Jurnal Eduhealth
Volume 15 , Number 03, 2024, DOI 10.54209/eduhealth.v15i03
ESSN 2808-4608 (Online)
https://ejournal.seaninstitute.or.id/index.php/healt

The Effect Of Giving Green Bean Juice On Hemoglobin Levels In Pregnant Women With Mild Anemia In The UPTD Area Of Alasa Health Center In 2023

[1]Anita Damayanti Lubis, [2]Purnama Handayani
[1,2]Universitas Haji Sumatera Utara

Article Info
Keywords:
Green Bean,
Mung beans Juice,
up to hemoglobin,
Pregnant Women,
Mild anemia,
Alasa Health Center.

ABSTRACT
Pregnancy and childbirth are natural processes for a woman. Pregnancy results in an increase in blood volume which can cause anemia. One alternative that can be done to prevent anemia in pregnant women is by giving green bean juice. This study aims to determine the effect of giving green bean juice on hemoglobin levels in mildly anemic pregnant women in the UPTD area of the Alasa Health Center in 2023. This research is a pre-experimental design research with a one group pretest and posttest design approach. This research was carried out from 2 October 2023 to 14 October 2023. The population was 58 people. Sampling used purposive sampling with a sample size of 20 people. The research results showed that the hemoglobin level in mildly anemic pregnant women before being given green bean juice in the UPTD area of Alasa Health Center was mild anemia and the hemoglobin level in mildly anemic pregnant women after being given green bean juice in the UPTD area of Alasa Health Center was normal. Based on the results of the paired t-test, the p value = 0.001 <0.05. The conclusion of this research is that there is an effect of giving green bean juice on hemoglobin levels in mildly anemic pregnant women in the UPTD Alasa Health Center area in 2023. Suggestions in this research are that UPTD Alasa Health Center provides education and information to pregnant women. Apart from consuming Fe tablets, mothers can also consume Fe tablets. green bean juice for preventing anemia.

Corresponding Author:
Anita Damayanti Lubis
Universitas Haji Sumatera Utara
Jl. Selamat Lurus No.73, RW.SA, Sitirejo III, Kec. Medan Amplas, Kota Medan, Sumatera Utara
anitadamayantilubis75@gmail.com

INTRODUCTION

Pregnancy and childbirth are a natural process for a woman, during pregnancy the body will experience many physiological and psychological adaptations. Physiological adaptations consist of the reproductive system, changes in the cardiovascular system, changes in the respiratory system, changes in the gestational system, changes in the renal system, changes in the endocrine system, changes in the abdominal and skin walls and metabolic changes while psychological changes consist of stressors in pregnancy (Purwaningsih, 2018).

Jurnal Eduhealth
Volume 15 , Number 03, 2024, DOI 10.54209/eduhealth.v15i03
ESSN 2808-4608 (Online)
https://ejournal.seaninstitute.or.id/index.php/healt

Pregnancy results in an increase in blood volume (hypervolemia). Hypervolemia is the result of an increase in the volume of plasma and erythrocytes (red blood cells) in the body, but this increase is unbalanced, namely the increase in plasma volume is much greater so that it has the effect of reducing the hemoglobin concentration from 12g/100ml (Purwaningsih, 2018).

Early in pregnancy and ahead of term, healthy women's hemoglobin levels of Fe are 11 g/dL or more. Concentrations are lower in mid-pregnancy. Therefore, the Centers for Disease Control and Prevention (CDC) defines anemia in pregnant women as occurring if the Hb level is less than 11 g/dL in the first and third trimesters, and below 10.5 g/dL in the second trimester (Manuaba, 2017).

Based on the World Development Indicators report (2019), 40% of pregnant women worldwide experience anemia. Anemia in Indonesia is still high when compared to Malaysia 37%, Singapore 32%, the Philippines 30% and Brunei 27%. The results of Basic Health Research (Riskesdes, 2020) stated that in Indonesia, pregnant women who experience anemia are 48.9%. As many as 84.6% of anemia in pregnant women occurs in the age group of 15-24 years. Indonesia is one of the developing countries with a low level of health, this is marked by the still high mortality rate in pregnant women. The results of the Indonesia Demographic and Health Survey (SDKI) conducted in 2019 stated that the maternal mortality rate nationally is 248 per 100,000 live births (Ministry of Health of the Republic of Indonesia, 2020).

Pregnant women who experience anemia during pregnancy occur due to the process of hemodilution (blood thinning) which begins at 10 weeks of pregnancy and reaches a peak at 32-36 weeks of gestation. Anemia in pregnancy must be overcome immediately to prevent bleeding in the delivery process and disorders in fetal growth and development. The main cause of anemia is a lack of iron intake in food or blood-boosting tablets. The incidence of anemia is caused by a lack of iron intake, followed by folate deficiency. It is estimated that as many as 50% of anemia is iron deficiency anemia (Yunita et al., 2022). The government's efforts to reduce the incidence of anemia in pregnant women are to provide iron tablet supplementation as many as 90 tablets for pregnant women. However, the incidence of anemia in pregnant women is still relatively high. This is due to the mother's non-compliance in consuming iron tablets. Side effects such as nausea, vomiting and heartburn are the causes of pregnant women not complying in consuming the tablets. So in this case, pregnant women need to consume foods rich in iron content such as green vegetables, nuts and fruits. In the third trimester, the need for iron will increase (Suzanna, 2022).

Mung beans (Vigna Radiata) are a type of legumes that are rich in iron content as the formation of red blood cells so that they can increase Hb levels. In each half cup of green beans contains 2.25 mg of iron. Green beans also contain phytate of 2.19% which inhibits the absorption of iron, so it is recommended to soak green beans first before processing them (Choirunissa & Manurung, 2020).

According to the research of Retnorini, et al. (2017) with the title The Effect of Giving Fe Tablets and Mung Bean Juice on Hemoglobin Levels in Pregnant Women in the Working

Jurnal Eduhealth
Volume 15 , Number 03, 2024, DOI 10.54209/eduhealth.v15i03
ESSN 2808-4608 (Online)
https://ejournal.seaninstitute.or.id/index.php/healt

Area of the Pare Health Center, Temanggung Regency which explained that consuming 60 grams of Fe per day and increasing the intake of Fe source foods such as Mung Bean Juice was proven to increase hemoglobin levels by 0.9 g/dl. One type of legumes that contain high iron content is mung beans (Vigna Radiata). Research by Sari et al, (2020) showed that respondents who were given 500 cc of mung bean juice which were drunk 2 times (morning and evening) for 7 days with an average increase in Hb levels of 1.55 gr/dl. The average increase in Hb levels was higher than only consuming Fe tablets, which only increased by 0.58 gr/dl.

An initial survey of researchers at the Alasa Health Center UPTD in May 2023 from 7 pregnant women was interviewed when pregnant women visited the health center to check their pregnancy, there were 4 pregnant women with mild anemia who did not consume iron-increasing foods at all, 1 pregnant woman with mild anemia consumed Fe tablets given from the health center but not regularly, and 2 pregnant women who have normal HB because they routinely consume iron-boosting foods and Fe tablets given from the health center.

METHODS

This study uses a preexperimental design, which is a research that conducts activities. This is not a real experiment because there are external variables that affect the dependent variables, not just independent variables. This may be because there are no control variables and the sample is not randomly selected (Sudiyono, 2017). This study used a one group pretest and posttest design without a control group, the subject group was observed before the intervention, then observed again after the intervention. One group before being given a certain treatment was given a pretest, then after being given a treatment, another measurement was carried out to find out the cause and effect of the treatment. Causal testing is carried out by comparing the results of the pretest with the post test.

The location of this research was carried out in the UPTD Alasa Health Center Area, with several considerations, namely the number of pregnant women who experience mild anemia and do not know the treatment, there has never been a study on the administration of mung bean juice on hemoglobin levels of pregnant women who have mild anemia, the number of populations and samples are suitable to be used as research subjects, and the location of the research is an easy-to-reach place for researchers. This research was carried out from April to November 2023. The research was carried out from October 2, 2023 to October 14, 2023.

The population in this study is all pregnant women in the UPTD Alasa Health Center area which totals 58 people. This population was taken from medical record data from the Alasa Health Center who visited in August and September 2023. The number of samples in this study will be taken according to the criteria set by the researcher. The number of samples was 20 people.

Jurnal Eduhealth
Volume 15 , Number 03, 2024, DOI 10.54209/eduhealth.v15i03
ESSN 2808-4608 (Online)
https://ejournal.seaninstitute.or.id/index.php/healt

RESULTS AND DISCUSSION

The characteristics of the respondents studied in this study include: Age, occupation and education.

Table 1. Characteristics of Respondents in the UPTD Alasa Health Center Area

No	Characteristic	Frequency (f)	Percentage (%)
1	Age of Respondents		
	<20 Years	2	10,0
	20-30 Years	11	55,0
	>30 Years	7	35,0
	Total	20	100,0
2	Work		
	Self employed	6	30,0
	Farmer	4	20,0
	Private Employees	8	40,0
	civil servant	2	10,0
	Total	20	100,0
3	Education		
	SMP	5	25,0
	SMA	12	60,0
	College	3	15,0
	Total	20	100,0

Based on table 1, it can be seen from 20 respondents at the Alasa Health Center, it can be seen that the majority of respondents are 20-30 years old, as many as 11 people (55%), the work of the respondents is private employees as many as 8 people (40.0%) and the education of the respondents is high school as many as 12 people (60%).

Table 2. Hemoglobin Levels in Pregnant Women with Mild Anemia before being given Green Bean Juice in the UPTD Alasa Health Center Area in 2023

No	Hemoglobin Levels in Mothers Pregnancy with Mild Anemia before being given Green Bean Juice	Frequency (f)	%
1	Normal (11 gr/dl)	3	15,0
2	Mild Anemia (9-10,9 gr/dl)	17	85,0
	Total	20	100

From table 2, it can be seen that the category of Hemoglobin Levels in Pregnant Women with Mild Anemia before being given Green Bean Juice in the UPTD Alasa Health Center area is Mild Anemia (9-10.9 gr/dl) as many as 17 respondents (85%).

Jurnal Eduhealth
Volume 15 , Number 03, 2024, DOI 10.54209/eduhealth.v15i03
ESSN 2808-4608 (Online)
https://ejournal.seaninstitute.or.id/index.php/healt

Table 3. Hemoglobin Levels in Pregnant Women with Mild Anemia after being given Green Bean Juice in the UPTD Alasa Health Center Area in 2023

No	Hemoglobin Levels At Pregnant Women with Mild Anemia after Being Given Green Bean Juice	Frequency (f)	%
1	Normal (11 gr/dl)	20	100,0
	Total	20	100

From table 3, it can be seen that the Hemoglobin Levels in Pregnant Women with Mild Anemia after being given Green Bean Juice in the UPTD Alasa Health Center area are Normal (11 gr/dl) as many as 20 people (100%). This means that after being given mung bean juice, there is an increase in respondents' haemoglobin levels towards the normal limit.

Effect of Mung Bean Juice on Hemoglobin Levels in Pregnant Women with Mild Anemia in the UPTD Alasa Health Center Area in 2023

Table 4. Effect of Mung Bean Juice on Hemoglobin Levels in Pregnant Women with Mild Anemia in the UPTD Alasa Health Center Area in 2023

No	Treatment	Mean	N	Difference	*Sig.*
1	Pre Test HB Level	10,5	20	1,6	0,001
2	Post Test HB Level	12,1	20		

Based on Table 4 above, it can be seen that there is a difference in the average value of Hemoglobin Levels in Pregnant Women with Mild Anemia before being given Green Bean Juice in the UPTD Puskesmas Alasa Area, where it can be seen that the Hemoglobin Level in Pregnant Women with Mild Anemia before being given Green Bean Juice is 10.5 which means that the Hemoglobin Level in Pregnant Women is below normal. After being given Green Bean Juice, there was an increase in haemoglobin levels in pregnant women to an average of 12.1 which indicates that haemoglobin levels in pregnant women are within the normal threshold. There was a significant increase in haemoglobin levels before and after giving mung bean juice to pregnant women, which was 1.6. Then based on the results of the Paired Sample –Test test obtained a value of p- 0.001< α=0, then H0 was rejected, meaning that simultaneously there was an Effect of Mung Bean Juice Administration on Hemoglobin Levels in Pregnant Women with Mild Anemia in the UPTD Alasa Health Center area in 2023.

Discussion

Hemoglobin Levels in Pregnant Women with Mild Anemia before being given Green Bean Juice in the UPTD Alasa Health Center Area in 2023

Based on the results of the study, it was found that the Hemoglobin Level in Pregnant Women with Mild Anemia before being given Green Bean Juice in the UPTD Alasa Health Center Area was Mild Anemia (9-10.9 gr/dl) of 85%. This data was obtained based on the results of a study that before being given an intervention to give mung bean juice, hemoglobin (Hb) levels were checked first using the Hb sahli test tool in pregnant women who experienced anemia. After knowing the results of the examination, there were 17

Jurnal Eduhealth
Volume 15 , Number 03, 2024, DOI 10.54209/eduhealth.v15i03
ESSN 2808-4608 (Online)
https://ejournal.seaninstitute.or.id/index.php/healt

respondents who experienced mild anemia which was measured based on low hemoglobin levels of <11 gr/dL. This is in line with the explanation from Elvina Arba Yunita (2022), that pregnant women are said to be anemic if their Hb levels are <11 g% in the first and third trimesters or <10.5 in the second trimester (Yunita et al., 2022). Before being given the mung bean juice treatment, respondents experienced complaints of weakness, pale skin, shortness of breath and dizziness.

Green beans have a lot of vitamin and mineral content such as calcium, iron, phosphorus, and sodium. The protein, carbohydrate, and fat content in green beans supports the hemoglobin synthesis process. Green beans contain 20-25% protein. The protein in raw green beans has a digestibility of about 77%. The not too high digestibility is caused by the presence of antinutrients, such as anti-trypsin and tannins (polyphenols) (Neneng latifah, 2018).

Mung bean juice can be used as an alternative to prevent anemia. This is in line with the research of Yuhendri Putra and Fitriani with the title of giving mung bean juice on hemoglobin levels of pregnant women with mild anemia. The administration of mung bean juice was carried out 2 times a day with an average HB level of 0.34 gr% with a standard deviation of 0.000 gr%. The results of the statistical test obtained a value of sig. (2 tailed)= 0.0005 (<0.005) meaning that there was an effect between HB levels before and after mung bean juice intervention. In line with the 2018 study of Neneng Siti Latifah, the average hemoglobin level before being given mung beans and Fe tablets was 9.33 gr/dl, the average hemoglobin level after being given mung beans and FE tablets was 10.80 gr/dl, the average hemoglobin level before being given FE tablets was 9.27 gr/dl, the average hemoglobin level after being given FE tablets was 10.33 gr/dl after the intervention was 10.73. It is known that there is an effect of giving mung beans on the increase in hemoglobin levels in pregnant women in the second trimester in the Working Area of the Inpatient Health Center Way Kandis Bandar Lampung in 2018 with the results of the t test obtained a p value of 0.000 < a (0.05).

Anemia occurs due to a lack of iron and folic acid in the body. Women who suffer from anemia during pregnancy have the potential to give birth to babies with low birth weight. In addition, anemia can result in the death of both mother and baby during the delivery process. Women are more prone to anemia compared to men. The need for iron in women is 3 times greater than in men, which is why women need iron to restore their body condition to its original state and this does not happen to men. Similarly, during pregnancy, the need for iron increases 3 times compared to before pregnancy, this is related to the need for fetal development in the womb (Mas'amah and Utami, 2022).

Anemia occurs in pregnant women in this study is influenced by respondent characteristics such as age and education. Where the majority of respondents are 20-30 years old at 55% which indicates that age is the ideal reproductive age for women to get pregnant. The age of pregnant women will affect the nutrition and health conditions of pregnant women so that it can also affect the growth and development of the fetus. In line with Merida's (2014) research which shows that the most age of anemia in pregnancy is the reproductive age of 76.7%.

Jurnal Eduhealth
Volume 15 , Number 03, 2024, DOI 10.54209/eduhealth.v15i03
ESSN 2808-4608 (Online)
https://ejournal.seaninstitute.or.id/index.php/healt

Meanwhile, from the characteristics of education, it was found that the majority of respondents with high school education experienced anemia as much as 60%. Data obtained showed that mothers with higher education suffered more from anemia, this was due to the factor of mothers' lack of attention to their food intake. Education is the learning of knowledge, skills, and habits of a group of people that are transferred from one generation to the next through teaching, training, or research (Aulia et al., 2018).

Hemoglobin Levels in Pregnant Women with Mild Anemia after being given Green Bean Juice in the UPTD Alasa Health Center Area in 2023

Based on the results of the study, it was found that the Hemoglobin Level in Pregnant Women with Mild Anemia after being given Green Bean Juice in the UPTD Alasa Health Center area was Normal (11 gr/dl) of 100%. This means that after being given mung bean juice, there is an increase in respondents' haemoglobin levels towards the normal limit. In this study, mung bean juice was given before meals.

Green beans (Vigna Radiata) are a type of legumes that contain high iron. Green beans are very beneficial for the health of pregnant and lactating women, as well as to support the growth period of children. The iron content in green beans is most abundant in the embryo and the seed shell. With a total iron content in mung beans of 6.7 mg per 100 grams of mung beans and one of the most effective forms of serving mung beans to increase hemoglobin levels in the blood is in the form of mung bean juice, namely water and pulp are filtered and separated so that the drink is nutrient-dense (Lathifah, 2018).

Green beans also contain 7 mcg of vitamin A in half a cup. Vitamin A deficiency can worsen iron deficiency anemia. Vitamin A has many roles in the body, including for the growth and differentiation of progenitorerithrithrocyte cells, the body's immunity to infection and the mobilization of iron reserves throughout tissues. Green beans contain 20-25% protein. The protein in mung beans has a digestibility of about 77%. The not too high digestibility is caused by the presence of antinutrients, such as anti-trypsin and tannins (polyphenols) (Aulia et al., 2018).

Research on the administration of mung beans on hemoglobin levels was carried out by Stefani (2017) showing that the administration of mung bean juice can increase hemoglobin and blood cell levels in pregnant women with anemia who receive fe tablet supplementation for 2 weeks. This study is in line with a study conducted by Dewi (2017) on the administration of Fe tablets and mung bean juice on hemoglobin levels in pregnant women as many as 32 respondents in each group, showing that there was an increase of 0.91 in the intervention group.

This study is in line with a study conducted by Meilve Nora Syawal (2021), showing that a study conducted on 15 respondents with mung bean juice gave the average hemoglobin level of pregnant women before the intervention of 10.5 ± 0.35 gr/dL, after the intervention was given to each respondent, there was an average increase in hemoglobin levels of 11.4±0.27 gr/dL. Based on the results of the statistical test, the result of p value = 0.000 and the significance value was greater than 5% (p=<0.05 for the Hb level variable

Jurnal Eduhealth
Volume 15 , Number 03, 2024, DOI 10.54209/eduhealth.v15i03
ESSN 2808-4608 (Online)
https://ejournal.seaninstitute.or.id/index.php/healt

(0.000)). This means that giving mung bean juice can increase a person's Hb levels, especially anemia pregnant women (Syawal, 2021).

According to the researcher's assumption that with mothers consuming mung bean juice to maximize iron absorption, respondents are highly recommended to consume mung bean juice. Green beans contain 20-25% protein. The protein in raw green beans has a digestibility of about 77%. The not too high digestibility is caused by the presence of anti-nutritional substances, such as anti-trypsin and tannins (polyphenols) which are very good for pregnant women, especially green beans are a type of food that is easy to get and favored by people whose processing is not difficult apart from the iron content which can help increase hemoglobin levels in the body.

Effect of Mung Bean Juice on Hemoglobin Levels in Pregnant Women with Mild Anemia in the UPTD Alasa Health Center Area in 2023

Based on the results of the study, it was found that there was a difference in the average value of Hemoglobin Levels in Pregnant Women with Mild Anemia before being given Green Bean Juice in the UPTD Alasa Health Center Area, where it can be seen that the Hemoglobin Level in Pregnant Women with Mild Anemia before being given Green Bean Juice was 10.5 which means that the Hemoglobin Level in Pregnant Women was below normal. After being given Green Bean Juice, there was an increase in haemoglobin levels in pregnant women to an average of 12.1 which indicates that haemoglobin levels in pregnant women are within the normal threshold. There was a significant increase in haemoglobin levels before and after giving mung bean juice to pregnant women, which was 1.6. Then based on the results of the Paired Sample –Test test, a value of p- 0.001< α=0 was obtained, then H0 was rejected, meaning that simultaneously there was an Effect of Mung Bean Juice Administration on Hemoglobin Levels in Pregnant Women with Mild Anemia in the UPTD Alasa Health Center area in 2023.

Supported by the research of Retnorini, et al. (2017) with the title The Effect of Fe Tablets and Mung Bean Juice on Hemoglobin Levels in Pregnant Women in the Working Area of the Pare Health Center, Temanggung Regency which explained that consuming 60 grams of Fe per day and increasing the intake of Fe source foods such as Mung Bean Juice was proven to increase hemoglobin levels by 0.9 g/dl. One type of legumes that contain high iron content is mung beans (Vigna Radiata).

Research by Sari et al, (2020) showed that respondents who were given 500 cc of mung bean juice which were drunk 2 times (morning and evening) for 7 days with an average increase in Hb levels of 1.55 gr/dl. The average increase in Hb levels was higher than only consuming Fe tablets, which only increased by 0.58 gr/dl. Mung beans (Vigna Radiata) are a type of legumes that are rich in iron content as the formation of red blood cells so that they can increase Hb levels. In each half cup of green beans contains 2.25 mg of iron (Choirunissa & Manurung, 2020).

Jurnal Eduhealth
Volume 15 , Number 03, 2024, DOI 10.54209/eduhealth.v15i03
ESSN 2808-4608 (Online)
https://ejournal.seaninstitute.or.id/index.php/healt

CONCLUSION

A 2023 study in the UPTD Alasa Health Center Region found that hemoglobin levels in pregnant women with mild anemia were mild anemia before being given mung bean juice. The hemoglobin level of pregnant women with mild anemia is normal after being given mung bean juice in the UPTD area of the Alasa Health Center. There is an effect of giving mung bean juice on hemoglobin levels of pregnant women with mild anemia in the UPTD area of the Alasa Health Center. The study is expected to increase knowledge about mung bean juice and hemoglobin levels, as well as inform pregnant women that in addition to taking iron tablets, they can also take mung bean juice to prevent anemia. It is hoped that future researchers can use this as a reference to continue the same research and add variables to improve the accuracy of the research.

REFERENCE

Choirunissa, R., & Manurung, D. R. (2020). Pengaruh Pemberian Sari Kacang Hijau Terhadap Kadar Hemoglobin Pada Ibu Hamil Di Puskesmas Sirnajaya Kecamatan Serang Baru Bekasi Tahun 2019. Journal For Quality In Women's Health, 3(2), 171–176. Https://Doi.Org/10.30994/Jqwh.V3i2.72

Eti R, 2018. Hubungan Asupan Fe dengan Kadar Hemoglobin pada Remaja Putri Anemia di SMK 2 Muhammadiyah Sukoharjo dan SMA N 1 Nguter. University Research Colloquium.

Manuaba, (2017). Ilmu Kebidanan, Penyakit Kandungan dan KB untuk Pendidikan Bidan. Edisi kedua. Jakarta: EGC.

BR. Sebayang, W. (2023). The Relationship Between Mother's Knowledge And Attitude About High Risk Pregnancy In Pulo Brayan Medan Health Center. Jurnal Kesehatan, Rekam Medis Dan Farmasi (JUK-Medifa), 1(02), 66–69.

Purwaningsih, 2017. Buku Ajar Gizi untuk Kebidanan. Yogyakarta: Nuha Medika.

Retnorini L Dewi, dkk. (2017). "Pengaruh Pemberian Tablet Fe dengan Sari Kacang Hijau Terhadap Kadar Hemoglobin Pada Ibu Hamil", Semarang: e journal poltekes smg.

Sari, W. I. P. E., Almaini, A., & Dahlia, D. (2020). Pengaruh Pemberian Tablet Fe Dengan Penambahan Sari Kacang Hijau Dalam Peningkatan Kadar Hb Ibu Hamil. Jurnal Medikes (Media Informasi Kesehatan), 7(2), 347–356. Https://Doi.Org/10.36743/Medikes.V7i2.239

Supardi, S.R. 2017. Metodelogi Riset Keperawatan. Jakarta: Trans Info Media (TIM).

Suzanna. (2022). Efektivitas Pemberian Jus Buah Bit (Beta Vulgaris) Dan Sari Kacang Hijau (Vigna Radiata) Pada Ibu Hamil Anemia The Effectiveness Of Giving Bit Fruit Juice (Beta Vulgaric) And Green Bean Sari (Vigna Radiata) In Pregnant Mother Anemia. Jurnal Kebidanan, 2(1), 58–63.

Ulfah, 2016. Analisis Kadar Hemoglobin (Hb) Dalam Darah Dan Pengaruhnya Terhadap Kelelahan Kerja Pada Pekerja Wanita. Fakultas kedokteran. Universitas Jendral Soedirman.

Yunita, E. A., (2022). Penatalaksanaan Anemia Ringan Berfokus Pada Pemberian Sari Kacang Hijau Pada Ny . H Di Pmb Atik Kota Agung Tahun 2021. Management Of Middle Anemia Performance On Green Bean Extraction To Ny . H In Pmb Atik Kota Agung In 2021. XII(1), 454–460.

Rambe, N., & Sembiring, R. H. (2023). Case Study: Midwifery Care of Trimester III Pregnant Women with Back Pain at Nana Diana Clinic, Medan City. Jurnal Kesehatan, Rekam Medis Dan Farmasi (JUK-Medifa), 1(02), 54–58.