



Relationship Between History of Anemia in Pregnant Women and Newborn Weight in Rengel Public Health Center

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ABSTRACT

The causes of failure of mothers in practicing exclusive breastfeeding are various, such as the habit of giving prelactal feeding, giving formula milk because the milk does not come out, stopping breastfeeding because the mother or baby is sick, the mother is busy working so she does not have time to breastfeed the baby, and the mother wants to try formula milk (Salsabila, Meliana et al, 2020). This habit exacerbates the incidence of breast milk production which is not smooth. The purpose of this study was to determine the influence of consumption of Moringa leaves on the smoothness of daily breastfeeding in post partum mothers at Rengel Tuban Health Center. Anemia is a condition of body which does not have enough ferum (Fe) because the hemoglobin making process is blocked. Anemia for pregnant women can influence the baby weight because it does not get enough nutrition from the mother. Weight influence baby in adapt from intrauterine live to extrauterine live. The purpose of the study was to analyze bthe relation anemia in pregnant women and the baby weight who just born in Puskesmas Rengel. The design used was retrospective. Sampling which is used in this research is an purposive sampling. The sample is 32 women which anemia and bear in Puskesmas Rengel. This data is processed by sperm rank test in significant space, $\alpha = (0,05)$. The results of the study found that pregnant women who experienced severe anemia where 14 respondents, there are 10 (71,4%) babies who born in low weight. The result from the data analysis, have P value = $0,00 < \alpha (0,05)$. In conclusion, there is a corelation between pregnant women who have anemia and weight of baby who just born. So, it is suggested for pregnant women to consume food which have Fe inside, and Fe tablet.

Keywords: Anemia; Baby Weight

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INTRODUCTION

Anemia that occurs in pregnant women shows an increasing trend due to the strong influence of anemia in pregnant women on low birth weight, this encourages the need for information on how big the problem is both in Indonesia and several other countries. Maternal anemia increases the risk of giving birth to low birth weight (LBW), preterm birth and fetal death. Anemia in pregnant women has a significant effect on the incidence of low birth weight (LBW) because of the importance of nutrition during pregnancy and LBW, most cases of anemia in pregnant women are caused by iron deficiency (Fe). If it occurs continuously, the fetus will experience growth retardation and the mother is at risk of giving birth to LBW. Low birth weight (LBW) is still a maternal and child health problem in developing countries and is an indicator for predicting infant mortality, stunting, and disease in adulthood (Sienny Agustin, 2022)¹.

Based on WHO data, anemia in pregnant women is categorized as a global health problem with a prevalence of 29.6% in 2018, where in Indonesia itself from 2017 to 2019 the prevalence of anemia in pregnant women increased from 43.2% to 44.2. The mortality rate of newborns in Indonesia is still higher compared to other developing countries. Babies who experience LBW every year are around 20 million babies, 98.5% of whom are in developing countries. Based on data from the East Java Health Office Profile in 2021, efforts to prevent and overcome anemia were carried out through the provision of FE tablets. There were 541,534 births in 2021, with 18,665 LBW babies. Infant deaths due to LBW were 971, followed by Asphyxia, Sepsis, Tetanus Neonatorum. (East Java Health Office Profile, 2021)².

Profile of the Tuban Regency Health Office in 2020, there are factors that cause infant deaths to still be found, including cases of Low Birth Weight Babies, as in previous years, cases of LBW were the main cause of infant deaths. One of the causes of the high number of LBW cases in Tuban Regency is due to the still high number of cases of pregnant women with KEK and Anemia. During pregnancy, teenage girls who are prospective mothers do not want to increase their nutritional intake and there are also those who experience Hyperemesis (excessive nausea and vomiting) during pregnancy so that nutritional intake is reduced, causing pregnant women to have Anemia and KEK³. Data on the number of births in 2020 in Tuban Regency was 15,879 with a total of LBW of 751.

During pregnancy, a mother's body will form more red blood cells, so that the fetus' oxygen and nutritional needs are met. That is why many pregnant women experience anemia. Especially if the intake of iron, folic acid, and vitamin B12 is not sufficient. If the number of red blood cells in the mother's body is too low, the pregnant mother and fetus are at risk of malnutrition and oxygen deficiency. Of course, this can endanger the mother and fetus in the womb. In some cases, pregnancy anemia can increase the risk of various health problems, such as slow or undeveloped fetuses, premature birth, low

birth weight (LBW), Risk of damage to vital organs such as the brain and heart, in very severe cases. If the anemia experienced by pregnant women continues without treatment, there is a risk of the mother losing a lot of blood during childbirth. ⁴.

Low birth weight (LBW) is a condition in which a baby weighs less than 2.5 kilograms at birth. This condition can be caused by various things. Babies with low birth weight are susceptible to health problems, so they need extra care. Some of these factors include: Being born to a mother who has health problems during pregnancy, such as preeclampsia, high blood pressure, or malnutrition (anemia), Infection during pregnancy, Having genetic disorders or birth defects in the baby, Being born to a mother with low birth weight during pregnancy, The mother's age during pregnancy is less than 17 years or more than 35 years, Twin pregnancy. ¹.

With the increasing need for iron nutrients in pregnant women, there are consequences that the volume of food that must be consumed becomes greater. Therefore, for the regulation or management of consumption, it is regulated to eat more than usual or the volume is the same as usual but the frequency is added or becomes more frequent or usually three times to four times a day. In addition, to overcome the possibility of a lack of iron consumption, the government has created a nutritional package, namely providing iron supplements to each pregnant woman in the form of 90 tablets with a dose of 200 mg per tablet. With the supply of iron tablets, it is estimated that iron deficiency or anemia in pregnant women can be prevented so that there is no risk of low birth weight (LBW) babies. ⁵. From the description above, the author is interested in taking this research as a Scientific Paper entitled "The Relationship between History of Iron Deficiency Anemia in Pregnant Women and Low Birth Weight in Rengel Health Center" with the hope that the results of this study can determine whether there is a relationship between a history of iron deficiency anemia in pregnant women and the weight of newborns so that the incidence of LBW can be prevented optimally.

METHOD

The design used is retrospective. The sampling technique used in this study is purposive sampling, the sample is pregnant women who have anemia and give birth at the Rengel Health Center amounting to 32 respondents. The results of data collection are processed using the Spearman rank test with a significant distance $\alpha = (0.05)$.

RESULTS

1. General Data

Table 1. Frequency Distribution of Based on Age of Respondents at Rengel Community Health Center

| No | Variable | Frequency | Percentage (%) |
|----|--------------|-----------|----------------|
| 1 | Low | 18 | 16 |
| 2 | Medium | 38 | 33 |
| 3 | High | 58 | 51 |
| | Total | 114 | 100 |

Based on table 1, it can be seen that of the 32 respondents, pregnant women aged <20 / >35 years, namely 56% were due to the age of <20 years where the reproductive organs are not yet fully mature and at the age of >35 years where the condition of the female reproductive organs has experienced a decrease in the ability to reproduce.

Table 2. Frequency Distribution Based on Education Level

| No | Level of education | (f) | (%) |
|----|--------------------|-----|-----|
| | SD | 11 | 34 |
| | SMP | 9 | 28 |
| | SMA | 7 | 22 |
| | PT | 5 | 16 |
| | Total | 32 | 100 |

Based on table 2, it can be seen that of the 32 respondents, 41% of pregnant women had low levels of education, due to the low socio-economic status of pregnant women and also unwanted pregnancies.

2. Specific Data

Table 3. Distribution of frequency of occurrence of history of anemia in pregnant women at Rengel Health Center

| No. | Pre Test | (f) | (%) |
|-----|--------------|-----|-----|
| 1. | Light | 10 | 31 |
| 2. | Medium | 8 | 25 |
| 3. | Heavy | 14 | 4 |
| | Total | 32 | 100 |

Based on table 3, it can be seen that of the 32 respondents, 44% of pregnant women experienced severe anemia.

Tabel 4. Frequency Distribution of Newborn Baby Weight at Rengel Health Center

| No. | Weight | (f) | (%) |
|-----|--------|-----|-----|
| 1. | BBLR | 18 | 56 |
| 2. | BBLN | 12 | 38 |
| 3. | BBLL | 2 | 6 |
| | Total | 32 | 100 |

Based on table 4, it can be seen that of the 32 respondents, the majority of babies experienced LBW, namely (56%).

Tabel 5. Analysis of the Relationship between History of Anemia in Pregnant Women and Newborn Baby Weight

| History of Anemia | Newborn Baby Weight | | | | | | | |
|-------------------|---------------------|------|------|------|------|------|-------|-----|
| | BBLL | | BBLN | | BBLR | | Total | |
| | (f) | % | (f) | % | (f) | % | (f) | % |
| Light | 1 | 10 | 5 | 50 | 4 | 40 | 10 | 100 |
| Medium | 1 | 12,5 | 3 | 37,5 | 4 | 50,0 | 8 | 100 |
| Heavy | 0 | 0 | 4 | 28,6 | 10 | 71,4 | 14 | 100 |
| Total | 2 | 6,2 | 12 | 37,6 | 18 | 56,2 | 32 | 100 |

Based on table 5, it can be seen from 32 respondents, it was found that 71.4% of pregnant women who experienced severe anemia gave birth to LBW babies. Through the Spearman Rank correlation test, a significant value or P value = 0.00 < (0.05) was obtained so that it can be concluded that there is a relationship between the history of anemia in pregnant women and the weight of newborn babies.

DISCUSSION

1. Identification of Anemia Incidents in Pregnant Women at Rengel Health Center

In reality, when pregnant, a mother's body will form more red blood cells, so that the fetus' oxygen and nutritional needs are met. That is why many pregnant women experience anemia. Especially if the intake of iron, folic acid, and vitamin B12 is not sufficient. If the number of red blood cells in the mother's body is too low, the pregnant mother and fetus are at risk of malnutrition and oxygen⁶. Of course, this can endanger the mother and the fetus in the womb.

Based on the theory, anemia in pregnancy is a condition in which the mother has a hemoglobin (Hb) level below 11 g% in the first and third trimesters or a hemoglobin (Hb) level <10.5 g% in the second trimester⁷. Anemia during pregnancy is one of the problems that has received serious attention from the government⁸. Due to the large influence of anemia during pregnancy, then every pregnant woman must have a Hb (hemoglobin) check at least 2x during pregnancy⁹. That is once in the first trimester and once in the third trimester. And in certain conditions, Hb checks can be done more often. Hb examination in the first trimester is intended to determine whether the pregnant woman is suffering from anemia or not. So that prevention and immediate treatment can be carried out, to minimize the negative effects of anemia on pregnancy¹⁰. While Hb examination in the third trimester, because at 32 weeks of pregnancy there is a peak of blood thinning so that the risk of pregnant women experiencing anemia is high.¹¹

Signs and symptoms of anemia that are often found in pregnancy are complaints of fatigue, frequent dizziness, blurred vision, initial complaints of vomiting more Anemia in pregnancy has a negative effect on the mother, both in pregnancy, childbirth and in the postpartum period and the following period. Various complications according to¹², can arise due to anemia, including: abortion, premature labor, prolonged labor, postpartum hemorrhage, shock. Infection, premature birth⁷.

Anemia in pregnant women is categorized as a global health problem. The prevalence of anemia in pregnant women has increased from 43.2% to 44.2%. This will later have a significant impact on the condition of the mother and fetus¹.

How to prevent anemia in pregnant women is very important to know because anemia is quite common in pregnant women and is at risk of causing health problems for pregnant women and also the fetus, this condition can even be fatal if not treated immediately, to prevent anemia in pregnant women, including by routinely consuming iron supplements, folic acid, proper nutrition such as consuming fish, poultry such as chicken or duck, lean red meat, nuts, seeds, green leafy vegetables such as (spinach, broccoli and cabbage), fruits such as bananas and melons. In addition to consuming these foods, it is also recommended to consume foods high in vitamin C such as tomatoes, oranges, kiwi and strawberries, Vitamin C is needed by the body to absorb iron better¹³.

Preventing anemia during pregnancy can be started early because some women are at higher risk of experiencing anemia, namely by routinely checking the pregnancy with a midwife or at the Community Health Center, checking Hb levels during the first pregnancy visit and in the third trimester of pregnancy to prevent anemia¹⁴.

According to researchers, the cause of the high incidence of anemia in pregnant women is the lack of awareness of pregnant women to routinely check their pregnancy, especially checking Hb levels only once during pregnancy, low education levels, consumption of foods containing iron that are lacking and not fulfilled by consuming iron tablets as recommended, pregnant women need twice as much iron in the body, the need for iron in the body increases because during pregnancy the amount of blood needed also increases by 30-50%¹⁵. Lack of folate or folic acid, Low Hb Levels, Vitamin B12 Deficiency, Genetic factors, kidney disease, and Cancer¹⁶.

2. Identification of Newborn Weight Incidents at Rengel Health Center

In reality, low birth weight (LBW) is still a health problem for mothers and children and is an indicator for predicting infant mortality, stunting and disease in adulthood¹⁷. In some cases, pregnancy anemia can increase the risk of various health problems, such as slow or undeveloped fetuses, premature births, low birth weight (LBW) babies¹⁸.

Based on theory, newborns (neonates) are babies born up to 28 days or 4 weeks of age (UNICEF, 2019). Normal newborns are babies born at 37-42 weeks of gestation with a birth weight between 2500 grams and 4000 grams. Full-term babies are babies with a gestation period ranging from 37 weeks to 42 weeks (259 to 293 days) (Saifudin, 2020)²⁵. Birth weight is the baby's weight measured after 1 hour of the baby's birth. The normal weight of a baby at birth is between 2500 – 3999 grams. If it is less than 2500 grams (2499 grams), it is classified as a low birth weight (LBW) baby.¹⁶

Low birth weight (LBW) is a condition where the baby weighs less than 2.5 kilograms at birth. This condition can be caused by various things. Babies with low birth weight are susceptible to health problems, so they require extra care¹⁹. Some of these factors include: Being born to a mother who had health problems during pregnancy, for example preeclampsia, high blood pressure, or malnutrition (anemia), Infection during pregnancy, Presence of genetic abnormalities or birth defects in the baby, Born to a mother who was underweight during pregnancy, The mother's age at the time of pregnancy was less than 17 years or more than 35 years, Multiple pregnancies.¹¹

The term prematurity has been replaced with Low Birth Weight (LBW) because there are two causes of the birth of a baby weighing less than 2,500 grams, namely because the gestational age is less than 37 weeks, the weight is lower than it should be, even though of sufficient age, or because of the combination of both. (Journal of Reproductive Health, Sri Poedji Hastoety Djamin, 2020)¹. The death rate for newborns is still higher compared to other developing countries²⁰. About 20 million babies experience LBW every year, 98.5% of them in developing countries. The number

of births in 2021 was 541,534, with 18,665 LBW babies. Infant deaths due to LBW were 971, followed by Asphyxia, Sepsis, Tetanus Neonatorum²¹.

Preventing and controlling the weight of newborn babies is very important, including planning the pregnancy carefully, having regular pregnancy checks, consulting if there are congenital diseases, avoiding stress, maintaining a healthy body weight, consuming healthy food with balanced nutrition, consuming vitamins and minerals. For your little one's development, avoid smoking, drinking alcohol and using illegal drugs²².

In the opinion of researchers, one of the causes of the high number of LBW cases is because there are still high cases of pregnant women with anemia. Due to the lack of adequate nutritional intake for mothers and fetuses, there is a lack of compliance among pregnant women in consuming blood supplement tablets regularly, namely a minimum of 90 iron tablets during pregnancy²³. Data on the number of births that influence the weight of newborns include the period of pregnancy, factors of pregnant women such as pregnant women who experience problems during pregnancy such as anemia, high blood pressure, preeclampsia, even inadequate nutritional needs, socio-economic factors and fetal factors²⁴.

3. Analysis of the Relationship between the History of Anemia in Pregnant Women and the Weight of Newborn Babies at the Rengel Community Health Center

Based on the results of the Spearman rank analysis, it was found that $P \text{ value} = 0.00 = < \alpha$ (0.05), this proves that there is a relationship between a history of anemia in pregnant women and the weight of newborn babies²⁵.

In reality, anemia in pregnant women shows an increasing trend due to the strong influence of anemia in pregnant women on low birth weight babies²⁶. Anemia in pregnant women has a significant effect on the incidence of low birth weight (LBW) because of the importance of nutrition during pregnancy and LBW. If this occurs continuously, the result is that the fetus will experience growth restrictions and the mother is at risk of giving birth to LBW. ⁴

Based on theory, anemia most often occurs in pregnancy, which is one of the factors causing low birth weight (LBW) babies. ²⁷. Anemia is often found in pregnancy, this is because during pregnancy the need for nutrients increases and there is also increased bleeding in the blood and bone marrow during pregnancy²⁸.

This shows that there are still many pregnant women who experience anemia and this affects their babies, including low birth weight < 2500 grams because this can cause disruption and

obstacles to the growth of the fetus they are carrying so that the growth of the fetus, both body and brain cells, is hampered so that the baby is born. birth can be less than normal²⁹.

In this study, it was found that the majority of pregnant women experienced anemia and this affected the weight of the newborn, including low birth weight (LBW) babies, so it is necessary to carry out screening at the beginning of pregnancy and check blood hemoglobin levels so that later it can reduce the incidence of heavy babies. low birth weight, as well as counseling mothers about eating nutritious foods, routine pregnancy check-ups with health workers and taking blood supplement tablets regularly, so that the risk of low birth weight babies and other complications of pregnancy or childbirth can be overcome.³⁰

In the opinion of researchers, the incidence of pregnant women experiencing anemia also affects the weight of newborn babies, including low birth weight, premature birth, fetal death and in pregnant women, miscarriage, bleeding, disruption of labor and the postpartum period can also occur³¹.

CONCLUSION

Based on the results of the research and discussion in the previous chapter, the following can be concluded: Most pregnant women experience severe anemia, Most babies are born with LBW to anemic mothers, There is a significant relationship between anemia in pregnant women and birth weight which is shown by the value $P = 0.00 (<0.05)$.

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