

Article

Increasing Hemoglobin (Hb) Levels in Pregnant Women with Green Spinach Vegetable Decoction for Pregnant Women

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ABSTRACT

Anemia in general is a condition where the body has too few red blood cells, where the red blood cells contain hemoglobin which functions to carry oxygen to all body tissues (Astrian, 2023:3). Serang Regency with pregnant women has a consumption rate of food containing only iron without Fe 90 as much as 94.7%. This causes anemia in pregnant women to remain high. Objective: analyzed the effectiveness of consuming boiled spinach on increasing hemoglobin levels in pregnant women in the second and third trimesters at the Cinangka Community Health Center. Method: type of quantitative research, the research design is a cross-sectional survey or cross sectional, sampling technique, namely total sampling. Results: parity characteristics of pregnant women: 5 people (41.7%) were primigravida and 7 people (58.3%) were multigravida. After the intervention, hemoglobin levels were carried out, the majority of pregnant women experienced an increase of 1. (100%) to normal hemoglobin levels. The average value of increase in hemoglobin before and after consuming green spinach was 0.67 and results Asymp. Sig. (2 Tailed) < 0.008 that there is a difference in hemoglobin levels before and after being given spinach. Conclusion: respondents in the study before eating green spinach experienced anemia and after the research was carried out there was an increase in pregnant women.

I. INTRODUCTION

Anemia in general is a condition where the body has too few red blood cells, where the red blood cells contain hemoglobin which functions to carry oxygen to all body tissues (Astrian, 2023:3). Anemia is a decrease in the number of red blood cells or a decrease hemoglobin concentration in circulating blood. Hemoglobin levels are less than 12 grams/dl for non-pregnant women and less than 11 gr/dl for pregnant women (Padmi, 2018:16). Globally, the prevalence of anemia in pregnant women throughout the world is 41.8%. The prevalence of anemia in pregnant women is estimated in Asia at 48.2%, Africa 57.1%, America 24.1%, and Europe 25.1% (Salmariantity, 2012:2). According to the World Health Organization (WHO 2021:2) the prevalence of anemia in pregnant women in Indonesia in 2015 was 40.5% and in 2016 it was 42%. The prevalence of anemia in pregnant women in Indonesia is 37.1%. The provision of Fe tablets in Indonesia in 2018 was 85%. This percentage has increased compared to 2023 which was 83.3%. Even though the government has implemented a program to control anemia in pregnant women, namely by giving 90 Fe tablets to pregnant women during the pregnancy period with the aim of reducing the rate of anemia in pregnant women, the incidence of anemia is still high (Risksdas, 2018:3).

In Indonesia, it is estimated that every day there are 41 cases of anemia, and 20 women die because of this condition. This high figure is caused by low knowledge and awareness of the dangers of anemia in pregnancy which tends to appear in the first and third trimesters of pregnancy (Yuliatin, 2018:215). Serang Regency is one of the regencies in Banten Province with pregnant women whose consumption level of food only contains substances iron alone without Fe 90 is 94.7%, while pregnant women who consume foods with iron + Fe 90 are only 20% (Risksdas Banten, 2023). This is what causes anemia among pregnant women in Serang Regency to remain high.

Giving spinach to pregnant women is one way to increase Hb levels in pregnant women. This vegetable is given directly to pregnant women and before being given vegetables, pregnant women are given KIE about the benefits of spinach, where spinach contains a lot of iron which is useful for increasing Hb levels. Spinach is given to pregnant women for 1 week *cup* spinach containing 300 grams of spinach and contains 11.7 mg of iron and can be consumed once a day. Apart from that, pregnant women also consume Fe tablets twice a day which contain 120 mg of iron.

Green spinach is good for the body because it is a source of iron which plays a role in the formation of hemoglobin (Cunningham, 2013), apart from that, spinach also contains calcium, vitamin A, vitamin C, vitamin E, beta-carotene and fiber. Minerals contained in spinach such as folic acid also play a role in preventing anemia (Nasution, 2016). One effort to improve consumption which aims to overcome nutritional deficiencies that occur among the community, especially protein, is by using spinach. Green spinach has complete nutritional content to support our health, because Moringa leaves contain vitamins A and C, especially beta-carotene. In Indonesia, it is estimated that every day there are 41 cases of anemia, and 20 women die because of this condition. This high figure is caused by low knowledge and awareness of the dangers of anemia in pregnancy which tends to appear in the first and third trimesters of pregnancy (Yuliatin, 2018:215). Serang Regency is one of the regencies in Banten Province with pregnant women whose consumption level of food containing only iron without Fe 90 is 94.7%, while pregnant women who consume food containing iron + Fe 90 is only 20% (Risksdas Banten, 2023). This is what causes anemia among pregnant women in Serang Regency to remain high. Giving spinach to pregnant women is one way to increase levels

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spinach, where spinach contains a lot of iron which is useful for increasing Hb levels. Spinach is given to pregnant women for 1 week *cup* Spinach contains 300 grams of spinach and contains 11.7 mg of iron and can be consumed once a day. Apart from that, pregnant women also consume Fe tablets twice a day which contain 120 mg of iron.

Green spinach is good for the body because it is a source of iron which plays a role in the formation of hemoglobin (Cunningham, 2013), apart from that, spinach also contains calcium, vitamin A, vitamin C, vitamin E, beta-carotene and fiber. Minerals contained in spinach such as folic acid also play a role in preventing anemia (Nasution, 2016). One effort to improve consumption which aims to overcome nutritional deficiencies that occur among the community, especially protein, is by using spinach. Green spinach has complete nutritional content to support our health, because Moringa leaves contain vitamins A and C, especially beta-carotene.

II. RESEARCH METHODS

The research design used was a cross-sectional or survey research design *cross sectional* is a study in which variables including risk factors and variables including effects are observed simultaneously at the same time. The research was conducted at the Cinangka Community Health Center, Kab. Attack. The population in this study was third trimester pregnant women who had had their pregnancy checked in the Cinangka Community Health Center area in 2022. The sampling procedure was divided into random sampling and non-random sampling. The sample is part of the population that has the same characteristics as the subject who is the data source (Harlan and Johan, 2018:41). The sampling technique used is *total sampling*, namely sampling where the number of samples is the same as (Suhron, 2024). Sampling is based on inclusion and exclusion criteria. This research was conducted at the Cinangka Community Health Center, Kab. Serang, Prov. Banten. In this research, it is recommended that the preparation of proposals begin in April-July 2022 with the preparation of thesis reports from August 2022 to September 2022.

III. RESEARCH RESULT

Univariate Analysis

a. Parity

Respondents from third trimester pregnant women at Cinangka Community Health Center (n=12):

Table 3.1
Frequency Distribution of Identity Characteristics

Respondent Characteristics	Frequency (n)	Presentase (%)
Mother's age		
20 – 25 Years	5	41,7
26 – 35 Years	7	58,3
Amount	12	100
Parity		
Primigravida	5	41,7
Multigravida	7	58,3
Amount	12	100

Source : Cinangka Community Health Center, Serang – Banten

Based on table 3.1, it can be seen that the average age characteristics of respondents are in the range of 20-25 years, namely 5 people (41.7%) and the lowest age range is 26-35 years, namely 7 people (58.3%). Regarding the parity characteristics of pregnant women, there were 5 primigravida respondents (41.7%) and 7 people (58.3%) of pregnant women with multigravida parity.

b. Consume Green Spinach

The following table shows the results of consuming green spinach leaves in pregnant women:

Table 3.2

Frequency Distribution of Green Spinach Stewed Consumption among Pregnant Women in the Second and Third Trimester at the Cinangka Health Center

Consume Spinach Leaves	Frequency	Present
Routine	12	100%
Not a routine	0	0%
Amount	12	100%

Source : Cinangka Community Health Center, Serang – Banten

Based on Table 3.2, the results of the data on the frequency distribution of consuming Fe tablets and green spinach show that 12 pregnant women consumed them regularly (100%).

c. Hb Levels Before and After Consuming Green Spinach

The following table shows the results of consuming green spinach leaves in pregnant women:

Table 3.3

Frequency Distribution of Green Spinach Stewed Consumption among Pregnant Women in the Second and Third Trimesters at the Cinangka Health Center

Consume Spinach Leaves	Frequency	Present
Routine	12	100%
Not a routine	0	0%
Amount	12	100%

Based on Table 3.3, the results of the data on the frequency distribution of consuming Fe tablets and green spinach show that 12 pregnant women consume them regularly (100%). The following table shows the results of hemoglobin levels before and after consuming green spinach.

d. Hb Levels Before and After Consuming Green Spinach

The following table shows the results of hemoglobin levels before and after consuming green spinach:

Table 3.4
Frequency Distribution Before and After Consuming Green Spinach Boil in Pregnant Women in the Second and Third Trimesters at the Cinangka Community Health Center

up to Hb	Frequency	Present
Hb Rate Before		
Not Anemic	4	33,3%
Mild Anemia	8	66,7%
Amount	12	100%
Hb Level After		
Not Anemic	12	91,7%
Mild Anemia	0	8,33%
Amount	12	100%

The results of the data on the frequency distribution of Hb levels showed that the hemoglobin levels of pregnant women before were 4 people (33.3%) of pregnant women who were not anemic, while 8 people (66.7%) of pregnant women had mild anemia, after the intervention, the hemoglobin levels after, the majority experienced an increase, namely 12 people (100%) of pregnant women whose hemoglobin levels were normal.

Bivariate Analysis

In this bivariate analysis, the results of the analysis of the effectiveness of giving boiled cassava leaves on changes in hemoglobin levels in third trimester pregnant women at PMB Endah Nurilah are explained. Statistical tests using the Mc-Nemar test, and analysis results explained in table 3.6 below.

Table 3.6 Effectiveness of Consuming Green Spinach Stewed Vegetables in Pregnant Women in the Second and Third Trimesters at the Cinangka Health Center

	No Anemia	%	Anemia Light	%	P-Value	Rate - rate
Hb Before	4	33,3	8	66,7	0.008	1,67
Hb After	12	100	0	0		1

Effectiveness of Spinach Vegetables on Increasing Hemoglobin Levels in Cinangka Community Health Center Based on the results of hypothesis testing using the Mc Test. Neman, obtained the value results *Asymp. Sig. (2 Tailed)* of 0.008. This value is smaller than 0.05, which means that there is a difference in hemoglobin levels before and after being given spinach. Changes in maternal hemoglobin levels are in the form of increases which can be seen from the hemoglobin level values in pregnant women. These results show that out of a total of 12 pregnant women, there were no pregnant women who experienced a decrease in levels hemoglobin.

IV. DISCUSSION

Based on the research results, it can be seen that the average age range of respondents is in the range of 20-25 years, namely 5 people (41.7%) and the lowest age range is 26-35 years, namely 7 people (58.3%).

The most ideal age for mothers to become pregnant is 20-35 years because the reproductive period is still productive. This result is in accordance with research by Herawati (2010: 28-52), it was found that the age of pregnant women who experienced anemia was mostly in the 20-35 age group. year amounted to 87.7%. From the data it is stated that the majority of pregnant women are at the productive age for pregnancy and giving birth, namely 20-35 years of age, at this age the organs are functioning well and ready to get pregnant and give birth, but if seen from a psychological perspective, this age range is still classified as unstable.

Patients with anemia during pregnancy at the H.A Sultan Daeng Raja Hospital, Bulukumba Regency in 2009 obtained a result of 52.2%, this shows that high parity or the number of 4 children has a risk of developing anemia in pregnant women. High parity has a 1.454 times greater risk of experiencing anemia compared to low parity. This is in accordance with expert statements which say that first parity has a greater risk of experiencing anemia during pregnancy, if they do not pay attention to nutritional needs during pregnancy. Based on the results of this research, it can be explained that parity is one of the factors influencing anemia in mothers. In general, the higher the mother's parity, the more experience the mother has regarding anemia. However, this shows that the mother's parity or experience is a benchmark for determining the level of knowledge she has.

Another factor that influences low Hb levels in pregnant women is the information factor. The midwives at the Cinangka Community Health Center have actually provided information in the form of KIE about how to treat anemia by consuming foods that contain a lot of iron such as spinach, chicken liver, meat and so on, but pregnant women don't really pay attention to the KIE given so that what the midwife conveys doesn't reach them. to them and they only know that their low Hb levels can only be overcome by consuming Fe tablets which are taken twice a day.

Iron has an important role for pregnant women as a source of red blood cell formation. During pregnancy, the need for iron increases up to 2 times compared to when not pregnant due to an increase in blood volume, so pregnant women become susceptible to anemia (Fuada, 2019:49-60).

Hemoglobin levels before and after consuming green spinach stew

Based on the results of data on the frequency distribution of Hb levels, it was found that the hemoglobin levels of pregnant women before were 8 people (66.7%) and 4 people (33.3%) of pregnant women experienced mild anemia, after the intervention the hemoglobin levels after most experienced an increase, namely As many as 11 pregnant women (91.7%) had normal hemoglobin levels and 1 pregnant woman (8.33%) had mild anemia.

In an effort to prevent anemia, pregnant women are advised to increase blood volume through a supply of foods containing iron, folic acid and vitamin B12. Therefore, pregnant women are advised to consume foods that can form red blood cells such as liver, anchovies, red meat, nuts, green vegetables, egg yolks.

Based on research (Ningsih, et al. 2018: 986) it can be seen that after being given spinach and Fe tablets, the hemoglobin levels of pregnant women at the Tegalrejo Health Center Yogyakarta increased, with the light category being 9 pregnant women and the moderate category being 1 person. The increase in

hemoglobin levels of pregnant women at the Cinangka Community Health Center was due to the information provided by researchers before giving spinach to pregnant women, so that pregnant women became more aware of whether to consume it regularly for one week.

Based on the results of Hb level examinations carried out on pregnant women at the Cinangka Community Health Center before and after being given spinach and Fe tablets, it shows that there is an increase in Hb levels in pregnant women. Based on the results of this increase, it can be concluded that giving spinach and Fe tablets is effective in increasing levels. Hb in pregnant women at the Cinangka Community Health Center.

Bivariate Analysis

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V. CONCLUSION

This research can conclude the following: Characteristics of respondents (maternal age and parity of pregnant women), The most ideal age for mothers to become pregnant is 20-35 years because the reproductive period is still productive. The hemoglobin levels of pregnant women at the Cinangka Community Health Center before being given spinach and Fe tablets were mostly in the mild anemia category. The hemoglobin levels of pregnant women at the Cinangka Community Health Center after being given spinach and Fe tablets increased so that amount pregnant women who are in the mild anemia category increase. There is the effectiveness of spinach in increasing the hemoglobin levels of pregnant women at the Cinangka Community Health Center.

The suggestion from this research is that it is hoped that the research location will not be limited to community health center researchers so that they can improve education for pregnant women who experience anemia. It is hoped that pregnant women can expand their knowledge by reading or using other media to expand their knowledge about nutrition from vegetables and so on, so that pregnant women's nutrition is fulfilled. It is hoped that research will continue on the effectiveness of giving boiled spinach using more samples and it is hoped that other methods will be used to meet the needs of pregnant women.

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