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THE EFFECT OF DRAGON FRUIT JUICE CONSUMPTION ON THE INCREASE OF HEMOGLOBIN (HB) LEVELS IN PREGNANT WOMEN

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ABSTRAK: PENGARUH KONSUMSI JUS NAGA TERHADAP PENINGKATAN KADAR HEMOGLOBIN (HB) PADA WANITA HAMIL

Latar Belakang: Dalam survei yang dilakukan pada tahun 2022, diperoleh data dari 126 wanita hamil, dengan 34 di antaranya (26,98%) mengalami anemia kehamilan, sedangkan 66 wanita hamil (73,02%) tidak mengalami anemia. Data yang dikumpulkan oleh penulis menunjukkan peningkatan persentase anemia selama kehamilan, dan angka ini masih termasuk dalam kategori tinggi, yang jika tidak diobati, dapat menyebabkan pendarahan saat persalinan.

Tujuan: Untuk mengetahui pengaruh konsumsi jus buah naga terhadap peningkatan kadar Hemoglobin (Hb) pada ibu hamil trimester ketiga di wilayah kerja Puskesmas Batu Ketulis, Kabupaten Lampung Barat, tahun 2023.

Metode: Penelitian ini bersifat kuantitatif, menggunakan pendekatan kuasi-eksperimental dengan desain pretest-posttest dua kelompok, dilakukan pada bulan Juni di Puskesmas Batu Ketulis, Lampung Barat. Penelitian ini melibatkan sampel 30 ibu hamil dengan anemia ringan, dibagi menjadi 2 kelompok: 15 ibu menerima jus buah naga sebagai kelompok eksperimen, dan 15 ibu lainnya hanya diberikan tablet Fe sebagai kelompok kontrol. Jus buah naga diberikan selama 14 hari dengan dosis 250 gram setiap pagi, bersamaan dengan tablet Fe. Pengukuran Hb dilakukan pada hari pertama sebagai pretest. Setelah 14 hari, Hb diukur kembali pada hari ke-15 sebagai posttest menggunakan alat ukur Easy Touch GCHb. Instrumen penelitian yang digunakan adalah alat Easy Touch GCHb, lembar observasi, dan 250 gram buah naga merah atau satu gelas per hari dan tablet Fe di pagi hari. Teknik pengambilan sampel purposif digunakan untuk pengambilan sampel. Analisis data melibatkan analisis univariat dan bivariat menggunakan uji t independen.

Hasil: Rata-rata kadar Hb ibu hamil sebelum intervensi adalah 10,18, dengan standar deviasi 0,490. Sementara itu, rata-rata kadar Hb setelah intervensi adalah 11,10 g/dl dengan standar deviasi 0,189. Uji statistik menghasilkan nilai P 0,001, menunjukkan efek signifikan konsumsi jus buah naga terhadap peningkatan kadar Hb pada ibu hamil trimester ketiga.

Kesimpulan: Jus buah naga telah terbukti meningkatkan kadar Hb pada ibu hamil.

Rekomendasi: Jus buah naga, bersama dengan tablet Fe, dapat diberikan selama kehamilan.

Kata kunci: Hemoglobin, Ibu hamil, Jus buah naga, Kehamilan

ABSTRACT

Background: In a survey conducted in 2022, data on 126 pregnant women were obtained, with 34 of them (26.98%) experiencing pregnancy anemia, while 66 pregnant women (73.02%) did not have anemia. The data collected by the author showed an increase in the percentage of anemia during pregnancy, and this figure still falls under the high category, which, if left untreated, can lead to bleeding during childbirth.

Objective: To determine the effect of dragon fruit juice consumption on the increase in Hemoglobin (Hb) levels in third-trimester pregnant women in the working area of Public Health Center Batu Ketulis, West Lampung Regency, in 2023.

Method: This research is quantitative in nature, using a quasi-experimental approach with a two-group pretest-posttest design, conducted in June at Public Health Center Batu Ketulis, West Lampung. The study included a sample of 30 pregnant women with mild anemia, divided into 2 groups: 15 women received dragon fruit juice as the experimental group, and the other 15 were given only Fe tablets as the control group. Dragon fruit juice was given for 14 days with a dosage of 250 grams each morning, along with Fe tablets. Hb measurement was conducted on the first day as the pretest. After 14 days, Hb was measured again on the 15th day as the posttest using the Easy Touch GCHb measuring tool. The research instruments used were the Easy Touch GCHb device, observation sheets, and 250 grams of red dragon fruit or one glass per day and Fe tablets

in the morning. Purposive sampling technique was used for sampling. Data analysis involved univariate and bivariate analyses using independent t-test.

Results: The average Hb level of pregnant women before intervention was 10.18, with a standard deviation of 0.490. Meanwhile, the average Hb level after intervention was 11.10 g/dl with a standard deviation of 0.189. The statistical test resulted in a P-value of 0.001, indicating a significant effect of dragon fruit juice consumption on the increase in Hb levels in third-trimester pregnant women.

Conclusion: Dragon fruit juice has been proven to increase Hb levels in pregnant women.

Recommendation: Dragon fruit juice, along with Fe tablets, can be provided during pregnancy.

Keywords: Hemoglobin, Pregnant women, Dragon fruit juice, Pregnancy.

INTRODUCTION

Pregnancy is a natural process, and the changes that occur in women during normal pregnancy are physiological, not pathological (Nugroho, T, 2004). Anemia is a condition characterized by a lack of red blood cells in the blood. Hemoglobin deficiency can lead to more serious complications for the mother during pregnancy, childbirth, and postpartum. Insufficient oxygen in the uterus can cause inadequate uterine contractions, leading to uterine atony and subsequent bleeding (Kasjmir et al., 2011). Anemia is one of the most common complications associated with pregnancy, and severe anemia has adverse effects on both the mother and the fetus. Approximately 75% of anemia during pregnancy is due to iron deficiency (Ani, 2015).

According to the World Health Organization (WHO) in 2020, the global prevalence of anemia in pregnant women is 36.5%. Based on Riskesdas (2018) data, the prevalence of anemia is 48.9% nationally, and in Lampung, it is as high as 69.7% (Lampung Provincial Health Office). A previous survey conducted at Batu Ketulis Public Health Center in 2020 showed that 30.47% of pregnant women had anemia, while in 2021 it was 23.53%, and in 2022 it was 26.98% (Batu Ketulis Public Health Center 2022).

During pregnancy, there is erythroid hyperplasia in the bone marrow, increasing the mass of Red Blood Cells (RBC). However, the disproportional increase in plasma volume leads to hemodilution, and anemia occurs in one-third of women during the third trimester, with the most common cause being iron deficiency (Janah, 2012). Midwives play a role in preventing anemia in pregnant women by providing at least 90 Fe tablets during pregnancy to prevent complications during pregnancy (Ministry of Health, RI, 2020). Although the government program for combating anemia in pregnant women through the administration of 90 Fe tablets during pregnancy has been implemented, anemia in pregnant women still occurs. This is due to various factors, including insufficient iron intake from food and incorrect ways of consuming Fe tablets, such as not taking them daily, consuming them with coffee, milk, or experiencing side effects like nausea, vomiting, and changes in bowel movements (Safitri et al., 2019).

One alternative to increasing iron levels in the blood is by consuming fruits high in iron and vitamin C. One such fruit is dragon fruit, which contains 0.16-0.20 mg of iron as well as Vitamin B1, Vitamin B2, and Vitamin C (Noor, 2016). In an initial survey conducted by the researcher on February 18, 2023, through direct interviews with 10 pregnant women in the working area of Public Health Center Batu Ketulis, 6 pregnant women had below-normal Hb levels and stated they never consumed dragon fruit, while 4 pregnant women had normal Hb levels and said they frequently consumed dragon fruit. The researcher chose to study dragon fruit because of its high iron and vitamin C content, which are beneficial for pregnant women. Additionally, dragon fruit is abundant in the Batu Ketulis area, but its utilization as a non-pharmacological therapy for anemia is still rarely used. With the high prevalence of anemia during pregnancy, the researcher was interested in conducting the study "The Effect of Dragon Fruit Juice Consumption on the Increase in Hb Levels in Third-Trimester Pregnant Women in the Working Area of Batu Ketulis Public Health Center, West Lampung, in 2023".

RESEARCH METHODS

This study used a quantitative approach with a quasi-experimental design of a two-group pretest-posttest design. The research was conducted at Public Health Center Batu Ketulis, West Lampung. The study was carried out in June 2023. The population in this study consisted of all pregnant women with anemia who visited the working area of Public Health Center Batu Ketulis, West Lampung, in June 2023, totaling 30 individuals. A sample of 30 pregnant women was selected and divided into two groups: 15 pregnant women received dragon fruit

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juice and Fe tablets as the experimental group, while the other 15 were given Fe tablets only as the control group. Hemoglobin (Hb) measurement was done on the first day, known as the pretest, by measuring the Hb level of pregnant women, which is below normal < 11 g%, and the results were recorded. The intervention involved administering therapy of red dragon fruit juice weighing 250 grams or 1 glass per day, along with Fe tablets in the morning (experimental group), and Fe tablets only to the control group. After 14 days of dragon fruit juice consumption, the Hb level was measured again on the 15th day, known as the posttest, using the Easy Touch GCHb measuring device to assess any changes in the Hb level of pregnant women. The research instruments used were the Easy Touch GCHb device, observation sheets, and red dragon fruit weighing 250 grams. The sampling technique used was purposive sampling, where samples were selected based on criteria determined by the researcher (Notoatmodjo, 2018). Data processing involved editing, processing, and cleaning. Univariate and bivariate data analysis were performed using the independent t-test.

RESEARCH RESULTS

Univariate Analysis

Based on Table 1, the results of the analysis show that the Hemoglobin (Hb) levels of third-trimester pregnant women before given dragon fruit juice in the working area of Batu Ketulis Public Health Center, West Lampung Regency, 2023, have an average value of 10.180, indicating that the respondents experienced mild anemia, with a standard deviation of 0.4902.

Table 1
Hemoglobin (Hb) Levels of Third Trimester Pregnant Women Before Given Dragon Fruit Juice in the Working Area of Batu Ketulis Public Health Center, West Lampung Regency, 2023

Hb	N	Mean	Std. Dev	Std, Eror	CI-95%
Pretest	15	10,180	0,4902	0,1266	0,3321-0,3188

Table 2
Hemoglobin (Hb) Levels of Third Trimester Pregnant Women After Given Dragon Fruit Juice in the Working Area of Batu Ketulis Public Health Center, West Lampung Regency, 2023

Hb	N	Mean	Std. Dev	Std, Eror	CI-95%
Posttest	15	11,100	0,1890	0,0488	0,1680-1,5786

Based on Table 2, the results of the analysis show that from 15 respondents, it is known that after 14 days of giving dragon fruit juice, there was an increase in hemoglobin levels in pregnant women, with an average value of 11.10 and a standard deviation of 0.1890.

Table 3
Average Hemoglobin Levels of Third Trimester Pregnant Women in the Control Group on Day 1 in the Working Area of Batu Ketulis Public Health Center, West Lampung Regency, 2023

Hb	N	Mean	Std. Dev	Std, Eror	CI-95%
1 day	15	10,187	0,3720	0,0960	0,3332-0,3199

Based on Table 3, the results of the analysis show that from 15 respondents, it is known that on day 1 in the control group, the average value is 10.187 and the standard deviation is 0.3720.

Table 4
Average Hemoglobin Levels of Third Trimester Pregnant Women in the Control Group on Day 14 in the Working Area of Public Health Center Batu Ketulis, West Lampung Regency, 2023.

Hb	N	Mean	Std. Dev	Std, Eror	CI-95%
14 days	15	10,727	0,3390	0,0875	0,1680-1,5786

Based on Table 4, the results of the analysis show that from 15 respondents, it is known that after day 14, the control group has an average value of 10.727 and a standard deviation of 0.3390.

Bivariate Analysis

Based on Table 5 above, it can be seen that the increase in hemoglobin levels in third trimester pregnant women after being given dragon fruit juice with a mean of 11.100, indicates an improvement from mild anemia to normal. On the other hand, the hemoglobin levels in third trimester pregnant women who were only given Fe tablets on day 14 have a mean of 10.727, indicating that the respondents still experienced mild anemia. The result of the statistical test obtained a P-value = 0.001, indicating that there is a significant effect of consuming dragon fruit juice on the increase of hemoglobin levels in pregnant women.

Table 5
The Effect of Dragon Fruit Juice Consumption on the Increase of Hemoglobin in Third Trimester Pregnant Women in the Working Area of Batu Ketulis Public Health Center, West Lampung Regency, 2023

Variable	N	Mean	Std. Dev	P -Value	CI-95%
Dragon Fruit Juice	15	11,100	0,1890	0,001	0,1654-0,5812
Tablet FE	15	10,727	0,3390		

DISCUSSION

Hemoglobin (Hb) levels in pregnant women during the third trimester before the administration of dragon fruit juice.

Hemoglobin (Hb) levels in pregnant women during the third trimester before being given dragon fruit juice in the Working Area of Batu Ketulis Public Health Center, West Lampung Regency, in the year 2023, with a mean value of 10.180 g/dl, indicating mild anemia among the respondents. Consistent with Supariasa's theory (2016), Hemoglobin is widely used to determine the prevalence of anemia. Garby et al. stated that assessing anemia status based solely on Hb levels is insufficient, thus additional examinations are necessary. Hemoglobin serves as an oxygen-carrying compound within red blood cells. Hemoglobin can be chemically measured, and the amount of Hb per 100 ml of blood can be used as an index of oxygen-carrying capacity in the blood. In line with the research conducted by Chendriany, E. B., Kundaryanti, R., & Lail, N. H. (2021), the Influence of Dragon Fruit Juice Consumption on Hb Levels in Pregnant Women in the Third Trimester with Anemia at the Taktakan Public Health Center in Serang-Banten in the year 2020. This study employed a quasi-experimental design with a pre-test and post-test using a control group. The sample consisted of 30 pregnant women, comprising 15 in the Control group and 15 in the Intervention group. The research results showed a significant difference before and after the administration of dragon fruit juice, tested using the t-test. The Average Hb Levels in the Intervention group were 11.107 with a standard deviation of 1.1392, while in the Control group; the average value was 9.120 with a standard deviation of 1.4473, signifying the effectiveness of dragon fruit juice consumption in increasing Hb levels in pregnant women.

According to the researcher, low Hb levels can indicate anemia, and the accuracy of Hb values depends on the method used, with a precision of up to 2–3%. Anemia symptoms include weakness, reduced appetite, low energy, decreased concentration, headaches, susceptibility to infections, dizziness, and a pale appearance of the eyelids, lips, and nails. Addressing anemia in pregnant women can involve iron supplementation and improving daily dietary quality. In this study's findings, the lowest Hb level before treatment was 9 g/dl, classified as moderate anemia. This condition affected pregnant women's daily activities, like cooking and household chores. The highest recorded Hb level was 10.9 g/dl, indicating mild anemia. Out of all respondents, 15 pregnant women fell into the category of moderate anemia, with Hb values ranging from 9 to 10 g/dl. The researcher observed that before receiving dragon fruit juice with added iron (Fe), many pregnant women had anemia. This lack of knowledge among pregnant women regarding how to raise Hb levels might have contributed to this outcome. Data from Table 4.3 displayed a mean of 10.18 g/dl, indicating mild anemia among respondents before consuming dragon fruit juice. This data implies that many pregnant women in the Batu Ketulis Public Health Center still experience mild anemia. Consequently, the researcher conducted this study to raise the Hb levels of pregnant women in the Batu Ketulis Public Health Center area, aiming to prevent anemia during pregnancy. The lack of awareness among pregnant women about properly consuming iron

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tablets could be attributed to the high consumption of coffee in the West Lampung Regency area. This factor might hinder the absorption of iron in the body. Therefore, the research aims to educate pregnant women on the correct way to consume iron tablets.

Hb levels in pregnant women in the third trimester after being given dragon fruit juice in the Batu Ketulis Public Health Center area, West Lampung Regency, in 2023, showed a Mean of 11.100 g/dl, indicating an improvement from mild anemia to normal levels.

Hb levels in pregnant women in the third trimester after receiving dragon fruit juice align with Manuaba's theory (2010), which defines anemia as Hb levels in the first trimester of pregnancy < 11 g/dl, in the second trimester < 10.5 g/dl, and in the third trimester < 10 g/dl. Hb levels in pregnant women occur due to increased red blood cell production, where normal hemoglobin values (12 to 16 g/dl) and normal hematocrit values (37% to 47%) are notably reduced. A more significant decrease is observed during the second trimester, when rapid blood volume expansion occurs. If hematocrit levels drop to 35% or below, women are considered anemic (Benson, 2009). Anemia is defined by Hb levels in the blood, where baseline Hb levels are considered anemic if they are 13 g/dl in men, < 12 g/dl in women, and < 11 g/dl in pregnant women (Saifuddin, 2008). Consistent with the study conducted by Chendriany, E. B., Kundaryanti, R., and Lail, N. H. (2021), the research demonstrates significant differences before and after administering dragon fruit juice, as indicated by the t-test analysis. The intervention group showed an average Hb level of 11.107 g/dl with a standard deviation of 1.1392, while the control group had an average value of 9.120 g/dl with a standard deviation of 1.4473. These findings indicate the effectiveness of dragon fruit juice in increasing Hb levels in pregnant women.

In this study, the Hb levels were assessed after a 14-day intervention involving the consumption of dragon fruit juice and iron tablets. The results showed an increase in Hb levels, indicating that the mothers successfully adhered to the therapy instructed by the researchers and followed standard procedures. Moreover, the respondents incorporated daily iron-rich foods into their diets, such as spinach, cassava leaves, salted fish, various forms of fresh fish, and regular consumption of dragon fruit juice. However, the study also identified that a few individuals still experienced mild anemia. This could be attributed to the relatively short trial period of 14 days, suggesting that a longer duration might be required for more pronounced effects. According to the researchers, the elevation of Hb levels in pregnant women is influenced by both dietary and supplement intake that enhances Hb levels. Apart from age-related risk factors, like being under 20 or over 35, which can impact nutritional status, factors such as the uterus' ability to accommodate the fetus for mothers under 20 and the likelihood of multiple pregnancies for mothers over 35 can pose nutritional challenges. The researchers highlighted the significant role of dragon fruit in improving Hb levels, particularly among pregnant women who commonly experience anemia during pregnancy. Beyond its Hb-boosting properties, dragon fruit is easily accessible, especially in the West Lampung area where it's often found in household gardens. This study not only provides insights for pregnant women to share with their families and neighbors, but also underscores that dragon fruit, beyond being a delicious fruit, holds substantial benefits for enhancing Hb levels.

Bivariate

The Influence of Dragon Fruit Juice Consumption on the Increase in Hemoglobin (Hb) Levels in Pregnant Women in the Third Trimester

The study explored the impact of consuming dragon fruit juice on the elevation of Hemoglobin (Hb) levels in pregnant women during the third trimester. The findings revealed that following the consumption of dragon fruit juice, there was a notable increase in Hb levels for pregnant women in the third trimester. The mean Hb level recorded was 11.100 g/dl, indicating a shift from mild anemia to normal levels. Conversely, among pregnant women in the same trimester who solely received iron tablets for duration of 14 days, the mean Hb level observed was 10.727 g/dl, suggesting mild anemia. Statistical analysis yielded a P-value of 0.001, signifying a significant correlation between the consumption of dragon fruit juice and the elevation of Hb levels in pregnant women during the third trimester in the working area of Batu Ketulis Public Health Center, West Lampung Regency, in the year 2023.

According to the theory proposed by Rahmawati et al. (2019), the high content of vitamin C in dragon fruit significantly aids in the absorption process of non-heme iron by transforming ferric form into ferrous form, thereby facilitating the body's iron absorption process. The elevated levels of both iron and vitamin C in dragon fruit contribute to an iron absorption rate that is four times faster compared to when consumed without vitamin C. This aligns with the findings of a study conducted by Ani, M. (2022) that investigated the Influence of

Dragon Fruit Juice Administration on Hemoglobin Levels in Pregnant Women in the Third Trimester. The research results revealed that after the intervention, the Hb levels increased from 9.8 g/dl to 11.9 g/dl in the treatment group and from 10 g/dl to 10.4 g/dl in the control group. The administration of dragon fruit juice demonstrated a significant impact on Hb levels before and after the intervention in both the treatment and control groups. Notably, there were differences between the treatment and control groups with the same values, yielding a significance level of p=0.001 (<0.05).

According to the researchers, addressing anemia in pregnant women can involve enhancing nutritional intake, with a focus on foods rich in vitamin C, such as dragon fruit juice. Previous studies have extensively explored the benefits of red dragon fruit in elevating hemoglobin levels. For instance, a study involving a 3-day intervention with 200g of dragon fruit juice demonstrated a noteworthy increase in hemoglobin levels from 10.7 g/dl to 11.4 g/dl, attributed to the iron content facilitating hemoglobin formation and the presence of vitamin A aiding oxygen binding (Wahyuningsih et al., 2021). In this study, the intervention group, receiving both dragon fruit juice and iron tablets, witnessed significant overall Hb level improvement, compared to the control group that received only iron tablets. While mild anemia persisted in some intervention group members, their Hb levels experienced a substantial average increase of 0.7 g/dl post-intervention, compared to the control group's average increase of 0.5 g/dl without intervention. These findings underscore the significant impact of dragon fruit consumption in elevating Hb levels, especially among pregnant women.

According to the researchers, a decline in Hb levels among certain respondents can be attributed to factors such as a history of low body weight and a habit of consuming coffee or tea in the morning during pregnancy to alleviate nausea. Continuous consumption of tea and coffee can hinder the absorption of iron, both from tablets and dietary sources. Furthermore, the lack of improvement in Hb levels among some pregnant women could be linked to stress, sleep patterns, and inadequate dietary habits. Inadequate food intake, particularly in small portions during pregnancy, could impact the absorption of iron present in food, iron tablets, and even dragon fruit juice. The presence of iron in dragon fruit plays a role in the maturation of erythrocytes, with the bone marrow requiring various other precursors for effective erythropoietin, including iron (Fe), vitamin C, vitamin E, vitamin B12, thiamine, riboflavin, and oxygen (O2), all necessary for erythropoietin hormone functionality (Rahmawati et al., 2019). In the research findings, it was observed that the increase in Hb levels in the control group was due to the mothers' adherence to consuming iron tablets correctly, facilitating iron absorption. Conversely, the intervention group showed an elevation in Hb levels due to the presence of compounds like protein, vitamin B1, and vitamin C in dragon fruit, which aid in iron absorption.

Notably, the intervention group exhibited a more substantial increase in Hb levels compared to the control group, with the highest increase being 2.3 g/dl and an average increase of 0.92 g/dl over the 14-day intervention period with dragon fruit. This indicates that dragon fruit can facilitate iron absorption within the body. While the control group, who received only iron tablets without any additional interventions, experienced an increase in Hb levels, the rate of increase was not as significant as observed in the intervention group with dragon fruit, indicating an increase of 2 g/dl with an average increase of 0.89 g/dl. This suggests the potential of dragon fruit as an effective means to raise Hb levels among pregnant women with anemia in the third trimester, potentially preventing complications during childbirth. Interestingly, the study demonstrated a rapid elevation in Hb levels among pregnant women with Hb levels as low as 9 g/dl compared to those with Hb levels of 10. This variation can be attributed to factors such as the respondents' strong determination to increase their Hb levels, driving them to consume nutritious foods with enthusiasm. The intervention group witnessed a substantial rise in Hb levels, with an increase of 2.3 g/dl over 14 days, while the control group with an initial Hb level of 9.2 g/dl also saw an increase of 2 g/dl after 14 days of consuming only iron tablets. The comparison between the intervention and control groups, both initially having Hb levels of 10.1 g/dl, revealed an increase of 0.8 g/dl in the intervention group and 0.5 g/dl in the control group after 14 days. Additionally, the pretest Hb examination highlighted an interesting finding, as among the 15 respondents with anemia, one respondent had the lowest Hb level of 9 g/dl and was employed as a laborer. Economic status can influence one's nutritional status, and in this study, the respondent's proactive efforts, including regular consumption of dragon fruit juice and iron tablets, coupled with avoiding iron-absorption-inhibiting foods like coffee close to iron tablet consumption, contributed to significant improvement. This respondent's dedicated change in dietary habits led

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to a substantial positive outcome, effectively transforming mild anemia into a normal Hb status.

CONCLUSION

Based on the findings and discussions presented in the previous chapter, the following conclusions can be drawn:

The average hemoglobin value before consuming dragon fruit juice was 10.18 with a standard deviation of 0.4902. The average hemoglobin value after consuming dragon fruit juice was 11.10 with a standard deviation of 0.1890. There is a significant effect of consuming dragon fruit juice on the increase of hemoglobin levels in pregnant women in the third trimester (p value 0.001 < 0.05).

RECOMENDATION

For pregnant mothers, it is recommended to consistently consume dragon fruit juice along with iron tablets throughout the pregnancy period. Dragon fruit is readily available, especially in Lampung Barat region, and it significantly aids in increasing hemoglobin levels. Batu Ketulis Public Health Center and health care providers are encouraged to regularly provide counseling and advice to pregnant women, emphasizing the importance of consuming supplementary foods such as meat and iron-rich vegetables, as well as dragon fruit juice rich in vitamin C to enhance iron absorption from meals. Health care providers should also remind pregnant women about the correct way to consume iron supplements. For future researchers, this study's findings can serve as a reference for conducting further investigations. They could consider introducing additional variables alongside dragon fruit, such as guava, to compare their impact on hemoglobin levels. This would provide insights into which variables are more effective and lead to a rapid increase in hemoglobin. Such future studies could guide health care providers in recommending specific fruits or their sequence to achieve the most effective and rapid increase in hemoglobin levels.

REFERENCES

Amalia, E. (2021). *Kajian Konsentrasi Buah Naga Merah (Hylocereus Polyrhizus) Dan Buah Pisang Ambon Lumut (Musa Acuminata Colla) Terhadap Mutu Fisikokimia Dan Organoleptik Selai Sebagai Topping Pizza* (Doctoral dissertation, Universitas Muhammadiyah Malang).

Ani, L. S., & Utami, N. W. A. (2015). Konsumsi besi folat, tingkat kecukupan energi dan zat besi berhubungan dengan kejadian anemia ibu hamil di Kabupaten Jember. *Public Health and Preventive Medicine Archive*, *3*(1), 3-10.

Ani, M. (2022). Pengaruh Pemberian Jus Buah Naga Terhadap Kadar Hemoglobin Pada Ibu Hamil Trimester III. *Jurnal Kebidanan*, *11*(2), 155-163.

Arisman. (2010). *Gizi dalam Daur Kehidupan*: *Buku* Ajar Ilmu Gizi. Jakarta:EGC.

Bakta. (2017). *Hematologi Klinik Ringkas*. Jakarta: EGC.

Chendriany, E. B., Kundaryanti, R., & Lail, N. H. (2021). Pengaruh Pemberian Jus Buah Naga terhadap Kadar Hb Pada Ibu Hamil Trimester III dengan Anemia di UPTD Public Health Center Taktakan Serang-Banten Tahun 2020. *Journal for Quality in Women's Health*, *4*(1), 56-61.

Defrin, D. (201). Relationship of Ferritin Levels and Vitamin B12 Levels Pregnant Women Anemia on Baby Birth Weight. *Journal of Midwifery*, *3*(2), 94-102.

Dinas Kesehatan Propinsi Lampung. (2021). *Profil Kesehatan Propinsi Lampung* 2021. Lampung.

Erlita, O., Martika, N. T., & Rahma, I. R. (2011). *Hubungan Antara Tingkat Kontrol Asma dengan Kualitas Hidup Pasien Asma Umur Delapan Belas Sampai Dengan Lima Puluh Lima Tahun di BBKPM Surakarta* (Doctoral dissertation, Universitas Muhammadiyah Surakarta).

Idawati, N. (2012). Budidaya Buah Naga Hitam. *Yogyakarta: Pustaka Baru*.

Janah, Nurul. (2012). *Buku Ajar Asuhan Kebidanan Kehamilan.* Yogyakarta: CV Andi Ofset.

Khumaira, M. (2012) Ilmu Kebidanan. *Yogyakarta: Citra Pustaka Yogyakarta.*

Manuaba, IBG. (2010). *Ilmu Kebidanan, Penyakit Kandungan dan Keluarga Berencana Untuk Pendidikan Bidan.* Jakarta: EGC.

Manuaba, IBG. (2014). *Ilmu Kebidanan, Penyakit Kandungan dan Keluarga Berencana Untuk Pendidikan Bidan.* Jakarta: EGC.

Mellyani, M., & Syalaisa, S. (2022). Pengaruh Konsumsi Jus Buah Naga Terhadap Parameter Hemoglobin Pada Keha 65 Trimester Ketiga. *Edu Masda Journal*, *6*(2), 141-151.

Mochtar. (2013). *Sinopsis Obstetri (Jilid I)*. Jakarta: EGC.

Notoatmojo, S. (2018). *Metodelogi Penelitian Kesehatan* Rineka Cipta: Jakarta.

Nugroho, *T*. (2012). Obsgyn : Obstetri dan ginekologi. Yogyakarta: Nuha. Medika.

Prawirohardjo. (2016) *Ilmu Kebidanan.* Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo.

Puspita, R. R. (2019). Pengaruh pemberian buah naga terhadap peningkatan kadar hemoglobin pada ibu hamil di Public Health Center Sindang Jaya Kabupaten Tangerang. *Edu Dharma Journal: Jurnal penelitian dan pengabdian masyarakat*, *3*(2), 32-43.

Rahayu, S. (2014). Budidaya Buah Naga Cepat Panen. *Jakarta: Infra Hijau*.

Rachmawati, M., & Yulendasari, R. (2019). Penyuluhan manfaat buah naga merah dalam menurunkan kadar gula darah pada penderita diabetes melitus. *Indonesia Berdaya*, *1*(2), 89-94.

Rukiyah, Ai, Yeyeh. (2019) *Asuhan Kebidanan Patologi Kebidanan 4.* Jakarta: Trans Infomedia.

Safitri, D., Yunola, S., & Farida, T. (2023). Relationship Between Parity, Anemia And Chronic Energy Deficit (CED) With Incidence Of Low Birth Weight. *Jurnal kesehatan dan pembangunan*, *13*(25), 15-21.

Supariyasa, I D. (2012). *Penilaian Status Gizi.* Jakarta: Penerbit *Buku*. Kedokteran EGC.

Widyaningsih, A., Setiyani, O., Umaroh, U., Sofro, M. A. U., & Amri, F. (2017). Effect of consuming red dragon fruit (Hylocereus costaricensis) juice on the levels of hemoglobin and erythrocyte among pregnant women. *Belitung Nursing Journal*, *3*(3), 255-264.

Wasnidar, D., & Padila, P. (2018). Hubungan Pola Makan dengan Kejadian Anemia pada Ibu Hamil di Wilayah Kerja Public Health Center. *Jurnal Keperawatan Silampari*, *1*(2), 108-122.

Yulianti, E. S., Nurfauzi, I. N., & Winarni, W. (2019). Karakteristik dan aktivitas antioksidan sabun padat dengan penambahan ekstrak kulit buah naga (Hylocereus polyrizhus). *Indonesian Chemistry and Application Journal*, *3*(1), 14-23.

Yuni, Erlina Natalia. (2015). *Kelainan Darah.* Yogyakarta: Nuha Medika.

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