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Effectiveness of Giving Ambon Banana, Avocado and Honey Juice on Increasing Hemoglobin (Hb) Levels in Pregnant Women

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ABSTRACT

Background: Anemia in pregnancy is a condition in which the mother has a hemoglobin level below 11 gr% in the first and third trimesters, and a level below 10.5 gr% in the second trimester. Most anemia in pregnancy is caused by iron deficiency and acute bleeding.

Purpose: The effectiveness of giving ambon banana, avocado and honey juice to increase hemoglobin levels in pregnant women.

Methods: True experiment with pretest and posttest control group design. The sampling technique used was purposive sampling obtained a sample of 34 respondents, namely 17 control and intervention groups. Analysis using the Independent t-test.

Results: The Independent t-test statistical test resulted in p=0.001<0.05, meaning there was an influence of Ambon Banana, Avocado and Honey juice on increasing hemoglobin levels in pregnant women.

Conclusion: Giving ambon banana, avocado and honey juice is effective in increasing hemoglobin levels in pregnant women. Bananas contain iron which will stimulate the production of hemoglobin in the blood. Avocados have important nutrients, namely vitamin C, vitamin E, vitamin K, iron, folic acid, potassium and quite high levels of calories and fat which are useful as a source of energy. Honey contains important minerals which help form hemoglobin.

Keywords: ambon banana, avocado, hemoglobin, honey, pregnant woman

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BACKGROUND

The high Maternal Mortality Rate (MMR) in Indonesia is the main focus of solving health problems in Indonesia. The Maternal Mortality Rate (MMR) is still around 305 per 100,000 Live Births, not reaching the target of 183 per 100,000 KH in 2024 (Kemenkes, 2023).

Currently, the number of anemia in pregnant women is still high, data from the World Health Organization (WHO), 20% of 515,000 deaths worldwide are caused by anemia. Based on Riskesdas 2018 data, the prevalence of anemia in pregnant women is 48.9%, meaning that 4-5 out of 10 pregnant women suffer from anemia. Then the prevalence of anemia based on age is known to be 84.6% occurring at the age of 15-24 years (Ri, 2021).

In Indonesia, based on the results of Riskesdas (2018), the prevalence of anemia in pregnant women is 37.1%. The government has implemented an anemia control program in pregnant women by providing 90 Fe tablets during pregnancy to reduce anemia, but anemia is still quite high (MARYAM, 2020).

In South Sulawesi, according to the Health Profile in 2018, pregnant women who experienced mild anemia were 57,612 people (50.38%), moderate anemia was 49,933 people (43.67%) and severe anemia was 6,759 people (5.9%) (Dinkes Sulawesi Selatan, 2018) (Ramadhani et al., 2021).

Based on data from the Galesong Health Center in November 2023, the number of pregnant women was 133 pregnant women and 34 pregnant women experienced anemia. From the results of a brief interview in the preliminary study that had been conducted, pregnant women said they only consumed the food they wanted without paying attention to its nutritional value and rarely consumed fruits and vegetables. So that iron has not been met due to bad eating habits which are suspected of causing pregnant women to experience anemia.

Anemia in pregnancy is a condition in which the mother has a hemoglobin level below 11 gr% in the first and third trimesters or a level below 10.5 gr% in the second trimester. Most anemia in pregnancy is caused by iron deficiency and acute bleeding, and not infrequently the two interact with each other. Iron deficiency anemia is anemia that occurs due to a lack of iron in the blood. This anemia occurs in around 62.3% of pregnancies, and is a common anemia in pregnancy (Marhaeni, 2023).

Anemia is one of the risks of maternal death, the incidence of low birth weight (LBW), fetal and maternal infections, pregnancy, and premature birth. Anemia in pregnancy is considered one of the main risk factors that contribute to 20-40% of maternal deaths directly or indirectly through heart failure, preeclampsia, antepartum hemorrhage, postpartum hemorrhage, and puerperal sepsis. As well as low birth weight which can contribute to an increase in the percentage of infant mortality in developing countries (Safitri, 2020).

Prevention of anemia in pregnant women can be done by meeting iron needs. In addition, a balanced diet is very important for pregnant women's menus. Treatment for pregnant women who experience anemia can be by consuming a balanced diet containing iron, folic acid, vitamin C and vitamin B12. In addition, Ambon bananas are very good because the high iron content can stimulate the production of hemoglobin in the blood for anemia sufferers and honey contains iron, vitamins C, A and B12 which function to form red blood cells and hemoglobin (Lestari & Inti, 2020).

Bananas contain iron which will stimulate the production of hemoglobin in the blood and also help prevent anemia. Vitamin C contained in bananas is also good for health to help rebuild the immune system. Bananas are also relatively easy to digest foods compared to other foods, making it easier for someone with a low immune system. Vitamin C also

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increases iron absorption and helps blood formation, these two health benefits make bananas useful as an addition to their diet in reducing anemia (Puspawidari et al., 2023).

Avocados have important nutrients, namely vitamin C, vitamin E, vitamin K, iron, folic acid, potassium and fairly high levels of calories and fat which are useful as a source of energy. The iron contained in avocados is useful for the formation of red blood cells, increasing oxygen flow throughout the body, preventing and treating anemia. Vitamin C can help absorb iron and calcium. Vitamin C can also bind iron in Fe tablets. The iron and vitamin C content in avocados can prevent or treat anemia (Situmorang, 2023).

Honey contains important minerals such as calcium, phosphorus, potassium, sodium, iron, magnesium and copper. Other contents include 75% glucose, 8% organic acid, protein, enzymes, 18% mineral salts, vitamins, seeds, oils, high iron content that can treat anemia and contains antibiotics (Harahap et al., 2024). When honey is consumed daily, anemia sufferers can see a significant increase in energy levels, then honey helps increase calcium absorption, hemoglobin levels and treat or prevent anemia due to its nutritional factors (Rianti et al., 2021).

OBJECTIVE

The aim of this study was to determine the effectiveness of giving ambon banana, avocado and honey juice on increasing hemoglobin levels in pregnant women.

METHODS

This study used a sampling technique, namely purposive sampling, obtained a sample of 34 respondents, namely 17 control groups and 17 intervention groups. Analysis using the Independent t-test.

Researchers grouped the research samples that were included in the inclusion criteria, divided the samples into intervention groups and control groups. Making informed consent to all samples that would participate in the study. Measuring the Hb levels of pregnant women in the intervention group and the control group. Asking the intervention group to consume 250 ml of Ambon banana, avocado and honey juice starting from day 1 once a day for 14 days. Measuring the Hb levels of pregnant women with the Accupro Testing System (GCUHb) and Accupro Hb strips which were carried out after the intervention was completed. After the data was collected, data processing was carried out.

Ethical feasibility approval for the study was obtained from the health research ethics commission, Faculty of Nursing and Midwifery, XXX University with number 000478/EC/KEPK/I/10/2023 on October 14, 2023. As a form of research ethics consideration, the researcher ensured that data recording was carried out anonymously and gave conscious consent to the respondents.

RESULTS

Table 1. Hemoglobin Levels Pre Test and Post Test Control Group

Variable	Categori	Frequency (n)	Percentage (%)	Mean ± SD	Mean Difference	Sig.
Hemoglobin *Pre Test*	Normal	0	0			
	Mild anemia	13	76,5%	10.212 ± 4.794		
	Moderate anemia	4	23,5%		-835	0.001

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Hemoglobin *Post Test*	Normal	10	58,8%	11.047 ± 6.530
	Mild anemia	5	29,4%	
	Moderate anemia	2	11,8%	

Based on the table 1 shows that the difference in mean hemoglobin levels between pre-test and post-test in the control group that only consumed Fe tablets showed a result of -835 and the p value showed 0.001 (<0.05).

Table 2. Hemoglobin Levels Pre Test and Post Test Intervention Group

Variable	Kategori	Frekuensi (n)	Presentase (%)	Mean ± SD	Selisih Mean	Sig.
Hemoglobin *Pre Test*	Normal	0	0%			
	Mild anemia	13	76,5%	10.288 ± 3.621		
	Moderate anemia	4	23,5%		-2.524	0.001
Hemoglobin *Post Test*	Normal	17	100%	12.812 ± 7.339		
	Mild anemia	0	0%			
	Moderate anemia	0	0%			

Based on the table 2 shows that the difference in mean Hb levels in the pre-test and post-test intervention groups that had been given ambon banana, avocado and honey juice showed a result of -2.524, so there was an increase in the average value of hemoglobin levels after giving ambon banana, avocado and honey juice of 2.524 and the p value showed 0.001 (<0.05), meaning that there was an effect of giving ambon banana, avocado and honey juice on increasing hemoglobin levels.

Table 3. Independent Sample T-Test Results

Pre Test	Mean ± SD	Selisih Mean	Sig.
Control	10.212 ± 4.794		
Intervensi	10.288 ± 3.621	-0,76	0,001

Based on the table 3 shows that the Independent t-test statistical test resulted in p=0.001<0.05, meaning there was an influence of Ambon Banana, Avocado and Honey juice on increasing hemoglobin levels in pregnant women.

DISCUSSION

Identification of Hb levels before giving ambon banana, avocado and honey juice

The pretest results of the control group for the examination of the average hemoglobin level obtained a result of 10.20 mg/dl, while the posttest in the control group that was not given Ambon banana, avocado and honey juice was 11 mg/dl. So that the increase in the average value of the pretest and posttest hemoglobin levels was 0.80 mg/dl The pretest and

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posttest hemoglobin levels of the intervention group before giving Ambon banana, avocado and honey juice were 10.24 mg/dl, while the posttest hemoglobin levels of the intervention group after giving Ambon banana, avocado and honey juice were 12.85 mg/dl. So that the increase in the average value of the pretest and posttest hemoglobin levels of the intervention was 2.60 mg/dl.

Bananas contain iron which will stimulate the production of hemoglobin in the blood and also help prevent anemia. Vitamin C contained in bananas is also good for health to help rebuild the immune system. Bananas are also relatively easy to digest food compared to other foods, making it easier for someone with a low immune system. Vitamin C also increases iron absorption and helps blood formation, these two health benefits make bananas useful for addition to their diet in reducing anemia (Rakhmawati et al., 2024).

Based on the results of the research that has been done, the problem of anemia is caused by the unfulfilled need for iron due to poor eating habits, as well as the consumption of Fe tablets which can cause side effects of digestive disorders such as nausea and vomiting. Therefore, it can be concluded that to overcome the problem of anemia in pregnant women, researchers provide Ambon banana, avocado and honey juice as an alternative to increase hemoglobin levels because the iron and folic acid content of honey is expected to help increase hemoglobin levels and by continuing to consume Fe tablets.

Identification of Hb levels after being given ambon banana, avocado and honey juice

Bananas contain iron which will stimulate the production of hemoglobin in the blood and also help prevent anemia. Vitamin C contained in bananas is also good for health to help rebuild the immune system. Bananas are also relatively easy to digest foods compared to other foods, making it easier for someone with a low immune system. Vitamin C also increases iron absorption and helps blood formation, these two health benefits make bananas useful as an addition to their diet in reducing anemia (Rakhmawati et al., 2024).

This theory is in line with research conducted by (Puspawidari et al., 2023) on the comparison of the increase in Hb levels between those given Fe tablets and bananas, the average hemoglobin level of female adolescents in the experimental group (Fe and Ambon banana) before the intervention was 10.687 gr/dL and after the intervention was 12.313 gr/dL. The average hemoglobin level of female adolescents in the control group (Fe only) before the intervention was 10.720 gr/dL and after the intervention was 11.648 gr/dL. It is said that there is a significant difference between the mean hemoglobin levels in the experimental group and the control group after being given Ambon bananas so that it can be concluded that giving Fe tablets and Ambon bananas is effective for hemoglobin levels with anemia.

Research (Heryanto et al., 2024) shows that consuming Ambon bananas can prevent and overcome anemia by stimulating the production of hemoglobin in the blood. Ambon bananas contain iron and vitamin C, which can increase the absorption of iron in the body. The higher the vitamin C content in food, the better the absorption and use of iron by the body.

Based on research (Widayati & Aisah, 2021), giving Ambon bananas twice a day, morning and evening for 7 days, along with consuming Fe tablets, can increase Hb levels in pregnant women in the third trimester with anemia.

According to the researcher's opinion based on the results of the study, hemoglobin levels in pregnant women vary, this is due to the habits of pregnant women during the fulfillment of the nutrition of pregnant women that they consume in a day.

Analysis of the effectiveness of giving ambon banana, avocado and honey juice on increasing hemoglobin (hb) levels in pregnant women

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Anemia in pregnancy is a condition in which the mother has a hemoglobin level below 11 gr% in the first and third trimesters or a level below 10.5 gr% in the second trimester. Most anemia in pregnancy is caused by iron deficiency and acute bleeding, and often the two interact with each other. Iron deficiency anemia is anemia that occurs due to a lack of iron in the blood. This anemia occurs in around 62.3% of pregnancies, and is a common anemia in pregnancy (Napisah, 2023).

Based on the Independent T Test, a significant p-value of 0.000 (p <0.05) was obtained, which means that there is an effect of ambon banana, avocado and honey juice on increasing hemoglobin levels in pregnant women.

The results of this study are in line with the results of research conducted by (Lestari & Inti, 2020) that consuming ambon banana juice and honey can increase hemoglobin levels in pregnant women. Based on the results of the study that has been carried out, it shows that there is an increase in Hb before and after consuming Ambon bananas and honey. Where before consuming Ambon bananas and honey, the Hb levels of pregnant women who were included in the mild classification were 17 people, pregnant women who experienced moderate anemia were 5 people. After the mother consumed Ambon banana juice and honey with a time span of 7 days since data collection, almost all Hb levels of pregnant women increased by 17 (77.3%) mild anemia 1 person (4.3%), experienced moderate anemia and 4 people (18.2%) no longer experienced anemia. The statistical test used in this study was the Wilcoxon test with a p value = 0.005 a.0.05, this means that there is an effect of giving Ambon banana juice and honey on increasing hemoglobin levels in pregnant women with anemia.

The average hemoglobin level in the intervention group (ambon banana smoothie and cantaloupe dan iron tablets) before the intervention was 10.09gr / dl and after the intervention was 11.77gr / dl with an increase in hemoglobin levels of 1.68gr / dl, while the average hemoglobin level in the control group (Fe tablets) before the intervention was 9.91gr / dl and after the intervention was 10.51gr / dl with an increase in levels of 0.6gr / dl. The average sleep quality in the intervention group before the intervention was 5.88 points and after the intervention was 4.55 points with an increase in points of 1.33 points. While the control group before the intervention had a result of 6.61 points and after 5.90 points, with an increase in points of 0.71 points (Tripertiwi, 2023).

Giving avocado and honey significantly increases the average hemoglobin level, this is because the iron content in avocado and vitamin C in avocado increase hemoglobin levels. With the addition of honey will further help increase the mother's hemoglobin levels. Honey contains iron which functions to increase hemoglobin levels in the blood (Novita et al., 2024).

While honey contains minerals such as sodium, calcium, magnesium, aluminum, iron, phosphorus and potassium, plus the vitamin content in it such as ascorbic acid (C), folic acid and vitamin K. When honey is consumed every day, anemia sufferers can see a significant increase in energy levels, then honey helps increase calcium absorption, hemoglobin levels and treat or prevent anemia due to its nutritional factors (Utami & Wulandari, 2021). Other research results are that there is a significant difference after being given honey for 7 days of intervention, besides honey is easy to get and tastier for consumption by local residents, honey also contains iron and is good for consumption by pregnant women (Rianti et al., 2021)

According to researchers, the results obtained showed a significant increase. This is due to the iron and folic acid content in bananas, avocados and the mineral content, iron, vitamin C and folic acid from honey which are combined so that they can increase

hemoglobin levels. So it can be concluded that there is an effect of giving ambon banana, avocado and honey juice on increasing hemoglobin levels in pregnant women. However, there is a possibility that the increase in hemoglobin can be influenced by various factors such as other intakes consumed and Fe tablets consumed by respondents.

CONCLUSION

The average Hb level of respondents before receiving treatment of ambon banana, avocado and honey juice was 11.2% gr/dl. The average Hb level of respondents after being given treatment of ambon banana, avocado and honey juice, was 12.8% gr/dl. The results of the analysis p = 0.001 <0.05 then H0 is rejected and H1 is accepted which means there is an effect of ambon banana, avocado and honey juice on increasing hemoglobin levels in pregnant women.

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CONFLICTS OF INTEREST

There are no conflicts of interest associated with this research. The authors declare that they have no potential conflicts of interest with respect to the research, authorship, and/or publication of this paper.

REFERENCES

Harahap, N. R., Nurrahmaton, N., Syari, M., Wulandari, S., & Lestari, I. (2024). EFEKTIVITAS PUDING PISANG AMBON DAN MADU TERHADAP HEMOGLOBIN IBU HAMIL. *Indonesian Trust Health Journal*, *7*(2), 75–84.

Heryanto, M. L., Novianti, S., & Asih, V. F. (2024). Efektifitas pemberian smoothies pisang ambon dan bayam terhadap kenaikan hemoglobin (Hb) pada anak pra sekolah. *Journal of Midwifery Care*, *5*(1), 18–27.

Kemenkes, R. I. (2023). Turunkan Angka Kematian Ibu melalui Deteksi Dini dengan Pemenuhan USG di Puskesmas. *Direktorat Jenderal Kesehatan Masyarakat*.

Lestari, S., & Inti, S. (2020). Pengaruh Pemberian Jus Pisang Ambon dan Madu terhadap Kenaikan Kadar Hemoglobin pada Ibu Hamil dengan Anemia di Puskesmas Mrican Kota Kediri. *Java Health Jounal*, *6*(1).

Marhaeni, M. (2023). Faktor-Faktor Yang Mempengaruhi Kejadian Anemia Ringan Pada Ibu Hamil Di Puskesmas Kassi-Kassi Kota Makassar. *Jurnal Kesehatan Luwu Raya*, *9*(2), 34–43.

MARYAM, S. (2020). Analisis Riwayat Tablet Tambah Darah pada Ibu Hamil dengan Anemia di Indonesia (Data Riskesdas 2018). *Kebidanan*, *10*(2), 1–8.

Napisah, P. (2023). *INTERVENSI NON FARMAKOLOGI UNTUK MENINGKATKAN KADAR HEMOGLOBIN PADA IBU HAMIL: SISTEMATIK REVIEW*. *d*, 91–107.

Novita, N., Munawaroh, M., & Wulandari, R. (2024). Asuhan pengaruh pemberian jus buah alpukat dan jus buah naga terhadap peningkatan kadar hb pada ibu hamil anemia ringan trimester III di PMB Novita tahun 2023. *Innovative: Journal Of Social Science Research*, *4*(2), 2839–2851.

Puspawidari, E., Hanifa, F., & Astuti, R. P. (2023). PENGARUH PEMBERIAN FE DAN PISANG AMBON TERHADAP PENINGKATAN KADAR HB REMAJA PUTRI YANG MENGALAMI ANEMIA RINGAN DI PUSKESMAS LEUWIGOONG KABUPATEN GARUT TAHUN 2023. *SENTRI: Jurnal Riset Ilmiah*, *2*(10), 4293–

ISSN: 2614-3488 (print); 2614-3496 (online) Vol.8 No.4. July 2025. Page.795-802

4304.

Rakhmawati, S., Syarah, M., & Noviyani, E. P. (2024). Pengaruh Konsumsi Buah Pisang Ambon dan Buah Kurma Terhadap Peningkatan Kadar Hemoglobin Ibu Hamil Di RSUD Pagelaran Tahun 2023. *Innovative: Journal Of Social Science Research*, *4*(3), 649–660.

Ramadhani, N., Situngkir, R., & Exposto, A. A. (2021). Pengaruh Edukasi Metode Telenursing Terhadap Kepatuhan Minum Suplemen Fe pada Ibu Hamil di Puskesmas Pertiwi Kota Makassar. *Jurnal Keperawatan Florence Nightingale*, *4*(1), 9–13.

Ri, K. (2021). Profil kesehatan indonesia. *Pusdatin. Kemenkes. Go. Id*.

Rianti, R., Choirunissa, R., & Rukmaini, R. (2021). Pengaruh Pemberian Madu Terhadap Kadar Hemoglobin Ibu Hamil Trimester III di BPM Ny ﷺ ﷺT ﷺ Kecamatan Purwadadi Kabupaten Subang. *Jurnal Ilmiah Kesehatan*, *13*(2), 148–155.

Safitri, S. (2020). Pendidikan Kesehatan tentang Anemia kepada Ibu Hamil. *Jurnal Abdimas Kesehatan (JAK)*, *2*(2), 94–99.

Situmorang, S. L. M. (2023). *PENGARUH PEMBERIAN BUAH ALPUKAT (PERSEA AMERICANA) DAN MADU TERHADAP KADAR HEMOGLOBIN IBU HAMIL TRIMESTER III DENGAN ANEMIA DI PUSKESMAS KECAMATAN SETIABUDI JAKARTA SELATAN TAHUN 2023*. Universitas Nasional.

Tripertiwi, S. (2023). *PENINGKATAN KADAR HEMOGLOBIN DAN KUALITAS TIDUR IBU HAMIL TRIMESTER III DENGAN PEMBERIAN SMOOTHIES BUAH PISANG AMBON (Musa Acuminata) DAN BUAH BLEWAH (Cucumis Melo Var. Cantalupensis)= INCREASING HEMOGLOBIN LEVELS AND SLEEP QUALITY OF PREGNANT WOMEN TRIMESTER III BY GIVING AMBON BANANA (Musa Acuminata) AND CANTALOUPE (Cucumis Melo Var. Cantalupensis) SMOOTHIES*. Universitas Hasanuddin.

Utami, V. W., & Wulandari, D. R. (2021). PENYULUHAN TENTANG CARA MENGKONSUMSI MADU YANG BENAR UNTUK MENINGKATKAN KADAR HAEMOGLOBIN (Hb) PADA IBU HAMIL DI DESA JATI BARU LAMPUNG SELATAN. *Jurnal Perak Malahayati: Pengabdian Kepada Masyarakat*, *3*(1), 21–28.

Widayati, E., & Aisah, S. (2021). Pemberian Pisang Ambon Untuk Meningkatkan Kadar Hemoglobin Pada Ibu Hamil Trimester III Dengan Anemia. *Jurnal Ners Muda*, *2*(2).