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Influence Green Bean Extract in Increasing Hemoglobin (Hb) Levels in Trimester II Pregnant Motherat Pratama Clinic of Bunda Tessa Dusun 1A Sidourip Sub-District Beringin Deli Serdang Regency in 2023

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ABSTRACT

Introduction: Pregnant women with anemia are still many in Indonesia, including in North Sumatra which reached 39%. Pregnancy is very susceptible to anemia that can cause bleeding in pregnant women. Purpose: The purpose of this study was find out the influence Green Bean extract in increasing Hemoglobin Levels in Trimester II Pregnant Women in Pratama Clinic of Bunda Tessa Dusun IA Sidourip Subdistrict Beringin District Deli Serdang in 2023. Method: Types of Quasy Experiment with the design of One Group Pretest Posttest. The population was 20 people. Sampling technique with purposive sampling was a selection of samples based on certain characteristics as many as 10 people, the statistic test used wilcoxon test. Result: Based on the result showed that the data obtained was pre-test minimum value of 8.4 maximum 11.9 while post-test minimum 10.8 maximum13.7. From the results of statistical tests thatwas with wilcoxon test known value P-value= .11 <. 05. Conclusion: The ability in this study is the effect of green bean extract on increasinghemoglobin levels in trimester II pregnant women in Pratama Clinic of Bunda Tessa Dusun IA Sidourip Subdistrict Beringin District Deli Serdang in 2023. It is suggested to be an evaluation and reference material for health workers to be applied and can inform pregnant women who have anemia in a natural way that is by consuming green bean juice as much as 200 ml.

Keywords: Green Bean Extract, Hemoglobin, TM II Pregnant Women

1. INTRODUCTION

Pregnancy is a physiological process that changes the condition of pregnant women. One of the changes that often occur during pregnancy is anemia. Iron deficiency anemia is one of the most common disorders during pregnancy. Pregnant women are declared anemic if the hemoglobin level is 10 gr% (1).

Problems that occur in pregnancy, in young pregnancy such as hyperemesis gravidarum, vaginal bleeding (this bleeding can be caused by abortion, ectopic pregnancy and hydatid mole), hydatid mole, ectopic pregnancy, anemia. Meanwhile, in late pregnancy such as vaginal bleeding (this bleeding can be caused by placenta previa, abruption of the placenta, uterine rupture), severe headaches, blurred vision, swelling of the face and fingers, inability to feel fetal movements, and severe abdominal pain (2).

Pregnancy is very prone to anemia. This is due to the increased need for iron in the mother's body, along with increasing gestational age. When you have anemia, your blood doesn't have enough healthy red blood cells to carry oxygen to your tissues and to the fetus (3).

Anemia is a condition in which the body has too few red blood cells (erythrocytes), where the red blood cells contain hemoglobin which functions to carry oxygen to all tissues
(3). The prevalence of anemia in pregnant women in the world is around 42%. The prevalence of anemia in developing countries is 43% and developed countries is 9%. Anemia is estimated to contribute to more than 115,000 maternal deaths and 591,000 prenatal deaths globally per year (4).

Hemoglobin level is a measure to determine whether a person has less blood or not, by using a tool

to check hemoglobin levels in the body, pregnant women are said to be anemic if the Hb count from the mother is below g / dL in the first and last trimester, and under
10 g / dL in the second trimester. If the Hb level in the pregnant woman is below 7 g / dL, it is categorized as severe anemia (4).

Iron deficiency before pregnancy, if left untreated, can cause the mother to suffer from anemia. Anemia can increase the risk of death of pregnant women during childbirth, give birth to babies with low birth weight babies, fetuses and mothers are prone to infections, miscarriage, and increase the risk of premature births (5).

Based on data from the World Health Organization (WHO) in 2015, it was reported that the prevalence of anemia in pregnant women in the world was 41.8% (6). According to Riskesdas 2018 data, the prevalence of anemia in pregnant women in Indonesia increased compared to 2013, in 2013 as many as 37.1% of pregnant women were anemic while in 2018 it increased to 48.9% (7). Based on the profile of the health office of North Sumatra Province in 2017, the coverage of anemia for pregnant women is in the range of 15 to 39% (8).

Foods that can be consumed by pregnant women are one type of legume that contains high iron. Green beans (vigna radiata) Green beans are one of the food ingredients that contain substances needed for the formation of blood cells so that they can overcome the decrease in hemoglobin. Green beans are very beneficial for the health of pregnant and lactating women, as well as to support the growth period of the children of pregnant and lactating mothers, as well as to support the child's growth (9).

Green beans can play a role in the formation of red blood cells and prevent anemia because the content in green beans is very complete so it can help increase hemoglobin (Hb) in pregnant women (10). The amount of iron content in green beans is 6.7 mg per 100 grams of green beans and one of the effective forms of serving green beans is by consuming green bean juice (11).

Processing of green beans through previous immersion aims to facilitate the absorption of iron which is needed in the process of maturation of blood cells. One of the effective forms of serving green beans is green bean juice, where water and the dregs are filtered and separated so that the drink is nutrient dense (12).

Based on data from the Mother Tessa Primary Clinic in 2019, 350 pregnant women visited TM I to TM III, of which there were 85 pregnant women who experienced anemia from mild to severe anemia. And during the visit of pregnant women in June-August 2023, there were as many as 55 people, where the number of pregnant women, especially in the second trimester, was 20 people. Based on the results of the examination of hemoglobin levels carried out by the Mother Tessa Primary Clinic on pregnant women, it was found that 10 pregnant women had anemia because their hemoglobin levels were below 10 gr%.

Based on the initial survey conducted by researchers conducted on July 15, 2023 at the Mother Tessa Pratama clinic, it was found that 25-30 visits by pregnant women for 1 month. In July-August 2023, there were 55 visits of pregnant women and 20 people aged 13-28 weeks of which there were 8 pregnant women who experienced anemia with Hb levels below
10 gr%. And the researchers interviewed 8 women who had anemia, all of whom said that the pregnant woman felt weak, tired, lethargic during this pregnancy. When researchers asked about the fulfillment of nutrients (have they ever consumed green beans during pregnancy), pregnant women said that they had never consumed green beans because they did not know beforehand that consuming green beans could prevent anemia (increasing hemoglobin levels).

2. METHOD

This type of research is a quasi experimental design using One Group Pretest- Posttest Design, namely research activities that provide a pretest before being given treatment, after being given treatment then giving a final test (posttest). The location of this research was carried out at the Bunda Tessa Primary Clinic, Dusun 1A, Sidourip Village, Beringin District, Deli Serdang Regency in July-November 2023.

The population of this study is the population in this study were all pregnant women in the second trimester who visited pregnant women at the Primary Clinic Mother Tessapa in July-November as many as 20 people. Sampling in this study was purposive sampling where 10 people were taken who met certain criteria.

Primary data collection was taken directly by using interview methods and direct measurements consisting of common respondents' identities, Hb content data and nutritional intake data. Meanwhile, secondary data was obtained by taking data from the profile of the research location regarding an overview of the research location and ANC visit book notes regarding the number of pregnant women at the Primary Clinic of Bunda Tessa Dusun 1A, Sidourip Village, District of Beringin, Dusun 1A. Deli Serdang Regency, 2023. Data processing methods consist of editing, coding, tabulating, data entry and cleaning.

The analysis technique used is univariate data analysis which is carried out on the independent variables and the dependent variable. The results of data analysis in the form of frequency distribution and percentage of each variable. Bivariate analysis is an analysis used to determine the relationship between independent variables and dependent variables with statistical tests with paired T test is a parametric test (normal distribution) used to find the relationship between two or more variables if the data is in the form of a numerical scale, but if the distribution of the data is not normal it can be used with the Wilcoxon test.

3. RESULTS AND DISCUSSIONS

Table 1. Frequency Distribution of Age, Education, Occupation, Parity, Pretest Hb Levels (gr / dl) of TM II Pregnant Women Respondents at the Primary Clinic Bunda Tessa

Variable	F	%
Age of Respondents (Year)		
20-25	5	50
26-30	2	20
>30	3	30
Education of Respondents		
SD	1	10
SMP	4	40
SMA	4	40
PerguruanTinggi	1	10
Job of Respondents		
IRT	5	50
traders	3	30
farmers	2	20
Parity		
Primipara	4	40
Multiparous	6	60
Level of Pretest Hb (gr/dl)		
Normal (≥11)	3	30
Mild Anemia (9-10)	5	50
Moderate Anemia (7-8)	2	20
Level of Posttest HB(gr/dl)		
Normal (≥11)	9	90
Mild Anemia (9-10)	1	10
Total	**10**	**100**

Univariate Analysis

Based on Table 1, it can be seen that the age frequency distribution of respondents at the Mother Tessa Primary Clinic, namely from 10 research respondents, the coverage of respondents who have 20-25 years of age is 5 people (50%), 2 people aged 26-30 years (20%).
) and those who have> 30 years of age are 3 people (30%).

Based on table 1, it can also be seen that the frequency distribution of respondents' education at the Mother Tessa Primary Clinic, which is from 10 research respondents, it is found that the coverage of respondents who have elementary education is 1 person (10%), who has junior high school education as many as 4 people (40%), who has 4 high school education. people (40%), and those who have tertiary education as many as 1 person (10%). Based on table 1 the frequency distribution of respondents' work at the Mother Tessa Primary Clinic, namely from 10 research respondents, the coverage of respondents who have a job as an IRT is 5 people (50 %), who have a merchant job as many as 3 people (30%), and those who have a farmer job are 2 people (20%). For the distribution of the frequency of pregnancy respondents at the Primary Clinic Bunda Tessa, out of 10 research respondents, it was found that the coverage of respondents who had primiparous pregnancies was as much as 4 people (40%), and those who had multiparous pregnancy were 6 people (60%). Based on table 1, it is also known that the frequency distribution of Hb levels of respondents at the Mother Tessa Primary Clinic before giving green bean juice, namely from 10 research respondents, it was found that the coverage of respondents who had normal Hb was 3 people (30%), who had Mild anemia amounted to 5 people (50 %) and those who have moderate anemia are 2 people (20%). Based on table 1, it shows that the frequency distribution of the Hb levels of the respondents at the Tessa Primary Clinic after giving green bean juice, namely from 10 research respondents, the coverage of respondents who had normal Hb was 9 people (90%), and those who had Mild anemia were 1 person (10). %).

Table 2 *Wilcoxon Test of Pretest and Posttest Hb Levels in TM II Pregnant Women*

Test Statistics[b]

	Posttest – Pretest
Z	-2.530[a]
Asymp. Sig. (2-tailed)	.011

a. *Based on positive ranks.*

b. *Wilcoxon Signed Ranks Test*

1. Bivariate Analysis

Based on Table 4.8 in the Wilcoxon test, it can be seen that from the table above, the value of sig = 0.011 is obtained, where
<0.05, it can be concluded that there is an effect of giving green bean juice on an increase in hemoglobin (Hb) levels in second trimester pregnant women of the Primary Maternal Clinic. Tessa Dusun 1A Sidourip Village, Beringin District, Deli Serdang Regency in 2023.

DISCUSSION

Based on table 1, the frequency distribution of respondents' hb levels at the Mother Tessa Primary Clinic before giving green bean juice, namely from 10 research respondents, it was found that the coverage of respondents who had normal Hb was 3 people (30%), 5 people with Mild Anemia (50%) and 2 people who have moderate anemia (20%).

Foods that can be consumed by pregnant women are one type of legume that contains high iron. Green beans (vigna radiata) Green beans are one of the food ingredients that contain substances needed for the formation of blood cells so that they can overcome the decrease in hemoglobin. Green beans can play a role in the formation of red blood cells and prevent anemia because the content in green beans is very complete

so that it can help the process of forming red blood cells. The amount of iron content in green beans is 6.7 mg / 100 grams of green beans and one of the effective forms of serving green beans is by consuming green bean juice.

Based on Table 1, the frequency distribution of post-test Hb levels in pregnant women in the second trimester at the Mother Tessa Primary Clinic after giving peanut juice, the average result is 12,290, with the coverage of respondents who have a normal Hb of 9 people (90%), and those who have mild anemia. amounting to 1 person (10%). So that it can be seen that there is no decreasing or fixed amount of Hb levels, but after giving green bean juice all respondents experienced an increase in Hb.

In contrast to the results obtained before treatment or receiving green bean juice treatment after being given green bean juice regularly for 2 consecutive weeks, there was an increase in Hb in pregnant women according to table 1 due to consuming green bean juice, because of the content in Green beans have iron which can prevent anemia during pregnancy, iron needed by pregnant women as much as 48 mg / day can be affected by consuming 200 ml of green bean juice / day (2x14 days = 28 times giving green bean juice.

The effect of green beans (Vigna radiata) in increasing hemoglobin (Hb), because green beans (Vigna radiata) are one of the foods that contain substances needed for the formation of red blood cells so that they can overcome the effects of reducing Hb. Green beans are very beneficial for pregnant women because they contain nutrients such as protein, fat, iron, calcium and others. The nutritional content contained in green beans is 6.7 mg / 100 grams. In pregnant women, the amount of iron needed by pregnant women during pregnancy is 20 to 48 mg. Therefore, giving green bean juice is very important for pregnant women who consume green bean juice (vigna radiata) 2 times a day in the morning and evening with 200 ml of green bean juice given for 14 days (2 x 14 days = 28 times). giving to 1 pregnant woman for 2 weeks turns out to have an effect on giving green bean juice so that hemoglobin levels in pregnant women have increased. Green beans are very beneficial for everyone, not only for pregnant women, green beans are beneficial for mothers who are breastfeeding.

This is in line with the research conducted by Siti Nur Asyah Jamillah Ahmad's research which states that there is an effect of giving green beans on increasing hemoglobin levels in pregnant women at Naioni Health Center. Then also in line with the results of Amirul Amalia's research which showed that there was an effect of giving green bean drinks to increase hemoglobin levels. And according to the research of Yuhendri Putra & Fitriani MS, there was an effect between Hb levels before and after the intervention was given green bean juice (13).

This research is also in line with the 2018 research by Lidia Widia on the effectiveness of giving green beans as an effort to increase hemoglobin levels in pregnant women in the first trimester, using the one group pre and posttest design on 20 pregnant women in the first trimester and using the Wilcoxon test. - value 0.001 (<0.05), which means that H0 is rejected and Ha is accepted, that is, there is an effectiveness of green beans in increasing hemoglobin levels in pregnant women in the first trimester (16).

Furthermore, in a study conducted by Vina Aulia in 2018 which discussed the effect of giving green bean juice (vigna radiata) on hemoglobin levels of anemic pregnant women, the results of her research were obtained on 10 respondents using a Pretest-Posttest Control Group Design. The test used was the Anova test, obtained a p-value of 0.002 which was smaller than 0.05, so H0 was rejected and Ha was accepted, that is, there was an effect of giving green bean extract (vigna radiata) on hemoglobin levels of anemic pregnant women (17).

Based on Table 2 the distribution of the Wilcoxon test frequency, the results of the difference in the average Hb level before and after the intervention of giving green bean juice tested with the Wilcoxon test can be seen that from the table above, the value of sig = 0.011 is obtained where <0, 05, it can be concluded that there is an effect of giving green bean juice on the increase in hemoglobin (Hb) levels in second trimester pregnant women of the Primary Clinic of Mother Tessa Dusun 1A, Sidourip Village, Beringin District, Deli Serdang Regency in 2023.

This is also in line with research (Retnorini, Widatiningsih, & Masini, 2017) at Pare Pare Temanggung

District, the average hemoglobin level of pregnant women before receiving treatment in the intervention group was 9.8906 and in the control group was 10.1063 average hemoglobin of pregnant women after receiving treatment in the intervention group was 10.7969 and in the control group was 10,1250. There was a difference in hemoglobin of pregnant women before and after being given the intervention in the intervention group with ρ 0,000 in the control group with ρ 0.056 there was an effect of giving green bean juice and tablets Fe on hemoglobin levels in pregnant women with ρ 0.000 (14).

Green beans can play a role in the formation of red blood cells and prevent anemia because the content in green beans is very complete so it can help increase hemoglobin (Hb) in pregnant women (10). The amount of iron content in green beans is 6.7 mg per 100 grams of green beans and one of the effective forms of serving green beans is by consuming green bean juice (11).

Green beans are good for consumption because they are beneficial for health, one of which is to treat anemia or increase hemoglobin levels. The nutrient contained in green beans is iron. The iron content in green beans is 6.7 mg
/ 100 g. Iron found in green beans is high in the legume group. Iron is a major component in the formation of hemoglobin. If iron intake is lacking, it will interfere with the process of forming hemoglobin in the blood, so that it can cause a deficiency in hemoglobin levels or what is known as anemia (15).

The effect of green beans (vigna radiata) in increasing hemonglobin levels, because green beans (vigna radiata) are one of the foods that contain substances needed for the formation of blood cells so that they can overcome the effect of reducing Hb. Green beans (vigna radiata) can play a role in the formation of red blood cells and prevent anemia because the phytochemical content in green beans is very complete so that it can help the process of hematopoiesis. Green beans (vigna radiata) also contain vitamins and minerals. Minerals such as calcium, phosphorus, iron, sodium and potassium are abundant in green beans (vigna radiata).

Green beans are very beneficial for the health of pregnant and lactating women, as well as to support the growing period of children. Iron content in green beans is mostly found in embryos and seed skins. with the amount of iron content in green beans as much as 6.7 mg / 100 grams of green beans and one of the most effective forms of serving green beans is green bean juice, which is water and the dregs are filtered and separated so that the drink is nutrient dense.

Consuming green bean juice (vigna radiata) 2 times a day each with 200 ml of green bean juice given for 14 days (2 x 14 days = 28 times given to 1 pregnant woman for 2 weeks, it turns out that the results have an effect on giving peanut juice green so that hemoglobin levels in pregnant women have increased, where green beans contain iron which is high enough for the formation of red blood cells so that it can overcome the decrease in hemoglobin.

Green bean seeds that have been boiled or processed and then consumed have high digestibility. Green beans can play a role in the formation of red blood cells and prevent anemia because the content in green beans is very complete so it can help increase hemoglobin (Hb) in pregnant women. The amount of iron content in green beans is 6.7 / mg green beans and one of the effective forms of serving green beans is by consuming green bean juice.

According to the assumptions of researchers, giving green bean juice to pregnant women can generally be effective in increasing good Hb levels. This can be seen from the results of research conducted on 10 TM II pregnant women at the Mother Tessa Primary Clinic, namely the results of research on respondents after being given green bean juice, the majority of Hb levels were normal, this indicated that there were no respondents who had decreased Hb levels or still after giving green bean juice.

In pregnancy Pregnant women should get additional iron for placental growth and fetal development, if pregnant women are deficient in iron and experience anemia during pregnancy, it will increase the risk of low birth weight babies, premature births and infant mortality. The government has been encouraging pregnant women to consume Fe tablets, it turns out that up to now many pregnant women do not comply with Fe tablets because they may not really like to take tablets, so another way to reduce the incidence of anemia in pregnant women must be supported and assisted by provide nutritional intake that is rich in iron

such as Vitamin C, fresh vegetables, fruits, meat, and nuts. One of the legumes is green beans where green beans contain as much as 6.7 mg / 100 grams of green beans. processed into green bean juice drink where the water and the dregs are filtered and separated so that the drink is nutrient dense. and can help increase hemoglobin in pregnant women. Green beans (vigna radiata) green beans are not only for pregnant women but are also beneficial for everyone, especially mothers who are breastfeeding, so that they can help the child's growth and development.

Before the treatment of pregnant women with 10 respondents, there were 2 pregnant women with normal Hb, 5 people who had mild anemia and 3 people who had moderate anemia, and the researchers interviewed 10 women who had anemia, all of them said that the pregnant women felt weak , tired, lethargic during this pregnancy. When researchers asked about the fulfillment of nutrients (have they ever consumed green beans during pregnancy), pregnant women said that they had never consumed green beans because they did not know beforehand that consuming green beans could prevent anemia (increase hemoglobin levels).

After being given treatment to pregnant women with 10 respondents and the green beans are processed into green bean extract then the green bean juice is consumed by pregnant women 2 times a day each with a dose of 200 ml of Green bean juice given for 14 days (2 x 14 days = 28 times given to 1 pregnant woman for 2 weeks and then we check the Hb of pregnant women on the 15th day, the results have increased where from 10 respondents Hb for normal pregnant women to 9 people and 1 person with mild anemia because the iron content in green beans is 6.7 mg / 100 grams of green beans and one of the effective forms of serving green beans is to consume green bean juice.

4. CONCLUSIONS

Based on the results of the research that has been carried out and the discussion described previously, the results of the difference in the average Hb level before and after the intervention of giving green bean extract tested with the Wilcoxon test can be seen that from the table above the value of sig = 0.011 < 0.05, it can be concluded that there is an effect of giving green bean juice on the increase in hemoglobin (Hb) levels in second trimester pregnant women of Mother Tessa's Primary Clinic, Dusun 1A, Sidourip Village, Beringin District, Deli Serdang Regency in 2023.

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