

## **Factors Influencing The Incidence Of Anemia In Pregnant Women At Ranggo Public Health Center**

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### **ABSTRACT**

*Anemia during pregnancy, especially in the third trimester, is a major cause of pregnancy and childbirth complications. One of the risk factors for anemia is parity, the higher the parity, the greater the risk of anemia due to reduced body iron reserves. Objective: This study aims to analyze factors related to the incidence of anemia in pregnant women in the third trimester at Ranggo Community Health Center. Method: The method used is a quantitative study with a cross-sectional design. Sampling was carried out using simple random sampling with a sample of 94 pregnant women in the third trimester. Data were obtained from the Pregnant Women's Health Guidebook and the KIA book. Data were analyzed using the Chi-Square statistical test. Results: The results showed that 48.9% of pregnant women experienced anemia with Hb levels <11 g / dL, and as many as 57.9% of mothers had high-risk parities ( $\geq 3$ ). Meanwhile, the Chi-Square statistical test analysis showed a significant association between parity and the incidence of anemia ( $p = 0.005$ ) and showed a significant association between education and the incidence of anemia ( $p = 0.003$ ). Conclusion: Parity and high education are significant risk factors for the incidence of anemia in pregnant women in the third trimester. Therefore, this study recommends increasing health education and nutritional interventions to prevent anemia in pregnant women.*

*Keywords: Anemia; Parity; Education*

### **1. BACKGROUND**

Iron deficiency anemia in pregnant women can affect the growth and development of the fetus and infant during and after pregnancy. There is a significant correlation between the spacing of pregnancies and the incidence of anemia in pregnant women in the third trimester. Data from the 2022 Basic Health Research (Riskesdas) indicates that the prevalence of anemia in pregnant women in Indonesia is 37.1%. Anemia contributes to mortality in Indonesia, estimated at 10% to 12%. This means that 10% to 12% of maternal deaths in Indonesia could be prevented if the incidence of anemia in pregnant women could be

reduced to a minimum. Anemia in pregnancy is a condition in which a mother has a hemoglobin level below 11 grams% in the first and third trimesters or below 10.5 grams% in the second trimester [1]. Anemia increases the risk of complications such as peripartum and postpartum hemorrhage, which, if not properly managed, can be fatal, because pregnant women with anemia cannot prevent blood loss [2]. The leading cause of maternal death is hemorrhage. According to the WHO, hemorrhage is responsible for 35% of maternal deaths worldwide, with an incidence of 0.8-1.2% for each birth [3]. The occurrence of hemorrhage during childbirth is closely related to the occurrence of

anemia. Mothers with anemia will quickly become ill if they lose even a small amount of blood. Anemia can cause maternal death due to the risk of bleeding. Anemic mothers cannot tolerate blood loss like those without anemia. Common causes of anemia are chronic blood loss, inadequate iron intake and absorption, and increased iron requirements. [4]

Anemia in women is caused by inadequate iron (Fe) intake in the diet, increased Iron requirements during pregnancy and breastfeeding (physiological changes), and heavy blood loss (during previous menstrual periods and previous deliveries) [5]. Based on preliminary data collection at the Ranggo Community Health Center, the number of pregnant women in 2023 was 354, and 33 of them experienced anemia. Based on this data, researchers are interested in conducting research on the factors influencing the incidence of anemia in pregnant women [6].

## 2. RESEARCH METHODS

This study was conducted using an analytical observational method with a cross-sectional approach. The sample was pregnant women in their third trimester who underwent pregnancy check-ups at the Ranggo Community Health Center (UPTD). The sample was drawn using a simple random sampling method, with 94 participants. The bivariate analysis used was the Chi-Square test.

## 3. RESULTS AND DISCUSSION

Based on the research results, the following description of the characteristics of the research subjects was obtained:

Table 3.1 Frequency Distribution of Research Variables in Pregnant Women in the Third Trimester

|       | N | Research variables | N  | %    |
|-------|---|--------------------|----|------|
| 1     |   | Parity             |    |      |
|       |   | Primigravida       | 46 | 43,2 |
|       |   | Multigravida       | 48 | 56,8 |
| 2     |   | Education Level    |    |      |
|       |   | Low                | 52 | 55,3 |
|       |   | High               | 42 | 44,7 |
| 3     |   | Occupation         |    |      |
|       |   | Civil Servant      | 1  | 11,7 |
|       |   | Self employed      | 36 | 33,8 |
|       |   | Housewife          | 47 | 54,5 |
| Total |   |                    | 94 | 100  |

Based on table 3.1, it is known that there are 48 pregnant women with multigravida parity (56.8%). Meanwhile, there are 52 pregnant women with low education levels (55.3%). There are 47 pregnant women who are housewives (54.5%).

### 1. The Relationship Between Parity and the Incidence of Anemia in Pregnant Women

Table 3.2 Relationship between Parity and the Incidence of Anemia in Pregnant Women

| Anemia       |    |      |    |       |    |      |       | <i>P value</i> |
|--------------|----|------|----|-------|----|------|-------|----------------|
| Yes          |    | No   |    | Total |    |      |       |                |
| Paritas      | n  | %    | n  | %     | n  | %    | 0,005 |                |
| Primigravida | 14 | 14.8 | 32 | 34.1  | 46 | 48.9 |       |                |

|                 | Yes |      | No |      | Total |      | P value |
|-----------------|-----|------|----|------|-------|------|---------|
|                 | n   | %    | n  | %    | n     | %    |         |
| Education Level |     |      |    |      |       |      |         |
| Low             | 23  | 24,4 | 21 | 22,2 | 44    | 46,8 | 0.003   |
| High            | 18  | 19,2 | 32 | 34,1 | 50    | 53,2 |         |
| Total           | 41  | 43,6 | 53 | 56,3 | 94    | 100  |         |
| Multigravida    | 32  | 34,1 | 16 | 17   | 48    | 51,1 |         |
| <b>Total</b>    | 46  | 48,9 | 48 | 51,1 | 94    | 100  |         |

The results of the study showed that pregnant women in the third trimester who experienced anemia most often were multigravida status as many as 26 people (52%) and primigravida as many as 24 people (48%) with a p-value of 0.005 ( $p > 0.05$ ). This indicates that the relationship between parity factors and the incidence of anemia in pregnant women is not statistically significant. This is in line with the where the highest distribution was in high parity, namely 64.3% when compared to low parity as much as 40.4% [7]. The study also showed a relationship between parity and the incidence of anemia in pregnant women. This is in accordance with the theory that the higher the parity, the higher the risk of the mother to experience anemia in pregnancy [8]. High parity can increase the frequency of complications in pregnancy and childbirth, because women who have given birth frequently can result in damage to the blood vessels and vascularization of the uterine wall due to previous deliveries, resulting in inadequate blood flow to the placenta, which ultimately can reduce its function and affect the circulation of nutrients to the fetus. In addition, having a history of heavy bleeding can cause anemia in subsequent pregnancies [9].

## 2. The Relationship Between Parity and the Incidence of Anemia in Pregnant Women

Table 2.3 shows that the chi-square analysis showed a p-value of 0.003 ( $p < 0.05$ ), indicating a significant relationship between education level and the incidence of anemia in pregnant women.

These results align which found that of 19 respondents with anemia, 14 (73.7%) had low education, while 5 (26.3%) had high education. The chi-square analysis yielded a p-value of 0.011, concluding that there is a relationship between employment status and the incidence of anemia [10]. According to the researchers, low educational attainment predisposes pregnant women to anemia. Besides the possibility that income may not be sufficient to meet adequate nutritional needs, individuals with low educational attainment are also less likely to receive antenatal care (ANC) during pregnancy, making it more likely that symptoms of anemia will not be detected early [11].

A pregnant woman's education level influences her ability to maintain her own health and that of her unborn child. Highly educated mothers are more likely to act rationally, for example, by regularly attending prenatal checkups, taking vitamins, and eating nutritious foods. Adequate nutrition is achieved if consumption patterns are appropriate, thus increasing the likelihood of anemia during pregnancy. The prevalence of low educational attainment is likely due to the fact that many communities still adhere to traditional customs and marry young. Women's education is often considered

unimportant, as they believe that women will become housewives who only take care of the home and kitchen [12].

#### **4. CONCLUSION**

After conducting research on the Relationship between Anemia in Pregnancy and the Incidents in Pregnant Women at the Ranggo Community Health Center UPTD, it was concluded that there was a significant relationship between parity and the incidents of anemia in pregnant women. Chi-square test found a p value of 0.005. There was a significant relationship between education level and the incidents of anemia in pregnant women found a p value of 0.003. It is hoped that health workers, especially midwives, can increase empowerment learning efforts to the community by providing health education counseling or education in improving attitudes and behaviors to prevent anemia in pregnancy.

#### **5. THANKS**

We would like to thank the Ranggo Community Health Center (Puskesmas) for allowing us to conduct research on the causes of anemia in pregnant women. We hope that healthcare workers, particularly midwives, can increase their community empowerment efforts by providing health education and training to improve attitudes and behaviors to prevent anemia in pregnancy.

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