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The Effect Of Dragon Fruit Consumption On The Hb Levels Of Mildly Anemic Pregnant Women In Trimester Ii In The Working Area Of The Totokaton Puskesmas, West Tulang Bawang District

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ABSTRACT
Anemia in pregnancy is partly caused by iron deficiency with an incidence of 62.3%; anemia has negative impacts such as miscarriage, premature labor, bleeding, and shock. For anemia prevention, it is recommended to consume 60mg of Iron and 0.25 folic acid equivalent to 200mg ferrosulfate during pregnancy for a minimum of 90 tablets, in addition to consuming iron-rich foods and vitamin C such as dragon fruit. In 100 grams of dragon fruit contains 63.9 mg of iron and vitamin C. The research aim is to determine the effect of dragon fruit consumption on Hb levels in pregnant women with mild anemia in trimester II in the working area of Totokaton Community Health Center, West Tulang Bawang Regency. This research is a quantitative study with a pre-experimental design using a *one group pretest – posttest design* approach. The population of second-trimester pregnant women was 65 people with a sample of 30 respondents using purposive sampling technique. The research was conducted in the working area of Totokaton Community Health Center in September 2024. Data collection used observation sheets. Analysis was conducted using univariate bivariate (*paired sample t-test*). The research results showed that the Hb levels in pregnant women before being given dragon fruit was 10.2 g/dl and after was 11.1 g/dl. There was an effect of dragon fruit consumption on Hb levels in pregnant women with mild anemia in trimester II (p-value = 0.000). Recommendations for pregnant women with mild anemia to consume dragon fruit as complementary therapy, and for the Community Health Center as a reference for pregnant women with mild anemia, for researchers as application material for knowledge gained. Meanwhile, for the University, it can be used as a reference in the form of scientific work and journal publications, and for future researchers, it can be used as a reference in subsequent research..

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INTRODUCTION

Pregnancy is a physiological process, but due to certain factors, it can develop into a pathological condition, posing risks to both the mother and the fetus. Maternal health

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problems can occur before pregnancy and ultimately impact complications during pregnancy, requiring special attention to determine the quality of life thereafter (Hardaniyati et al., 2021).

Early detection before complications occur is a screening to identify potential complications that may happen in pregnant women. There are concerns about the surge in undetected high-risk pregnancies, leading to mortality. The high incidence of complications in mothers during pregnancy and childbirth can contribute to the high Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) (Nurfazriah et al., 2021).

Global data shows that 56% of pregnant women in low and middle-income countries (LMIC) suffer from anemia. The highest prevalence of anemia among pregnant women is in Sub-Saharan Africa (SSA) (57%), followed by pregnant women in Southeast Asia (48%), and the lowest prevalence (24.1%) is found among pregnant women in South America (Rianti et al., 2022), while in Indonesia, the prevalence of anemia is 42% (Lestari et al., 2023).

Anemia is a condition in which the erythrocyte mass and/or the circulating Hb mass cannot fulfill their function of providing oxygen to body tissues. A decrease in Hb can cause fatigue, tiredness, palpitations, tachycardia, shortness of breath, and angina pectoris (Siauta & Anita, 2020). Anemia during pregnancy can increase the risk of death during childbirth, giving birth to babies with low birth weight, fetal and maternal susceptibility to infections, miscarriage, and an increased risk of preterm birth (Nadiya et al., 2023). In 2019, out of 21 mothers who died, 17 died during the delivery process, with 11 (64%) due to bleeding, 5 (29%) due to eclampsia, and 1 (2.0%) due to other causes. Out of the 11 bleeding incidents, 8 (72%) were due to uterine contraction disorders (uterine atony), and 3 (27%) were due to birth canal rupture (Tusiana et al., 2021a).

Approximately 95% of anemia cases during pregnancy are due to iron deficiency (iron deficiency anemia). The causes are usually inadequate food intake (especially in adolescent girls), previous pregnancies, or normal recurring loss of iron in menstrual blood (which approaches a certain amount, usually occurring every month and thus preventing iron storage) (Mardiah et al., 2020).

The most common anemia in pregnancy is caused by iron deficiency, accounting for 62.3%, and it can have fatal consequences if not addressed immediately, including miscarriage, preterm labor, uterine inertia, prolonged labor, uterine atony, and causing bleeding and shock. Pregnant women are advised to consume 60 mg of iron and 0.25 folic acid, equivalent to 200 mg of ferrous sulfate, during pregnancy, with a minimum of 90 tablets. The administration of iron for prevention is 1x1 tablet, and for treatment (if Hb is less than 11 g/dl), it is 3x1 tablet (Romadoni & Wardani, 2023).

Pregnant women experience an increased need for iron as the gestational age progresses. This is evident in the first trimester, where the iron requirement is 0.8 mg/day, while in the third trimester, it becomes 6.3 mg/day (Santy et al., 2019). Foods that contain high iron include apples with 0.3 mg, watermelon with 0.2 mg, and bananas with 0.3%. Another fruit that can overcome anemia is dragon fruit because it contains iron, which is 0.55-0.65 mg/100 grams (Nurhayati & Fitriani, 2024). Therefore, the authors chose dragon fruit for this study. In 100 grams of dragon fruit, it contains nutritional values of 11.5 g carbohydrates,

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0.15-0.22 g protein, 0.21-0.61 g fat, 13-18O Brix sugar content, 0.2-0.9 g fiber, 0.005-0.01 g carotene, 6.3-8.8 mg calcium, 30.2-31.6 mg phosphorus, 0.55-0.65 mg iron, 60.4 mg magnesium, vitamins B1, B2, C, and 82.5-83 g water (Yanti & ., 2022). The water content of dragon fruit is relatively high at 90%, so it cannot be stored for a long time, only 7-10 days at a temperature of 14OC (Wulansari et al., 2022).

Based on the results of a pre-survey conducted on May 20, 2024, in the working area of the Totokaton Health Center, the target for K4 pregnant women in May was 215 in the working area of the Totokaton Health Center. From 20 pregnant women surveyed for hemoglobin levels using a digital Hb (EasyTouch), the survey results found that 13 mothers had anemia with Hb levels < 10 g/dl. It can be concluded that 70% of hemoglobin levels were below normal.

Based on the above phenomenon, the researcher is interested in researching: The effect of dragon fruit consumption on Hb levels of pregnant women with mild anemia in the second trimester in the working area of the Totokaton Health Center, West Tulang Bawang Regency.

METHODS

This is a quantitative study using a pre-experimental design with a one-group pretest-posttest design approach. The population in this study includes all second-trimester pregnant women in the working area of the Totokaton Health Center, West Tulang Bawang Regency, totaling 56 people. In this study, a sample of 30 people will be taken who will receive the treatment (provision of dragon fruit). The sampling technique used in this study is the total sampling technique. The research instrument uses a questionnaire. Bivariate analysis in the study uses the paired T-test.

Inclusion Criteria:

1. Pregnant women with gestational age of 13-27 weeks (Second Trimester)
2. Pregnant women willing to be respondents
3. Pregnant women willing to routinely consume iron supplement tablets (every day) and be orderly in consuming dragon fruit as recommended.

Exclusion Criteria:

1. Pregnant women with Mid-Upper Arm Circumference (MUAC) < 23.5
2. Pregnant women who have complications of infectious diseases such as diarrhea, acute respiratory infection (ARI), HIV.
3. Pregnant women with severe anemia.

RESULTS AND DISCUSSION

Table 1. Respondent Characteristics

Variable	Category	Frequency	Percentage
Age	20-25 years	11	37,0
	>25 years	19	63,0
Occupation	Housewife	23	76,0
	Working	7	24,0

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Variable	Category	Frequency	Percentage
Education	Elementary	2	6,0
	Junior High	7	24,0
	Vocational High	11	37,0
	Senior High	10	33,0
	Diploma	0	0,0
Parity	Primipara	8	24,0
	Multipara	22	76,0
Total		30	100,0

Based on Table 1, out of 30 respondents, 11 (37.0%) were aged 20-25 years, 19 (63.0%) were >25 years old, 23 (76.0%) were housewives, 2 (6.0%) had elementary education, 7 (24.0%) had junior high education, 10 (33.0%) had senior high education, 11 (37.0%) had vocational high education, 8 (24.0%) were primipara, and 22 (76.0%) were multipara.

Table 2. Average Hb Levels Before Dragon Fruit Administration in Totokaton Health Center Working Area

Hb Level	Mean	SD	Min	Max	N
Before	10,2	0,3	9,4	10,8	30

Based on Table 2, the average Hb level in pregnant women before dragon fruit administration was 10.2 g/dl with a standard deviation of 0.3 g/dl, minimum value of 9.4 g/dl, and maximum value of 10.8 g/dl.

Table 3. Average Hb Levels After Dragon Fruit Administration in Totokaton Health Center Working Area

Hb Level	Mean	SD	Min	Max	N
After	11,1	0,4	10,2	11,3	30

Based on Table 3, the average Hb level after dragon fruit juice administration was 11.1 g/dl with a standard deviation of 0.4 g/dl, minimum value of 10.2 g/dl, and maximum value of 11.9 g/dl.

Bivariate Analysis

Table 4. Effect of Dragon Fruit Consumption on Hb Levels in Pregnant Women with Mild Anemia in Trimester II at Totokaton Health Center Working Area

Pregnant Women's Hb Level	N	Difference	SD	T-test	P- Value
Before and after dragon fruit administration	30	0,9	0,2	15,1	0,000

Using paired sample t-test, a p-value = 0.000 (p-value < α = 0.05) was obtained, which means there is an effect of dragon fruit consumption on Hb levels in pregnant women with mild anemia in trimester II in the working area of Totokaton Health Center, West Tulang Bawang Regency.

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Discussion

Average Hb levels before giving dragon fruit

Based on the research results, it is known that the average Hb level in pregnant women before being given fruit is 10.2 g/dl with a standard deviation value of 0.3 g/dl, a minimum value of 9.0 g/dl, and a maximum value of 10.9 g/dl. In line with Astriana's research (2023), out of 15 respondents, before being given Dragon Fruit juice, there were 3 respondents (20%) with moderate anemia and 12 respondents (80%) with mild anemia. Research by Olii (2020) showed that the average Hb level of mothers before being given dragon fruit juice was 7.4. Soleha's research (2020) found that the average value of hemoglobin levels before giving dragon fruit juice was 9,761, with a standard deviation of 0.5304.

According to the theory, anemia in pregnant women, especially during the second trimester, is caused by a combination of increased physiological needs of the body and hemodynamic changes. In pregnancy, plasma volume increases by about 40-50% to support the needs of the growing fetus, placenta, and uterus. However, red blood cell (erythrocyte) production only increases by about 20-30%. The imbalance between the increase in plasma volume and erythrocytes causes relative hemodilution, resulting in a decrease in hemoglobin (Hb) concentration. This phenomenon is often referred to as physiological anemia of pregnancy (Cunningham, F. G., Leveno, K. J., Bloom, S. L., et al, 2018).

During pregnancy, the need for iron increases by 2-3 times compared to normal conditions. The total iron requirement is around 1000 mg, with details of 300-350 mg for fetal and placental growth, 500 mg for the increase in maternal erythrocyte volume, and 250 mg lost through excretion or bleeding. If the iron intake through food is insufficient or the body's iron stores are low, the body cannot meet the needs of erythropoiesis, resulting in iron deficiency anemia (Young, M. F, 2018).

The hormone erythropoietin, produced by the kidneys, increases during pregnancy to stimulate erythrocyte formation. However, if raw materials such as iron, folic acid, or vitamin B12 are insufficient, erythropoiesis is not optimal, leading to a decrease in Hb levels. Folic acid and vitamin B12 deficiencies are also common in pregnant women due to increased requirements for DNA formation and erythrocyte synthesis. These deficiencies can cause megaloblastic anemia. During pregnancy, hormonal changes affect iron metabolism and erythropoiesis. For example, hepcidin levels (a hormone that regulates iron metabolism) decrease during pregnancy to increase iron absorption. However, if iron intake remains low, this condition is not enough to prevent anemia (Young, M. F, 2018).

According to the researcher, differences in Hb levels in pregnant women before being given dragon fruit can be caused by several factors such as respondents may have different eating patterns, with variations in the consumption of iron-rich foods (such as red meat, green vegetables, and legumes). Factors such as the consumption of foods that inhibit iron absorption (for example, tea or coffee containing tannins) or those that increase absorption (such as vitamin C) can also affect Hb levels. Respondents who have low iron stores before pregnancy are more prone to anemia. Mothers with a history of chronic anemia or nutritional deficiencies are likely to have lower Hb levels compared to mothers with good nutritional

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status. Individual differences in the level of hemodilution during pregnancy can cause variations in Hb levels. In the second trimester, the increase in plasma volume often reaches its peak, thus affecting Hb levels. However, the level of hemodilution can differ for each individual. Economic factors can affect a mother's ability to obtain nutritious food, which directly impacts Hb levels. Habits such as lack of iron supplement consumption or neglect of antenatal care can affect the Hb status of pregnant women. Not all mothers may consume iron supplements regularly before the study. Some mothers may consume supplements but not in a disciplined manner, while others may not consume them at all. The average Hb level of 10.2 g/dl indicates that the majority of mothers are in the category of mild anemia.

Average hemoglobin levels after giving dragon fruit to second trimester pregnant women

Based on the results, it is known that the average Hb level after being given dragon fruit juice is 11.1 g/dl with a standard deviation value of 0.4 g/dl, a minimum value of 10.2 g/dl, and a maximum value of 11.0 g/dl. In line with research by Olii (2020), the average Hb level of mothers after being given dragon fruit juice was 9.0. Astriana's research (2023) showed that after being given dragon fruit juice, 10 respondents (66.7%) had normal HB levels, and 5 respondents (33.3%) had mild anemia. Soleha's research (2020) found that the average value of hemoglobin levels on the 15th day of giving dragon fruit juice was 11,583, with a standard deviation of 0.6888.

Pregnant women experience an increased need for iron as the gestational age progresses. This is evident in the first trimester, where the iron requirement is 0.8 mg/day, while in the third trimester, it becomes 6.3 mg/day (Santy et al., 2019). Foods that contain high iron include apples with 0.3 mg, watermelon with 0.2 mg, and bananas with 0.3%. Another fruit that can overcome anemia is dragon fruit because it contains iron, which is 0.55-0.65 mg/100 grams (Nurhayati & Fitriani, 2024). Therefore, the authors chose dragon fruit for this study. In 100 grams of dragon fruit, it contains nutritional values of 11.5 g carbohydrates, 0.15-0.22 g protein, 0.21-0.61 g fat, 13-18O Brix sugar content, 0.2-0.9 g fiber, 0.005-0.01 g carotene, 6.3-8.8 mg calcium, 30.2-31.6 mg phosphorus, 0.55-0.65 mg iron, 60.4 mg magnesium, vitamins B1, B2, C, and 82.5-83 g water (Yanti & ., 2022). The water content of dragon fruit is relatively high at 90%, so it cannot be stored for a long time, only 7-10 days at a temperature of 14OC (Wulansari et al., 2022).

Based on the explanation above, the researcher argues that dragon fruit increases hemoglobin levels in pregnant women who have anemia. This is supported by other factors that influence the increase in hemoglobin levels in pregnant women, such as the consumption of FE tablets, diet, maternal activity, nutrition, rest patterns, and the absence of a history of infectious diseases in pregnant women who were respondents, so that optimal results can be achieved.

The effect of dragon fruit consumption on Hb levels of pregnant women with mild anemia in the second trimester

Based on the results of statistical tests, p-value = 0.000 (p-value < α = 0.05), which means there is an effect of dragon fruit consumption on Hb levels of pregnant women with

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mild anemia in the second trimester in the working area of the Totokaton Health Center, West Tulang Bawang Regency.

The most common anemia in pregnancy is caused by iron deficiency, accounting for 62.3%, and it can have fatal consequences if not addressed immediately, including miscarriage, preterm labor, uterine inertia, prolonged labor, uterine atony, and causing bleeding and shock. Pregnant women are advised to consume 60 mg of iron and 0.25 folic acid, equivalent to 200 mg of ferrous sulfate, during pregnancy, with a minimum of 90 tablets. The administration of iron for prevention is 1x1 tablet, and for treatment (if Hb is less than 11 g/dl), it is 2x1 tablet (Minasi, 2021).

In line with Soleha's research (2020), there is an effect of giving dragon fruit on increasing Hb levels in pregnant women (p-value 0.000 < 0.05). Research by Olii (2020) found that there was an effect of agar and dragon fruit on hemoglobin levels in pregnant women with a p-value = 0.001. Astriana's research (2023) showed that there was an effect of giving dragon fruit juice on hemoglobin (HB) levels in pregnant women with a p-value = 0.000 < α = 0.05.

Dragon fruit is a nutritious source rich in nutrients and bioactive compounds beneficial for health. The following are its main contents: Carbohydrates: 11-13 g/100 g, functioning as an energy source; Protein: 0.5-1.1 g/100 g; Fat: 0.1-0.6 g/100 g, mostly in the form of healthy fats (unsaturated fatty acids). The iron content varies between 63.9 mg/100 g of fresh dragon fruit. This was validated with positive results through specific tests on red dragon fruit samples at the Polinela Laboratory unit on July 19, 2024, with certificate number 170/07/PL15.13.17/COA/2024, showing a higher iron content of 63.9 mg/100g, which is important for hemoglobin synthesis and overcoming anemia. The content of protein (1.7 gr), fat (3.1 gr), fat (3.1 gr), carbohydrates (9.1 gr), fiber (3.2 gr), sodium (10 mg), potassium (128 mg), phosphorus (14 mg), vitamin C around 1 mg/100 g functions as an antioxidant and increases the absorption of non-heme iron. The magnesium content is around 0.10 mg/100g, which is important to support the function of enzymes involved in energy metabolism and red blood cell formation.

Related to health, dragon fruit is very beneficial for maintaining digestive health, reducing the risk of cancer, lowering bad cholesterol levels and improving heart health, controlling blood sugar and reducing the risk of diabetes, boosting the immune system, preventing anemia in pregnant women, bone health, improving eye health, and maintaining the health of pregnant women (Aryanta, 2022).

The anemia value in the blood refers to the Guideline on hemoglobin cutoffs to define anemia in individuals and populations (WHO, 2024) in pregnancy: First trimester of pregnancy < 11 g/dl, Second trimester of pregnancy < 10.5 g/dl, and Third trimester of pregnancy < 11 g/dl (Kemenkes, 2023). The need for iron increases gradually during pregnancy to support fetal and placental growth, an increase in maternal blood volume, and the formation of iron stores for the baby (Kemenkes RI. (2019). The need for iron in the first trimester is 0.8 mg/day, which is relatively low because there has not been a significant increase in blood volume. In the second trimester, the need for iron is 4-5 mg/day due to a

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significant increase because of blood volume expansion to support oxygen and nutrient supply. In the third trimester, the need for iron is 6-7 mg/day, and blood volume reaches its peak, and the formation of iron stores for the baby becomes a priority (WHO, 2016).

According to the researcher, dragon fruit can increase the Hb levels of pregnant women with anemia. Unlike most other fruits, dates contain high carbohydrates and iron, so they can help prevent and treat anemia. In addition, the iron in dragon fruit is much easier for the body to absorb due to the presence of vitamin C in dragon fruit juice, which has been known to help iron absorption in the body (Thamrin et al., 2018).

The increase in Hb levels by 0.9 g/dl after the intervention of dragon fruit and Fe tablets every day reflects the combined nutritional effects of dragon fruit and iron supplementation because dragon fruit (Hylocereus spp.) contains important nutrients that play a role in hemoglobin formation. Dragon fruit contains moderate amounts of iron (around 0.5-0.65 mg per 100 grams). This iron is a major component of heme, which allows hemoglobin to bind and transport oxygen in the blood. Iron supports the production of erythrocytes in the bone marrow. Dragon fruit is rich in vitamin C (20-25 mg per 100 grams), which plays an important role in increasing Non-Heme Iron Absorption: Vitamin C converts non-heme iron into the ferrous (Fe^{2+}) form, which is more easily absorbed in the intestine. Vitamin C helps overcome the influence of compounds such as tannins, phytates, and calcium that can inhibit iron absorption. The antioxidant content (Betalain) in dragon fruit helps prevent oxidative damage to red blood cells, helps maintain the health of red blood cells, and improves hemoglobin function. Dragon fruit is also Rich in Other Nutrients (Magnesium and Folic Acid). Magnesium supports the function of enzymes involved in erythropoiesis. Folic acid helps the formation of DNA required for erythrocyte production.

Fe tablets consumed daily also play a major role in increasing Hb levels. The main mechanisms are: Fe tablets usually contain more bioavailable forms of iron, such as ferrous sulfate (Fe^{2+}), which are absorbed in the small intestine (duodenum and jejunum). The transport of iron into the intestinal enterocytes is mediated by specific transporters such as divalent metal transporter 1 (DMT1). The absorbed iron enters the bloodstream with the help of ferroportin, then is transported by transferrin to the bone marrow. In the bone marrow, iron is used for the synthesis of hemoglobin during erythropoiesis. Hemoglobin consists of globin (protein) and heme (iron-based structure). Iron supplementation increases heme production, thereby increasing the amount of hemoglobin. The daily dose of Fe tablets (around 60 mg elemental Fe) can meet the additional iron needs of pregnant women, which is around 4-6 mg/day for active erythropoiesis.

The vitamin C in dragon fruit supports the absorption of iron from Fe tablets and other food sources. This synergistic effect accelerates the increase in Hb levels compared to using only one intervention. Dragon fruit antioxidants protect erythrocytes from oxidative stress, which can prolong the lifespan of red blood cells. Folic acid and magnesium support the production of healthy erythrocytes. The combination of iron from Fe tablets and dragon fruit increases the body's iron stores, stimulating more optimal red blood cell formation.

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The researcher obtained significant results regarding the increase in hemoglobin levels in the blood after the administration of Fe tablets 60mg 2x1 per day and the provision of 100gr of dragon fruit per day in the morning for 14 days. This is supported by the results of laboratory tests conducted at the Polinela Analyst Laboratory on July 19, 2024, with certificate number: 170/07/PL15.13.17/COA/2024 with dragon fruit samples on dragon fruit stalks containing 63.9mg/100gr of iron. The combination of Fe tablets and dragon fruit has been proven to effectively increase Hb levels significantly within 14 days. This effect is produced from the direct contribution of bioavailable iron from Fe tablets and iron, vitamin C, and antioxidants from dragon fruit. The high iron content in dragon fruit (63.9 mg/100 g) supports this.

CONCLUSION

Based on the research results, the following conclusions can be drawn: It is known that the average Hb level in pregnant women before being given fruit is 10.2 g/dl with a standard deviation value of 0.3 g/dl, a minimum value of 9.4 g/dl, and a maximum value of 10.9 g/dl. It is known that the average Hb level after being given dragon fruit is 11.1 g/dl with a standard deviation value of 0.4 g/dl, a minimum value of 10.2 g/dl, and a maximum value of 11.9 g/dl. There is an effect of dragon fruit consumption on Hb levels of pregnant women with mild anemia in the second trimester in the working area of the Totokaton Health Center, West Tulang Bawang Regency (p-value = 0.000).

REFERENCE

Adhelna, S., Halifah, E., & Ardhia, D. (2022). Hubungan Kejadian Kurang Energi Kronis (KEK) Dengan Anemia Pada Ibu Hamil. *Jurnal Ilmiah Mahasiswa Fakultas Keperawatan*, *6*(1).

Angrainy, R. (2017). Hubungan Pengetahuan dengan Sikap Ibu Hamil dalam Pencegahan Anemia Pada Kehamilan Di Puskesmas Rumbai Bukit Tahun 2016. *Jurnal Endurance*, *2*(1), 62. https://doi.org/10.22216/jen.v2i1.1654

Aryanta, IWR (2022). Manfaat buah naga untuk kesehatan. *Widya kesehatan, 4.(2), 8-13.* https://doi.org/10.32795/widyakesehatan.v4i2.3386

Astriana, W., Eni Folendra Rosa, & Puspitasari, Y. (2023). Pengaruh PemberianJus Buah Naga Terhadap Kadar Hemoglobin Pada Ibu Hamil. *Lentera Perawat*, *4*(1), 62–65. https://doi.org/10.52235/lp.v4i1.200

Chandra, S., Suharjo, R., Prasetyo, J., & Efri, E. (2020). INVENTARISASI JAMUR PATOGEN TANAMAN BUAH NAGA (Hylocereus undatus) DIPT. Nusantara Tropical Farm (NTF) LAMPUNG TIMUR. *Jurnal Agrotek Tropika*, *8*(3), 563. https://doi.org/10.23960/jat.v8i3.4541

Hafid, A., & Hasrul, H. (2021). Hubungan Kejadian Pandemi Covid 19 Dengan Kecemasan Ibu Hamil Trimester Tiga. *Jurnal Keperawatan Muhammadiyah*, *6*(2), 151–155. https://doi.org/10.30651/jkm.v6i2.8252

Hardaniyati, Ariendha, D. S. R., & Ulya, Y. (2021). Kepatuhan Kunjungan Antenatal Care terhadap Sikap dalam Deteksi Dini Komplikasi Kehamilan pada Ibu Hamil. *Jurnal*

Kesehatan Qamarul Huda, *9*(2), 100–105. https://doi.org/10.37824/jkqh.v9i2.2021.277

Hastuty, Y. D., & Nitia, S. (2022). Ekstrak Daun Kelor Dan Efeknya Pada Kadar Hemoglobin Remaja Putri Moringa Leaf Extract and Its Effect on Hemoglobin Levels in Young Girls. *JPP) Jurnal Kesehatan Poltekkes Palembang*, *17*(1), 2654–3427. https://doi.org/10.36086/jpp.v17i1

Kemenkes RI. (2019). Angka Kecukupan Gizi yang Dianjurkan bagi Masyarakat Indonesia

Kesehatan Pertiwi Politeknik Kesehatan Bhakti Pertiwi Husada, J., Atma Battya, A., & Sugiarti Politeknik Kesehatan Bhakti Pertiwi Husada Kota Cirebon, F. (2023). Perbandingan Penggunaan Skincare yang Mengandung Niacinamide dan Vitamin C pada Ibu Hamil Trimester 2-3 dengan Melasma Gravidarum Face. *Jurnal Kesehatan Pertiwi*, *5*(1), 1.

Lestari, F., Zakiah, L., & Ramadani, F. N. (2023). Faktor Risiko Kejadian Anemia pada Ibu Hamil di BPM Bunda Helena Bukit Cimanggu Kota Bogor. *Jurnal Formil (Forum Ilmiah) Kesmas Respati*, *8*(1), 91. https://doi.org/10.35842/formil.v8i1.463

Lusi, M. W. (2019). Gambaran Proteinuria pada Ibu Hamil Trimester II di Puskesmas Seon. *Karya Tulis Ilmiah*, 23. http://repository.poltekkes- denpasar.ac.id/id/eprint/9795

Mardiah, Siska Ginting, Lisa Damanik, Adelina Sembiring, et al. (2020).Hubungan Karakteristik Ibu dengan Kejadian Anemia Pada Ibu Hamil di Wilayah Kerja Puskesmas Sei Bejangkar Kabupaten Batubara Tahun 2020. *Excellent Midwifery Journal*, *21*(1), 1–9.

Minasi, A., Susaldi, S., Nurhalimah, I., Imas, N., Gresica, S., & Candra, Y. (2021 Faktor yang mempengaruhi kejadian anemia pada ibu hamil. Open Access Jakarta Journal of Health Sciences, 1(2), 57-63.

Nadiya, S., Gani, A., Fitria, N., & Rizana, N. (2023). Hubungan Kepatuhan Ibu Hamil Mengkonsumsi Tablet Fe dengan Anemia di Puskesmas Peusangan Kabupaten Bireuen. *Journal of Healthcare Technology and Medicine*, *9*(1), 686. https://doi.org/10.33143/jhtm.v9i1.2931

Nurfazriah, I., Hidayat, A. N., Kartikasari, R., & Yusuffina, D. (2021). Peningkatan Pengetahuan Kader Tentang Kesehatan Ibu dan Anak dalam Upaya Pencegahan AKI Dan AKB di Desa Citaman. *International Journal of Community Service Learning*, *5*(4), 324. https://doi.org/10.23887/ijcsl.v5i4.405

Nurhayati, H., & Fitriani, E. S. (2024). Pengaruh Buah Naga (Hylocereus Polyrhizus) Terhadap Kadar Hemoglobin Pada Ibu Hamil Anemia. *Jurnal Penelitian Perawat Profesional*, *6*(1), 67–72.

Olii, N. (2020). *Pengaruh Agar-agar dan Jus buah Naga terhadap Kadar Hemoglobin pada Ibu Hamil*. *16*(2), 153–160.

Puspita, R. R. (2019). Pengaruh Pemberian Buah Naga Terhadap Peningkatan Kadar Hemoglobin Pada Ibu Hamil Di Puskesmas Sindang Jaya Kabupaten Tangerang. *Edu Dharma Journal: Jurnal Penelitian Dan Pengabdian Masyarakat*, *3*(2), 32. https://doi.org/10.52031/edj.v3i2.5

Rahmi, N., & Husna, A. (2020). Analisis Faktor Anemia Pada Ibu Hamil Di Wilayah Kerja Puskesmas Baitussalam Kabupaten Aceh Besar. *Journal of Healthcare Technology and Medicine*, *6*(2), 1250. https://doi.org/10.33143/jhtm.v6i2.1183

RIANTI, P. T., Sukarni, Tri Utami, I., & Febriyanti, H. (2022). Pengaruh Madu Terhadap Kadar Hemoglobin Pada Ibu Hamil. *Jurnal Maternitas Aisyah (JAMAN AISYAH)*, *3*(2), 159–165. https://doi.org/10.30604/jaman.v3i2.486

Romadoni, S. N., & Wardani, S. W. (2023). Asuhan Kebidanan KomprehensifPada Ny.HF dengan Pemberian Sari Kurma Penanganan Anemia Di Puskesmas Selawi. *Jurnal Kesehatan Siliwangi*, *4*(1), 636–646.

Rosiana, H., & Sundari, A. (2021). Pengaruh Kader Terhadap Praktik Kesehatan Ibu Hamil Pada Masa Pandemi Covid 19. *Midwifery Care Journal*, *2*(1), 21–26. https://doi.org/10.31983/micajo.v2i1.6655

Sahid, R., & Darmawansyih, D. (2020). Manajemen Asuhan Kebidanan Pada Ny "M" Dengan Perdarahan Postpartum Pada Tanggal 12 September S.D. 25 ktober Di Rsud Syekh Yusuf Gowa Tahun 2019. *Jurnal Midwifery*, *2*(2), 85–94. https://doi.org/10.24252/jm.v2i2a5 Sandra Fikawati, et al. (2018). *Gizi Ibu dan Bayi*.

Santy, E., Kebidanan, J., Kemenkes Pontianak, P., Barat, K., & Kesehatan Lingkungan, J. (2019). Pemberian Buah Naga Untuk Meningkatkan Kadar Hemoglobin Dengan Metode Eksperiment (Experiment Method of Dragon Fruit Intervention in Increasing Hemoglobin Level). *Jurnal Gizi KH, Desember*, *2019*(1), 2460–6855.

Siauta, J. A., & Anita, W. (2020). Pengaruh Pemberian Tablet Fe dan Jus Tomat Untuk Peningkatan Kadar Hemoglobin Pada Remaja SMK N 1 Mesuji Oki Sumatra Selatan. *Journal for Quality in Women's Health*, *3*(2), 117–121. https://doi.org/10.30994/jqwh.v3i2.59

Soleha, N., Astriana, & Amirus, K. (2020). *Pemberian jus buah naga mempengaruhi kadar hemoglobin pada ibu hamil*. *6*(3), 335–341.

Sudarmi, Wahyuni, I. G. A. P. S., Sundayani, L., & Angraeni, N. P. D. A. (2022). Efek Leaflet, Sms Reminder Terhadap Konsumsi Ttd DanPeningkatan Hemoglobin Pada Kehamilan. *Open Journal Systems*, *17*(1978), 473–484.

Thamrin, H., Budu, Nontji, W., & Shariff, S. A. (2018). Buah Naga (Hylocereus Polyrhizus) Meningkatkan Kadar Hemoglobin pada Remaja Putri. *Jurnal Kesehatan*, *1*(3), 197–203.

Tusiana, Y., Febriyanti, H., Komalasari, & Andika, T. H. (2021a). Pengaruh Jus Naga Merah Terhadap Kadar Haemoglobin Pada Ibu Hamil Trimester III Di Wilayah Kerja Upt Puskesmas Tri Karya Mulya Kabupaten Mesuji. *Jurnal Maternitas Aisyah (JAMAN AISYAH) Universitas Aisyah Pringsewu*, *2*(2), 99–108.

Tusiana, Y., Febriyanti, H., Komalasari, & Andika, T. H. (2021b). *Pengaruh Jus Naga Merah Terhadap Kadar Hemoglobin Pada Ibu Hamil Trimester III di Wilayah Kerja UPT Puskesmas Tri Karya ulya Kabupaten Mesuji Tahun 2021*. *2*(2), 99–108.

Wulansari, K. A., Hudi, L., & Saidi, I. A. (2022). Physical, Chemical and Organoleptic Characteristics of Red Dragon Fruit Instant Drink Powder (Hylocereus polyrhizus). *Procedia of Engineering and Life Science*, *2*(2). https://doi.org/10.21070/pels.v2i2.1290

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https://ejournal.seaninstitute.or.id/index.php/healt

Yanti, Y. E., & . R. (2022). Sosialisasi Manfaat Jus Buah Naga Untuk Ibu Hamil Dengan Anemia Di Desa Sidomukti Sekampung Lampung Timur Tahun 2022. *Jurnal Perak Malahayati*, *4*(2), 251–259. https://doi.org/10.33024/jpm.v4i2.8543

Young, M. F. (2018). Maternal anemia and risk of adverse pregnancy outcomes: A systematic review and meta-analysis. *Global Health Epidemiology and Genomics*, 3, e3