| Jumlah         |                  | 46                    | 56.1% | 36           | 43.9% | 82        | 100%  |                         |
| Uji chi square |                  |                       |       |              |       | p = 0,000 |       |                         |

**DISCUSSION**

**A. Anemia among Pregnant Women**

Referring to table 4.5 shows the frequency of anemia happened to pregnant women and the highest number of HB was about < 11 gr% (56.1%). It is adjusted the most age of respondent was in between <20 years old and ≥ years old, low nutritional level of pregnant mother so that iron from the food does not enough to full fill the needs of iron during the pregnancy as iron is not only use for the mother but also for the fetus in the womb. The more often the women experiences pregnancy and *childbirth*, the more iron loses and the level of education of pregnant women who came to the *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital* was still below the high school level.

Additionally, Ariyani (2016) mentioned that the highest relativity of occurring anemia to pregnant mother caused by some factors such as nutritional level, education, knowledge,

parity, age, social-economy, the distance of pregnancy, and antenatal care (ANC).

**B. The Correlation between age and anemia among pregnant mother in Jaraga Sasameh Buntok Hospital in 2016.**

The result of *Chi-Square* experiment came to the decision of  $p = 0,000$  and  $\alpha = 0,05$   $p < \alpha$ , so that the hypothesis was accepted. That means there was a correlation between age and anemia disorder among pregnant mother at *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*. Therefore, the other result showed the number of OR was about 17.032 by the CI = (5.664 – 51.210) means that the age of mother which is about < 20 years old and ≥ 35 years old years had a risk of 17,032 times anemic compared to the mothers aged 20-35 years.

Additionally, Melisa et al (2013) also mentioned the same thing about high incidence of anemia which occurred to pregnant mother at the age in between <20 and ≥35 as at age <20. The mother was still in process of linear growth hence require more nutrients, if less nutrients then will there is a nutritional competition between the mother and the baby. At the age of more than 35 years, they would be at risk since it is associated by the deterioration, decreased endurance and the various diseases that often befall at her age.

The results of this study are in line by the research conducted by Sri Agnes Naiboha in 2011 which occurred in Parsoburan Kec.Habinsaran Health Center of Toba Samosir Regency obtained anemia results in the age group <20 and> 35 were 82.1% and the

age group 20-35 is 59,2% with value  $P = 0,009$  ( $<0,05$ ) means there is significant relation of age and the incidence of anemia in pregnant mother and its ratio was about 88 with the value of  $(CI) = (1.067-1.805)$  means the age of respondents were between  $<20$  and  $\geq 35$  years old has a probability of 1,067 times to experience anemia compared to the age of respondents who are still 20-35 years old.

#### ***C. The Correlation between Parity and Anemia among Pregnant Mother in Jaraga Sasameh Buntok Hospital in 2016.***

Chi-Square results obtained  $p = 0,000$  and  $\alpha = 0,05$ ,  $p < \alpha$ , so the hypothesis is accepted which means there is a parity relationship with the incidence of anemia in pregnant women in *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital*. Also, an OR value of 77,000  $CI = (15,233-389,210)$ , meaning that mothers who gave birth  $\geq 4$  times had a 77% chance of having anemia compared to mothers who gave birth to 1-3X.

The results of this study were in line with the theory of Herlina (2009), parity is the number of babies born to a mother, either giving birth that birth or stillbirth. The risk of mother having anemia in pregnancy one of the causes is the mother who often gave birth and in the next pregnancy the mother is less attention to the intake of good nutrition in pregnancy. This is because during pregnancy nutrients will be divided for the mother and for the fetus is conceived.

Thus, Melisa, *et al.*, (2013) also mentioned the same result. The result of

statistical test using Chi-square of parity factor is obtained  $p$ -value = 0,000 ( $p < 0,05$ ) it can be concluded that there is a significant correlation between parity factor with the occurrence of anemia at pregnant women in the working area of Puskesmas Paal Lima Jambi in 2013.

#### ***D. The Correlation between Nutrition Level and Anemia among Pregnant Mother in Jaraga Sasameh Buntok Hospital in 2016.***

Chi-Square results obtained  $p = 0,000$  and the value of  $\alpha = 0.05$ ,  $p < \alpha$ , so the hypothesis is accepted which means there is a relationship between nutrition level and the incidence of anemia in pregnant women in *Poliklinik Kebidanan Jaraga Sasameh Buntok Hospital* in 2016. OR the magnitude of 17,032 with  $CI = (5,664-51,210)$ , means that the mother with LILA  $<23.5$  cm has 17,032 chance of having anemia risk compared with LILA mother  $\geq 23,5$  cm.

Kusumah, 2009 states the need for iron other than can be obtained from food also obtained from iron tablet supplementation. Iron is needed in the process of blood formation and in the process of maturation of hemoglobin. In case of iron deficiency, cell division will produce smaller cell cells (microcenter). Iron deficiency also causes the amount of hemoglobin in each cell is reduced so that the cell becomes hypo chromic, causing anemia. A woman during pregnancy has an increased energy requirement. Energy requirements in the first trimester of pregnancy have increased minimally. Secondary trimester supplementary energy is required for maternal tissue



expansion, which is the addition of blood volume, used for fetal growth, placental formation, blood vessels and new tissue. In addition, the additional calories are needed as a force for new tissue metabolic processes.

The results of this study in line with the research conducted Luthfiyati, 2012 showed that p value 0,000 which means there is a significant relationship between nutritional level with the incidence of anemia in pregnant women at Jetis Health Center Yogyakarta in 2012

#### ***E. The Correlation between Educational Level and Anemia among Pregnant Mother in Jaraga Sasameh Buntok Hospital in 2016.***

Chi-Squar results obtained  $p = 0,000$  and the value of  $\alpha = 0.05$   $p < \alpha$ , so the hypothesis is accepted which means there is an educational relationship with the incidence of anemia in pregnant women in midwifery Polyclinic RSUD Jaraga Sasameh. So also with the OR value of 73.333 with CI = (17.021-315.941), meaning that the mother with education <high school has a risky chance 73,333 times anemia compared with mother whose education  $\geq$  SMA. A person who is highly educated will differ in attitude with a lowly educated person. A person who has a low education will affect the lack of awareness of the benefits of health care because education is a learning process means that in the education process occurs that will affect the actions and compliance of a person. A person is said to learn when in him a change from not

knowing to know from the condition when they are not able to do become can do.

Fifi, 2012 mentioned that the higher education of the mother the higher awareness of her to get good nutrition so as not to cause anemia in pregnancy. Anemia occurred among pregnant women with low education has greater risk than mothers who have highly education.

Mother's education level education greatly affects how someone to act and find the cause and solution in his life. Highly educated people will usually act more rationally. Therefore an educated person will be more receptive to new ideas. Similarly, a highly educated mother will check her pregnancy regularly in order to maintain the health of himself and the child in his womb (Walyani, 2015).

The results of this study were in line by the research of Melisa, et al, (2013), there is a significant relationship between educational factors with the incidence of anemia in pregnant women in the working area of Paal Lima Public Health Center Jambi in 2013 with p-value = 0,013 ( $p < 0.05$ ). Ratio Prevalence 1,983 with Confidence Interval (CI) = (1,092 - 3,601) means less educated respondents have chance 1,983 times to experience anemia in comparison with factor of higher education.

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