



Relationship Between Daily Animal Protein Consumption with Anemia Status in Pregnant Women at the Masaran 1 Health Center

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ABSTRACT

One of the hemodynamic problems due to the lack of adequate nutritional intake that is often experienced by pregnant women is anemia (Mariana, 2018). The incidence of anemia or lack of blood in pregnant women in Indonesia according to Riskesdas 2018 is 48.9%, with 84.6% of anemia occurring at the age of 15-24 years, at the age of 25-34 by 33.7%, and by the age of 35-44 by 33.6%. The function of protein during pregnancy is as a means of transporting iron that will compose hemoglobin in the blood. Pregnant women with insufficient protein intake will experience anemia as much as 28.6% and the number of pregnant women who have good protein intake and not anemia will be 53.1%. The result of the bivariate analysis of the p-value value was .000. The value is less than 0.05 so it can be concluded that there is a relationship between daily animal protein consumption and anemia status in pregnant women at the Masaran I Health Center

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INTRODUCTION

Pregnant women are the most vulnerable group to nutritional needs which also contribute to influencing birth outcomes. One of the hemodynamic problems due to the lack of adequate nutritional intake that is often experienced by pregnant women is anemia. Anemia is a condition in which hemoglobin (Hb) levels in the blood are lower than normal, which varies according to age and gender (Mariana, 2018). The incidence of anemia or lack of blood in pregnant women in Indonesia according Riskesdas 2018 is 48.9%, with 84.6% of anemia occurring at the age of 15-24 years, at the age of 25-34 by 33.7%, and by the age of 35-44 by 33.6% (Validity profile Indonesia, 2020).

Based on the data of the Agency Central Java Province Health in 2021 the prevalence of anemia in pregnant women in Central Java is 43.5%. Meanwhile, the coverage of Fe tablets in Central Java in 2021 is 90.44% (Central Java Health Profile, 2021). One of the areas in Central Java that has a high number of pregnant women with anemia is Sragen. The prevalence of pregnant women with anemia in Sragen in 2015 was 57.1% and during the third trimester the most anemia.

In 2018, Sragen is a district that has a SEZ (Chronic Energy Deficiency) rate for pregnant women of 39.67%. Animal protein is the protein in food ingredients that come from animals, such as protein from meat, milk protein, and fish. Community animal protein consumption in pregnant women tends to be low, only 18.4% of the average population.

Animal and vegetable protein sources have different amounts of protein content and different amino acid compositions. The main sources of protein are plant-based foods such as legumes, seeds and legumes

(57% of the daily intake) followed by animal foods such as meat (18%) and milk (10%), although small amounts can also come from alternative sources such as algae, bacteria and fungi (mycoprotein) (Norhasanah, 2022).

Proteins function as catalysts, carriers, drivers, regulators, genetic expressions, neurotransmitters, structural amplifiers, immunity boosters, and growth. The quality of animal protein is better than vegetable protein, where animal protein has a more complete amino acid composition, contains iron (haem) that is easily absorbed, and the digestible value of protein is better than that of plant foods (Oktaviani, 2018). The function of protein during pregnancy is as a means of transporting iron that will compose hemoglobin in the blood. The function of iron is the formation of new cells and tissues including brain tissue in the fetus.

The results of the study conducted by Tarigan, (2021) found that pregnant women with insufficient protein intake would experience anemia as much as 28.6% and the number of pregnant women who had good protein intake and not anemia was 53.1%. This means that if protein intake is insufficient, pregnant women tend to experience anemia, and vice versa, if the protein intake category is good, they tend not to experience anemia. Mothers whose protein intake is less is 4.12 times more likely to develop anemia. Insufficient nutrition in the womb and early life can cause the fetus to undergo a regulatory response. The fetal regulatory response is a transition from intrauterine and extrauterine life, during which time the fetus undergoes a rapid physiological adaptation process. These adjustments include slowing down the growth rate and reducing the number and development of human cells, including brain cells and other organs. As a result of the regulatory response caused by malnutrition, short stature in adulthood is a form of regulatory response caused by malnutrition during pregnancy (Mariana, 2018).

According to the results of the study Apreleanu (2018) of 75% of premature births and low birth weight are also risk factors for stunting. Stunting is affected by iodine deficiency during pregnancy resulting in the fetus suffering from hypothyroidism, which develops into cretinism due to the role of thyroid hormones in the development, growth and maturation of the fetus. Folic acid deficiency causes anemia because folic acid plays a role in the normal metabolism of food into energy, cell maturation, DNA synthesis, and cell growth.

Based on the initial study, the Masaran Health Center found that 1 out of 4 posyandu had 30 pregnant women. The results of interviews with 5 pregnant women with complaints of fatigue easily, often feeling sleepy, dizzy and during pregnancy do not like meat and milk consumption because they will feel nauseous when consuming. The results of interviews with 4 mothers said that during the first to second trimester they consumed more vegetables and fruits. In the third trimester, 4 mothers began to be able to consume chicken or fish meat 2 times a week because the feeling of nausea had decreased.

METHODOLOGY

The research design used is Cross Sectional. The study population was all pregnant women suffering from anemia who checked Antenatal Care at the Masaran I Health Center. The sample in this study was 45 people suffering from anemia who examined Antenatal Care at the Masaran I Health Center. The inclusion criteria were pregnant women with anemia from the first to third trimesters at the Masaran I Health Center, respondents who conducted routine Antenatal Care checks at the Masaran I Health Center, respondents who were willing to be interviewed and fill out informed consent. The exclusion criteria were pregnant women with anemia who did not come during the study. The instrument used in this study is the Food Frequency Questionnaire. Test using the chi-square test.

RESULTS AND DISCUSSION

Risk of anemia in pregnant women for mothers and fetuses increase as it increases. Energy reserves gestational age, Anemia is most drained to meet often caused by the consumption of pregnant women's activities (Anggraini, iron-rich foods that are not 2020). adequately, iron is needed to Work is an activity that formation of red blood cells. On must be done mainly for pregnant women in the third trimester because they support their lives and also tend to experience family dilution. In addition to taking time, in the blood (hemodilation) and work gives experience and There is an increase in the volume of knowledge plasma, both directly and 30%-40%, the increase in blood cells is not due to the exchange red 18%-30% and hemoglobin information between friends on the spot 19%, physiologically occupational hemodilution.

Helps ease work heart. In pregnant women who are not work will certainly be less Pregnant women in the third trimester get wrong information experiencing anemia because the other is information about tend to pay less attention to the nutrition of pregnant women. In addition, pregnant women pregnancy. Pregnant women in the third trimester who have III thinks that he is obliged to do are used to being pregnant so that they feel that housework is not His body has no problems. From light and quite draining, In terms of nutrition, pregnant women in the third trimester tend to experience anemia lack of attention and activity during pregnancy due to fatigue and lack of rest. This is exacerbated if the pregnant woman has children, because the mother will be more focused on the child and family so that she does not pay attention to the

nutrition of her food (Mahmudian A. A., 2021).

Education Education is interpreted as a human effort to grow and develop innate potential, both physical and spiritual potential in accordance with the values that exist in society and culture. The level of education of pregnant women is related to awareness of the importance of health, choosing and processing foodstuffs, and the use of health services. Anemia is common in population groups with low levels of education.

This group generally lacks understanding the consequences of anemia, lacks access to information on anemia and its countermeasures, is less able to choose nutritious foods that contain higher iron, so that people with lower education levels are more likely to be affected by anemia than those with higher education (Harna, 2020).

Mother's age

The safest age for mothers to get pregnant is 20-35 years old because in women starting at the age of 20, the uterus and other parts of the body are really ready to receive pregnancy, also at that age women usually feel ready to become mothers. So the age of the mother during pregnancy is between 20-35 years old has the least risk of pregnancy and childbirth (Simorangkir, 2022).

Young gestational age requires more nutritional intake so that mothers with young age are prone to suffering from anemia in pregnancy and will be very susceptible to infection and bleeding. Pregnant women at a young age (<20 years old) will be at risk of developing anemia, this is because at that age there is still growth that requires more nutrients and biologically not optimal, their emotions tend to be stable, immature so they are easily stressed.

Adolescent pregnancy <20 years has a risk of frequent anemia, fetal growth and development disorders, miscarriage, prematurity, or the risk of BBLR, birth disorders, preeclampsia, and antepartum hemorrhage (Wahyuningsih, 2023)

Parity

The results of the examination were obtained that mothers with multigravida tend to have moderate anemia. This condition allows mothers to develop moderate anemia due to poor nutritional intake. Mothers with multigravida births are less likely to plan a pregnancy like the first pregnancy. In addition, there is a history of anemia in previous pregnancies

In the results of the examination, pregnant women with primigravida tend to have mild anemia. During the pregnancy of the first child, the mother still has a lot of time to prepare for her pregnancy and the mother is more focused on pregnancy. In terms of economy and nutrition, mothers pay great attention to nutritional intake for their babies.

Anemia is due to a lot of iron loss, this is caused during pregnancy a woman uses iron reserves in her body. Parity 1 to 3 is the safest parity from the perspective of maternal mortality and maternal and infant health. Parity 4 has a high risk of developing anemia, this is because the number of births (parity) can affect the mother's health so that the mother is susceptible to anemia.

Consumption of animal protein for pregnant women with anemia from the first to third trimesters at the Masaran I Health Center

Protein is useful for the growth and repair of body tissues. All foods of animal and plant origin contain protein. One-fifth of the body is made up of protein, part of it is in muscles, one-fifth in bones and cartilage, one-tenth is in the skin, the rest is in other tissues and body fluids. All enzymes, hormones, transporters of nutrients and blood, and the intracellular matrix are proteins. Protein, iron and pyridoxine serve as catalysts for heme synthesis. Protein plays a role in carrying iron to be used as new hemoglobin in the bone marrow (Maulida, 2023).

During pregnancy, mothers need all nutrients, including protein. The cellular components of the mother and fetus are mostly made up of proteins. Changes in the mother's body, such as the placenta also require protein. In order for all nutritional needs to be met, it is necessary to eat all types of food groups contained in the balanced nutrition guidelines.

Protein is a substance that builds body tissues, forms body structures, substances for growth, transports oxygen and nutrients as well as immunity for the body. Protein plays an important role in the transport of iron in the body, a lack of protein intake causes iron transport to be inhibited, resulting in iron deficiency. Foods that are high in protein, especially foods of animal origin, usually contain more iron (Soleha, 2021)

Animal protein intake can increase iron absorption in the body. Low protein consumption can cause low iron absorption by the body. This condition can result in iron deficiency in the body and can lead to anemia or a decrease in hemoglobin levels (Azizah, 2023)

Anemia in pregnant women from the first trimester to the third trimester at the Masaran I Health Center

Anemia is a condition or condition characterized by a decrease in hemoglobin (Hb) levels, hematocrit or the number of red blood cells. Hb and blood cell levels vary greatly depending on age, gender, altitude of a place, as well as certain physiological states. In anemia, the number of red blood cells decreases, the quality of hemoglobin, and the volume of hematocrit is below normal values per 100 ml of blood.

Red blood cells or Hb (hemoglobin decrease, so that the carrying capacity of oxygen for the needs of vital organs in the mother and fetus is reduced. During pregnancy, there are changes in the blood and bone marrow and the need for nutrients increases, which is why anemia is more common in pregnancy (Widiastini, 2023).

Anemia in pregnant women is classified into three. Mild anemia has a value of 1010.9 g/dL, moderate anemia 7-9.9 g/dL and severe anemia <7 g/dL (Wahyuningsih, 2023). Anemia in pregnant women can be caused by several factors, including a lack of protein and iron intake, mothers with chronic diseases, heavy blood loss during previous childbirth, pregnancy spacing and parity. Iron deficiency anemia is common in pregnancy, this type of anemia is usually normocytic and hypochromic.

Signs and symptoms of pregnant women with anemia are complaints of weakness, paleness, easy fainting, while the tension is still within normal limits (it is necessary to suspect deficiency anemia). Pregnant women who experience malnutrition will get tired quickly, often dizzy, swollen eyes, malaise, sore tongue, decreased appetite (anorexia), loss of concentration, shortness of breath, namely anemia and complaints of nausea, vomiting is more severe in young pregnant women (Rumiati, 2023)

Relationship between daily animal protein consumption and anemia status in pregnant women at the Masaran I Health Center

Protein is one of the essential body-building components. Protein is taken from the word protos, which in Greek means the most important. Protein can be found in all forms in the human body, one of which is enzymes made with protein as a raw material. In addition, protein can also be found in hair, nails, muscles, bones, and almost most tissues in the body. Hemoglobin, collagen, and myosin are formed from proteins (Suryana, 2019).

Protein in the human body plays a role as a former of blood grains (hemopoiesis), namely the formation of erythrocytes with hemoglobin, besides that protein plays an important role in iron transport in the body, because lack of protein intake will result in iron transport being inhibited so that iron deficiency will occur

The results of Tarigan's research, (2021) found that there is a relationship between protein intake and anemia status of pregnant women, with the risk that mothers whose protein intake is less than 4.12 times will experience anemia. Protein intake has an important role in anemia status in pregnant women. If the protein intake is good, the hemoglobin level of pregnant women is normal or does not experience anemia.

If protein intake is insufficient, anemia can occur because hemoglobin levels are less than normal. The lack of protein intake of pregnant women in this study is due to consuming small amounts, poor and regular eating habits, often consuming carbohydrate source foods such as noodles, and snack foods that cause pregnant women to feel full, and consuming vegetable protein more often than consuming animal protein.

The results of the study are in line with Soleha, (2021) that there is a relationship between protein intake and the incidence of anemia in pregnant women. Insufficient nutritional intake of pregnant women can have bad consequences for the mother and fetus such as experiencing disabilities or being born with a birth weight

Low (BBLR), anemia, miscarriage, and even have an impact on death. Protein intake needs of pregnant women based on Nutritional Adequacy Figures (AKG) is the addition of 20mg/day each trimester. Protein intake has an important role in the incidence of anemia in pregnant women. If the protein intake is sufficient, the hemoglobin level of the pregnant woman is normal or does not experience anemia. If protein intake is insufficient, anemia can occur because hemoglobin levels are less than normal.

The impact of anemia on babies born includes an increased risk of BBLR and SGA (Small for Gestational Age) events, an increase in the incidence of premature birth, newborn mortality, a decrease in APGAR scores, and a decrease in children's mental and motor development. Pregnant women who experience anemia result in low iron stores in the fetus, so the baby will be at risk of developing anemia at a very early age.

The Hb level in the mother's blood during pregnancy with the weight of the baby born, the lower the Hb level in the mother's blood, the greater the risk of the mother giving birth to a baby with a low birth weight (Khairani, 2022). Insufficient nutrition in the womb and early life can cause the fetus to undergo a regulatory response.

The fetal regulatory response is a transition from intrauterine and extrauterine life, during which time the fetus undergoes a rapid physiological adaptation process. These adjustments include slowing down the growth rate and reducing the number and development of human cells, including brain cells and other organs.

As a result of the regulatory response caused by malnutrition, short stature in adulthood is a form of regulatory response caused by malnutrition during pregnancy (Mariana, 2018).

CONCLUSION

The results of the bivariate analysis of the p-value are .000. This value is less than 0.05 so it can be concluded that there is a relationship between daily animal protein consumption and anemia status in pregnant women at the Masaran I health center.

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