DIETARY BEHAVIOR AND HISTORY OF NAUSEA AND VOMITING WITH PREGNANCY ANEMIA

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ABSTRAK: PRILAKU KONSUMSI MAKAN DAN RIWAYAT MUAL MUNTAH DENGAN ANEMIA KEHAMILAN

Latarbelakang: Prilaku kebiasan konsumsi makan yang kurang baik tidak dapat memenuhi kebutihan angka kecukupan gizi. Jumlah konsumsi makan dan jenis makan yang tidak sesuai gizi seimabng dapat berakibat gizi kurang, defesiensi zat besi dan kekurangan zat besi pada makanan. Mual muntah kehamilan memperburuk asupan nutrisi dan rawan beresiko terjadi anemia defesiensi zat besi. Tujuan penelitian untuk mengetahui factor prilaku konsumsi makan dan riwayat mual muntah dengan anemia kehamilan.

Metode: Penelitian ini menggunakan desain Analitik Uji Lamda dengan rancangan cross sectional untuk mengetahui hubungan variable independen dengan dependen. Populasi berjumlah 40 orang. Teknik sampling: total sampling. Instrumen kuesioner data jumlah makan, data jenis makan dan riwayat mual muntah diperoleh dari wawancara. Data anemia diperoleh dari buku KIA hasil pemeriksaan hemoglobin

Hasil::Prilaku kebiasaan konsumsi jumlah makan ibu hamil ≤ 2kali sehari terdapat anemia sedang 6 orang (600%), dan anemia berat 2 orang (100%). Prilaku konsumsi gizi tidak seimbang mengalami anemia berat 2 orang (100%), anemia sedang 10 orang (100%), anemia ringan 6 orang (75%)

Kesimpulan::tidak ada hubungan jumlah konsumsi makan dengan anemia, ada hubungan jenis konsumsi makan gizi seimabnag dengan anemia dan ada hubungan mual muntah dengan anemia pada kehamilan.

Saran: Prilaku kebiasaan jumlah konsumsi makan yang cukup dan jenis makan gizi seimbang dapat mencegah terjadinya mual muntah berlebih dan anemia pada kehamilan.

Kata Kunci: Jumlah Makan, Jenis Makan, Mual Muntah, Ibu Hamil

ABSTRACT

Introduction: Suboptimal dietary practices can lead to a failure in meeting the necessary nutritional demands. Insufficient food consumption and the intake of nutritionally imbalanced meals can culminate in malnutrition, iron deficiency, and a scarcity of iron in one's diet. Pregnancy-induced nausea and vomiting can further deteriorate nutritional intake, thereby escalating the risk of iron deficiency anemia. The objective of this research is to discern the association between dietary behavior and a history of nausea and vomiting in relation to anemia during pregnancy.

Methodology: This research employs an Analytical Lambda Test design with a cross-sectional framework to ascertain the relationship between independent and dependent variables. The study population comprises 40 individuals. A total sampling technique was utilized. Data pertaining to meal frequency, types of meals, and a history of nausea and vomiting were gathered through questionnaires. Anemia data were extracted from the KIA book's hemoglobin examination results.

Findings: Pregnant women who consume meals ≤ 2 times per day exhibit moderate anemia in 6 individuals (600%), and severe anemia in 2 individuals (100%). Those with unbalanced nutritional consumption experience severe anemia in 2 individuals (100%), moderate anemia in 10 individuals (100%), and mild anemia in 6 individuals (75%).

Conclusion: There is no discernible correlation between meal frequency and anemia. However, a correlation does exist between the consumption of nutritionally balanced meals and anemia, as well as between nausea and vomiting and anemia during pregnancy.

Recommendation: Sufficient meal frequency and the consumption of nutritionally balanced meals can mitigate excessive nausea and vomiting, and prevent anemia during pregnancy.

Keywords: Meal Frequency, Type of Meal, Nausea and Vomiting, Pregnant Women

INTRODUCTION

Pregnancy anemia is a medical condition characterized by a reduction in the concentration of red blood cells (hemoglobin) within the bloodstream. A deficiency in erythrocytes can lead to an insufficient oxygen-carrying capacity, failing to meet the physiological needs of the body. Anemia is diagnosed when the hemoglobin concentration in the blood is ≤ 11 g/dL during the first and third trimesters of pregnancy, and a hemoglobin concentration of ≤ 10.5 g/dL during the second trimester (Vera Dwi Yanti, Nia Risa Dewi, 2023).

The prevalence of iron deficiency anemia in developed nations is approximately 18%, with an average range of 63%-80%. In contrast, the prevalence in developing nations is around 30%. The incidence of anemia among pregnant women in Indonesia remained relatively high in 2021, at 24.5%, with maternal mortality due to iron deficiency anemia accounting for 40% of cases. National health research indicates that the incidence of anemia among pregnant women has risen by 11.8% over a five-year period, increasing from 37.5% in 2017 to 48.9% in 2022.

The primary cause of maternal mortality in Indonesia is hemorrhaging, one of the causes of which is iron deficiency anemia (Lia Yuliani*, Atikah Adyas, 2023). Factors influencing anemia include dietary habits, where a deficiency in nutrient intake containing iron, the presence of reabsorption disorders, and iron utilization disorders can result in: 1) loss of erythrocytes due to hemorrhaging, 2) decreased production of red blood cells due to deficiencies in folic acid, vitamin B12, and iron, and 3) damage to red blood cells. Red blood cells are produced by the bone marrow and distributed throughout the body (Ernawati. W et al., 2023).

Anemia in developing countries is often attributed to nutritional deficiencies, including iron, folic acid, and vitamins. Pregnant women constitute one of the risk groups for anemia. Common symptoms of anemia, such as nausea and vomiting experienced by pregnant women from early pregnancy, can decrease appetite and lead to iron deficiency anemia (Kumar et al., 2022). Symptoms of anemia often do not manifest unless the decrease in hemoglobin reaches 7 g/dL to 8 g/dL. Symptoms experienced by pregnant women may include dizziness, weakness, shortness of breath, worsening of congestive heart failure, tachycardia, and pale conjunctiva, thus necessitating an assessment of dietary behavior (Kementrian Kesehatan Indonesia, 2018).

Risk factors for anemia during pregnancy encompass five areas: 1) insufficient intake of nutrients containing iron, folic acid, and vitamin B12, 2) gestational diabetes, where there is an increase in fetal iron requirements due to hyperglycemia, 3) multiple pregnancies, 4) pregnant teenagers with a history of infectious diseases and genetic predispositions, 5) inflation and infection during pregnancy, such as HIV disease and tuberculosis (Martina Lenau, Eka Frenty Hardiningsih, Dwi Hartati, 2023).

Factors such as age, education, parity, gravidity, and diet are also associated with the occurrence of anemia during pregnancy (Pratiwi, Vita, 2019). Food intake determines the quality of nutrient absorption in the body, and eating patterns and frequency in meeting nutritional needs determine the health condition of pregnant women and fetuses (Nukita Febriyana Suryanti, Betanuari Sabda Nirwana, Putri Wahyu Wigati, 2022).

The recommended dietary pattern during pregnancy is to eat as often as three times a day and regularly with a healthy and balanced diet menu. Iron-containing food intake is related to the incidence of pregnancy anemia (Junita et al., 2023). However, another opinion posits that nutritional status is not related to the occurrence of iron deficiency anemia (Utama, 2021).

The assessment of the nutrition of pregnant women is derived from weight gain and upper arm circumference. Normally, weight gain in the first trimester of pregnancy is about 1-2.5 kg per month, the second trimester is 0.35-0.4 kg per week, and the third trimester is about 1 kg per week (Aguscik & Ridwan, 2019). Weight monitoring is carried out every time a pregnant woman undergoes an examination to assess the nutritional status of the mother through body weight and upper arm circumference. Other factors such as parity, pregnancy distance, antenatal care visits, and consumption of Fe tablets can also affect anemia during pregnancy (Novi Febriani, Sabtian Sarwoko, 2022).

Malnutrition during pregnancy is at risk of complications of iron anemia, pre-eclampsia, bleeding, infection, and other diseases. Food intake is a major factor in the occurrence of iron deficiency anemia, so that the concentration of hemoglobin in the blood decreases and the formation of red blood cells decreases, which will further exacerbate anemia. Pregnant women with thin nutritional status are at risk of 3.1 times anemia compared to (Martina Lenau, Eka Frenty Hardiningsih, Dwi Hartati, 2023).

The impact of pregnant women with anemia is at risk of complications in the fetus and in the mother, including complications in the fetus born prematurely, growth disorders and developmental disorders, low birth weight babies anemia in mothers can occur postpartum bleeding (Wulandari et al., 2021). Cesarean section delivery due to anemia indications (Anjas Dwi Purwanto, 2016).

A preliminary study was conducted at the Nelayan Public Health Center, Gresik Regency, from January to April 2024, a total of 10 pregnant women, namely 5 people in the first trimester, 3 people in the second trimester and 2 people in the third trimester. Information was obtained about nutrient consumption saying that eating patterns were irregular every day.

From this background, research was conducted on the factors of behavior and nausea and vomiting with pregnancy anemia to find the theoretical concept of pregnant women's behavior, the theoretical concept of nausea and vomiting and the theoretical concept of anemia with the specific aim of 1) Identifying the behavior of pregnant women's eating habits, 2) Identifying the behavior of pregnant women's eating habits, 3) Identifying a history of nausea and vomiting during pregnancy, 4) identifying pregnancy anemia, 5) Knowing the relationship between eating habits and a history of nausea and vomiting with pregnancy anemia.

RESEARCH METHODS

The research methodology incorporates an Analytical Lambda approach, utilizing a cross-sectional design to ascertain the correlation between independent and dependent variables. This investigation was executed over the period of February to March 2024. The study population comprised all pregnant women, amounting to a total of 40 individuals. A comprehensive sampling technique was employed for this study. Data pertaining to dietary habits were procured through interviews, which included six statements concerning daily meal frequency. Information regarding the types of meals consumed by pregnant women was gathered through interviews, encompassing eight statements about balanced nutrition. Data relating to the history of nausea and vomiting were obtained through direct interviews. Anemia data were extracted from the results of hemoglobin examinations documented in the KIA book.

RESEARCH RESULTS

Tabel 1.
Total Sum od Diet * Anemia

Total Diet	Anemia				Total
	No Anemia	Mild Anemia	Moderate Anemia	Severe Anemia	
≤ 2 times per day	0	0	6	2	8
	0%	0%	60%	100%	20%
2-3 times per day	7	8	4	0	19
	35%	100%	40%	0%	47.5%
≥ 3 times per day	13	0	0	0	13
	65%	0%	0%	0%	32.5%

Table 1. It is known that severe anemia in pregnant women who consume meals ≤ 2 times a day is found in 2 individuals (100%), moderate anemia in those who consume meals ≤ 2 times a day is found in 6 individuals (60%), and mild anemia in those who consume meals 2-3 times a day is found in 8 individuals (100%). From the Lambda Statistical Test analysis, a p-value of 0.45 ≥ 0.5 was obtained, indicating that there is no correlation between meal frequency and anemia in pregnant women.

Table 2.
Data on Type of Meal * Anemia

Type of Male	Anemia				Total
	No Anemia	Mild Anemia	Moderate Anemia	Severe Anemia	
Unbalanced nutrition	0	6	10	2	18
	0%	75%	100%	100%	45.%
Balance nutrition	20	2	0	0	22
	100%	25%	0%	0%	55%

Table 2. It is observed that pregnant women with moderate anemia who consume unbalanced nutrition amount to 10 individuals (100%), severe anemia is found in 2 individuals (100%), and mild anemia is found in 6

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individuals (75%). Meanwhile, pregnant women without anemia who consume balanced nutrition amount to 20 individuals (100%).

From the Lambda Statistical Test analysis, a p-value of 0.000 ≤ 0.5 was obtained. This indicates that there is a correlation between the consumption of balanced nutritional meals and anemia during pregnancy.

Table 3.
Data on Nausea_Vomiting* Anemia Crosstabulation

Nausea	Anemia				Total
	No Anemia	Mild Anemia	Moderate Anemia	Severe Anemia	
No nausea	8	0	0	0	8
	40%	0%	0%	0%	20%
Mild nausea	12	3	0	0	15
	60%	37.5%	0%	0%	37.5 %
Moderate nausea	0	5	9	0	14
	0%	62.5%	90%	0%	35%
Severe nausea	0	0	1	2	3
	0%	0%	10%	100%	7,3%

Table 3. It is observed that pregnant women with moderate anemia experiencing moderate nausea and vomiting amount to 9 individuals (90%) and severe nausea and vomiting in 1 individual (10%). Severe anemia is found in 2 individuals (100%) who experience severe nausea and vomiting. Moderate anemia is found in 5 individuals (62.5%) who experience mild nausea and vomiting, and mild anemia is found in 3 individuals (37.5%) who experience mild nausea and vomiting.

From the Lambda Statistical Test analysis, a p-value of 0.000 ≤ 0.5 was obtained, indicating that there is a correlation between nausea and vomiting and anemia during pregnancy.

DISCUSSION

Dietary Habits of Pregnant Women

Table 1. Observations indicate that pregnant women who typically consume meals ≤ 2 times a day experience severe anemia (100% of 2 individuals) and moderate anemia (60% of 6 individuals). Conversely, pregnant women who consume meals ≥ 3 times a day do not exhibit signs of anemia.

Sufficient dietary habits are crucial in meeting the escalated nutritional needs of pregnant women. However, eating habits should not only satiate but also fulfill the nutritional requirements essential for fetal growth and development. Eating habits are also correlated with anemia in pregnant women (Pratiwi, Vita, 2019). The portion or quantity of food consumed influences the nutritional value and iron content derived from food; insufficient food portions can lead to malnutrition (Hartati et al., 2023). According to another study, inadequate food intake is associated with malnutrition, leading to insufficient consumption of iron, protein, and vitamins found in food (Salma et al., 2023).

The research results yield a p-value of 0.45 ≥ 0.5, indicating no correlation between meal consumption and iron deficiency anemia. Prevention of anemia should commence from adolescence, with pregnant women consuming iron-rich foods, taking blood boosters during pregnancy and menstruation (do Amar(do Amaral E Melo et al., 2020).

This research reveals that the behavioral habit of consuming meals ≤ 2 times a day is associated with a risk of severe and moderate anemia during pregnancy. It underscores the importance of modifying behaviors by consuming sufficient meals to meet nutritional needs during pregnancy. Early pregnancy nausea and vomiting, one of the causes of decreased eating patterns in pregnant women, potentially risk causing anemia during pregnancy, which can impact complications in both the mother and baby, leading to causes of death.

Dietary Habits of Pregnant Women's Type of Meal Consumption

Table 2. Pregnant women with moderate anemia who consume unbalanced nutrition amount to 10 individuals (100%), severe anemia is found in 2 individuals (100%), and mild anemia is found in 6 individuals (75%). Meanwhile, pregnant women without anemia who consume balanced nutrition amount to 20 individuals (100%).

Eating frequency is related to nutritional status; less frequent eating during pregnancy can affect fetal growth and cause stunting in children (Herianto. & Rombi, 2016). Less frequent eating during pregnancy can result in low birth weight and premature babies (Utama, 2021). The leading cause of infant death is low birth weight at birth; eating frequency plays a significant role in the occurrence of low birth weight babies (Sri Wahyuni et al., 2021).

The Lambda Statistical Test analysis obtained a p-value of 0.000 ≤ 0.5, indicating a correlation between the consumption of balanced nutritional meals and anemia during pregnancy. This research found that the consumption of unbalanced nutritional meals causes severe and moderate anemia during pregnancy.

According to other research, pregnant women who consume less iron-rich food cause iron deficiency anemia, so the type of food consumed is related to the occurrence of anemia during pregnancy (Kadir, 2019). Unhealthy eating habits, with 91.7% experiencing anemia, are closely related to anemia during pregnancy (Pratiwi, Vita, 2019). Nausea and vomiting during pregnancy decrease appetite and reduce meal portions, potentially causing a lack of adequate nutrition during pregnancy. This is related to the occurrence of anemia (Nurjannah & Putri, 2021).

Prevention of anemia can be done by increasing pregnant women's knowledge about food consumption (Sukmawati et al., 2021). Prevention and handling of anemia by applying the principles of balanced nutrition include: 1) Consuming a variety of foods, 2) Adopting clean living behaviors, 3) Performing physical activities, 4) Regularly monitoring body weight (Kementrian Kesehatan Indonesia, 2018).

From this research, it is known that pregnant women who consume unbalanced nutrition experience severe and moderate levels of anemia. This shows a correlation between the type of food consumed and anemia in pregnant women. The purpose of balanced nutrition includes: supporting fetal growth and development, providing energy, and preventing complications such as anemia.

Nausea and Vomiting with Pregnancy Anemia

Table 3. It is observed that pregnant women with severe and moderate levels of nausea and vomiting experience severe and moderate anemia, respectively, and those with mild nausea and vomiting experience mild anemia. Meanwhile, pregnant women who do not experience nausea and vomiting do not experience anemia during pregnancy.

This research is consistent with previous findings that a lack of nutrient intake early in pregnancy due to symptoms of nausea and vomiting in early pregnancy, physical and psychological changes in the pregnancy process increase the nutritional needs of pregnant women, if not adequately met, are at risk of malnutrition, calorie energy deficiency (KEK) potentially less intake of iron, protein in food that is iron deficiency anemia (Mudlikah Siti,munisah,Yunita Nourma,B Ghurotul, Hariyani Ervin, 2022)

Nausea and vomiting are one of the determinants of the nutritional status of pregnant women (Mudlikah et al., 2022) Knowledge factor in food intake is related to the occurrence of anemia (Goreti et al., 2021). However, it differs from the opinion that the knowledge and attitude of pregnant women are not related to nausea and vomiting, so it is not related to anemia during pregnancy (Mudlikah & Ningrum, 2019).

It is known from the research results that a p-value of 0.000 ≤ 0.5 was obtained, indicating a correlation between nausea and vomiting and anemia during pregnancy. This research is reinforced by other research that anemia is related to the factor of nausea and vomiting and nutritional status in pregnant women (Sinaga, 2022).

Poor nutritional status causes pregnant women to experience protein deficiency quickly, resulting in gastric dysrhythmia that stimulates excessive nausea and vomiting (Nurbaity et al., 2019). Another statement is that pregnant women with poor nutritional status are at risk of 2.9 times anemia, but nutritional status plays a role of 4.7%(Utama, 2021). Anemia is not only influenced by nutritional status, several factors such as: knowledge, parity, age, education, occupation are characteristics related to the occurrence of anemia (Mahmudah, 2022).

Prevention and handling of anemia are not only done by increasing the number of meals, types of meals, and improving nutrition alone, but many factors need to be considered, including: consumption of blood-boosting tablets (Fe), physical activity, and regular antenatal care.

CONCLUSION

The behavioral habit of consuming meals ≤ 2 times a day is found in pregnant women who experience severe and moderate anemia. However, the research results show no correlation between meal consumption and anemia during pregnancy. Consumption of unbalanced nutritional meals is found in pregnant women with moderate and severe anemia, where there is a correlation between balanced nutrition and anemia. Pregnant women who experience moderate to severe levels of nausea and vomiting are found to have moderate and severe anemia, indicating a correlation between nausea and vomiting and anemia during pregnancy.

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The eating habits of pregnant women can influence the quality and quantity of food, so balanced nutritional content in food is very important to meet the nutritional needs of pregnant women and the fetus.

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